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Full Name of Author — Nom complet de l'auteur

HOGG JOHN MERVYN

Date of Birth — Date de naissance

17 · 08 · 37

Country of Birth — Lieu de naissance

ENGLAND

Permanent Address — Résidence fixe

8011-174 STEET,
EDMONTON, ALBERTA T5T0G5

Title of Thesis — Titre de la thèse

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Dr R.B. ALDERMAN

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The Relationship Of Self-Esteem And Other Variables Among Competitive Swimmers Of Differing Age And Ability

by

© J.M. Hogg

A THESIS

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(SIGNED) J.M. Hogg

PERMANENT ADDRESS:

8011 - 174 Street

Edmonton

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DATED 13th October 1982

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled The Relationship Of Self-esteem And Other Variables Among Competitive Swimmers Of Differing Age And Ability submitted by J. Hogg in partial fulfilment of the requirements for the degree of Doctor of Philosophy
Physical Education.

R.K. Anderson
Supervisor

Murray Smith

External Examiner

Date Sept. 24, 1982

ABSTRACT

Finstly, the purpose of this study was to examine the relationships between self-esteem and the variables locus of control, trustworthiness and competitive anxiety among a large competitive swimming population. Secondly, these variables were analysed for significant differences as a function of age, sex and level of ability.

A questionnaire booklet was designed utilizing established instruments (Rosenberg, 1965; Rotter, 1966; Martens, 1977) to explore the variables in the general or global sense, while the instruments were modified to measure the variables in the specific or athletic sense. Male and female competitive swimmers (N=705) of varying age and ability, and members of swimming clubs across Canada, were administered the questionnaire.

Three way analyses of variance (SEX x AGE x ABILITY) were performed on each of the variables and indicated the presence of significant differences as a consequence of sex, age and level of ability. The tests of significance revealed the true extent of these differences. The correlations among the variables were closely examined. A negative relationship was found to exist between both global and specific self-esteem and competitive A-trait; a positive relationship was found to exist between self-esteem and locus of control; no relationship was realised between self-esteem and faith in others or faith in coach.

These results were then fully discussed in terms of their

practical implications for the coach.

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I must acknowledge the unflinching support and encouragement of my wife Sally and three children Duncan, Sarah and Lucy.

Finally, my thanks are extended to Dale Olchowy who very patiently prepared this manuscript.

But man, proud man,
Dress'd in a little brief authority,
Most ignorant of what he's most assur'd,
His glassy essence, like an angry ape,
Plays such fantastic tricks before high heaven
As make the angles weep.

Measure for Measure [Act II, Scene 2]
William Shakespeare.

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A. Introduction

Although greater emphasis is being placed on the psychological factors that are critical to athletic performance, it is still apparent that there is much to learn about the finities of race preparation in most sports. Invariably, both coaches and athletes are prone to pay no more that lip service to the cognitive and affective skills that they regard as incidental to the all important physiological factors. Perhaps there is good reason for this. Even from an academic standpoint it is very difficult to identify and control the psychological elements related to athletic performance with any degree of certainty. Because psychological factors cannot be consistently regulated to produce powerful effects upon performance, many coaches and athletes still have to be convinced of their importance. It is much easier to suggest that the athlete simply has not got what it takes, thereby infering that most of the problems associated with final performance have their roots in the genetic make-up of each individual. Fortunately, there are some experienced and wise coaches, who by virtue of their tireless observation of countless athletes, possess the natural ability to appreciate and teach the necessary psychological skills.

While the less experienced coach may need some help in this respect, perhaps Bird, Cripe and Morrison (1980)

overstated the problem when they indicated that most coaches, while socializing young athletes into a predisposition toward achievement strivings, have almost totally neglected the psychophysiological ramifications implicit in a highly competitive framework. It is imperative then, that the coach pay equal attention to those psychological skills necessary for consistent performance.

B. The psychological skills

Coaches and athletes recognize three major psychological factors that bear influence on the success or failure of a competitive performance. The first skill is, emotional control. It is specifically concerned with those emotional states which are known to interfere with performance, e.g. anger, jealousy, frustration, anxiety and self-esteem. The second skill is attentional control which focuses on the ability to attend to the appropriate stimuli in the sport situation, accompanied by the athlete's ability to shift attention from one field of stimuli to another while maintaining attention or concentration over a period of time. The basic premise here rests in the belief that performance is impaired simply because attention is focused on irrelevant detail (Wine, 1971). Largely due to the work of Nideffer (1976), athletes can be taught to develop an appropriate style of attention which will help them focus on the precise cues in a given competitive situation. Finally, interpersonal skills, or those abilities which permit

athletes to interact effectively with other athletes, coaches, peers, opponents and the media, are of significance if the athlete is to minimise all external pressures. Only limited research is available in this area though team cohesiveness has been the topic of several studies (Rees, 1980 and Nettleton, 1980). For the purposes of this study, only the first psychological skill will be considered.

Valuable research from varying directions has led the sports psychologist to a much clearer understanding of the first skill. Emotions are positive or negative feelings or reactions to events that happen around us. They are particularly evident in the competitive situation. How athletes feel is usually how they will perform. Like everyone else, an athlete will experience the basic emotions of joy, disappointment, love, fear, shame and surprise within the competitive situation. Anxiety is one of the strongest emotions. Current work in the field is providing the athlete with meaningful and effective anxiety management programs that do help keep performance stresses under control in an individualized way. In performance evaluation, it seems only natural that athletes will experience some anxiety which can either be used to advantage, or be allowed to take a real stranglehold on their performance. It is extremely useful for coaches to be able to differentiate between those athletes who may require a degree of stimulation prior to competition, those who may need assistance in dealing with high anxiety states, and those

who are best left to themselves. These anxiety management programs are still in their infancy and have had little time to prove their true worth as a complete cure for erratic performances among excessively high or low anxious athletes. Coaches believe that there is a precise level of arousal for each individual athlete in different situations. How to achieve and maintain these appropriate states of arousal has been very much a hit and miss process. Athletes need to be taught the skills of anxiety control while appreciating that competitive anxiety is a state of mind which is controlled cognitively. However, if the application of coping strategies is not sensitive to the make-up, self-awareness and self-esteem of each individual athlete, then they will achieve little more than a band aid effect.

Another important influencing emotion is self-esteem. It is critical to develop optimum levels of self-esteem if the athlete is to perform consistently well under a variety of conditions. Self-esteem is at the core of each individual's strivings toward perfection and without a good self-image and true meanings of self-worth no athlete can hope to be successful or maintain a high level of performance for long.

The consideration of self-esteem in the athletic context is relatively new. In fact, it is not customary to equate low self-esteem with athletic prowess. However, too much success may increase self-esteem to the point of over-confidence, while constant failure will surely produce

excessively low levels of self-esteem. Both these states may result in decreased performance efficiency. If coaches are unable to predict with any degree of accuracy the levels of self-esteem among their athletes, they will be less likely to detect the symptoms associated with this psychological concept. They will also be unable to help their athletes attain an optimal level of self-esteem unless they are able to measure accurately true states of self-esteem in a given competitive situation. While there are many global measures of self-esteem which can be adapted to become sport specific, there is still room for further research in the area.

Reality therapy (Glasser, 1965) teaches that everyone has the responsibility to fulfil their basic needs and come to acquire true feelings of self-worth. It is critical to recognize that each athlete is very much responsible for performance outcomes. It is really they rather than the coach who make the decisions, and for the most part those decisions rest on their ability to control their emotions in both the training and the competitive setting. It would seem imperative that the athletes are able to control their anxiety states to the best advantage, while exercising feelings of total athletic self-awareness, self-assuredness and self-esteem in the evaluative situation.

However, when potentially good athletes appear to lack these psychological skills or qualities, precious little seems to be done about it. It has even been suggested that

perhaps it is the competitive process within the sport

> that weeds out those athletes who not only have inferior physical skills but also have failed to develop the demanding psychological skills required in high level competition (Martens, 1981:170)

Obviously the coach needs to be more enlightened, to develop a more positive attitude to the teaching of these essential skills, and so equip the athletes with the right psychological tools.

C. Some important definitions

Both the sport-anxiety and self-esteem fields are somewhat confusing. Different definitions have given rise to many methodological formulations and theoretical implications. It is necessary to clarify some of the more important terms for the purposes of this investigation.

Arousal

Psychologists conceptualize behavior as varying along two dimensions - direction and intensity. The intensity level of behavior is termed arousal. It is best to conceive of arousal as a continuum and many of the popular terms used are in fact employed to describe various points on this continuum. The control of arousal necessitates the ability to influence this intensity dimension of behavior which ranges from very calm and relaxed to very excited and tense. It is important for the athlete to manipulate and experience the optimum level of arousal for any given competitive situation whether this means raising or lowering existing

levels of arousal. Usually, when arousal levels are high the person will experience anxiety states. Consequently, anxiety states are closely associated with the concept of arousal.

Anxiety

Anxiety is a confusing term with unavoidably negative connotations related to either states of tension or depression. Endler (1977) described anxiety as an emotion which is inclusive of subjective and manifest bodily disturbances that are out of proportion to the threat, directed toward the future and are somewhat unpleasant. Spielberger (1966) identified two types of anxiety - trait and state anxiety.

Trait anxiety is a predisposition to perceive certain situations as threatening and to respond to these situations with varying degrees of state anxiety. Spielberger defined A-trait

> as a motive or acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively non-dangerous circumstances as threatening and to respond to these with state anxiety reactions disproportionate in intensity to the magnitude of the objective danger. (Spielberger, 1966:17)

Spielberger defined state anxiety as

> a transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time. The condition is characterized by subjectively perceived feelings of tension and apprehension and activation of the autonomic nervous system (Spielberger, 1972:39).

Endler's interactional model of anxiety suggested that for the level of anxiety normally experienced in a person to be increased, a situation must be congruent with the

specific trait anxiety of the person.

Competitive anxiety

Martens (1977) identified a sports specific competitive A-trait within the general construct of anxiety. Competitive anxiety refers to a relatively stable individual difference in the tendency to respond with elevations of A-state in a particular competitive situation. He also suggested two components specific to the sport competition situation. These are the uncertainty of the outcome and the importance of the outcome. Klavora (1974) applied trait-state theory to competitive anxiety and defined competitive A-state as

> a transitory anxiety experienced by athletes before and during athletic competition which is subjectively characterized and consciously perceived by feelings of tension, apprehension and activation of the autonomic nervous system (Klavora, 1974:22).

Whenever there is an evaluative or competitive situation that is perceived by the athlete to be personally threatening, and when there are expectancies surrounding the performance, and the outcomes of the competition are of significant consequence to the athlete, then the presence of state anxiety will be experienced to a greater or lesser degree. Competitive anxiety is an emotional response predicated on an individual athlete's perceptions of a competitively threatening situation. Many athletes, especially where fine coordination and precise decisions are critical, believe that nervous tension reflected in over-anxious states is the factor most frequently responsible for poor performance. They need to be aware of

those situations that excessively raise or lower their anxiety states and consequently inhibit their performance.

Self-concept

The self-concept and the self-image are somewhat similar concepts and comprise the persons' view of themselves. It is a highly complex aspect of personality and according to Coopersmith (1967) is an abstraction that persons develop about the attributes, capacities, objects and activities which they possess and pursue. This abstraction is both formed and elaborated upon in a variety of ways - in social intercourse, in private reactions to self, in mastery in solving developmental tasks and simply in the competence to deal effectively with life's situations. Self-concept is best defined as

> those physical, social and psychological perceptions of ourselves that we have derived from our experiences and our interactions with others (Brooks and Emmert, 1976:39).

Self-esteem

Self-esteem is defined by Coopersmith as,

> the evaluation which the individual makes and customarily maintains with regard to self (Coopersmith, 1967:5)

Self-esteem is a multifaceted phenomenon that governs a person's thinking and behavior in a variety of ways (Chrzanowski, 1981). It is a personal judgement of self worthiness which is reflected in the attitudes and feelings that an individual holds toward himself. It can be a negative or a positive attitude. Low self-esteem is

characterized by self-rejection, dissatisfaction and even self-contempt. High self-esteem is reflected in self-respect, self-satisfaction, self-importance, self-control and expressions of self-worthiness. Self-esteem has two interrelated aspects. The first is a sense of personal efficacy and the second a sense of personal worth. For high self-esteem it is important for these two aspects to be functioning effectively. Self-esteem is the one trait, more than any other, that influences the way in which a person deals with life's situations. It explains much about peoples' behavior since most behavior is determined by the way persons feel about themselves.

The terms self-concept and self-esteem are often used interchangeably. But there is an important distinction between the two. Self-esteem is an affective state, whereas self-concept is a set of ideas people have about themselves. Beane & Lipka (1981) suggested this theoretical distinction defining self-concept as descriptive and self-esteem as valuative. Self-concept inclines a person toward behavior that is consistent with personal beliefs. Self-esteem influences how those beliefs are carried into action. When self-esteem and self-concept are mutually supportive then a person will act decisively and responsibly (Clemes and Bean, 1981). Similarly, self-esteem should not be confused with <u>self-confidence</u> which only involves a temporary estimate of success in carrying out a task or role and may be unrelated to an overall level of self-esteem (Dickstein, 1977).

Neither is it self-acceptance which refers operationally to the extent to which the self-concept is congruent with the individuals' description of their ideal selves. Simply expressed, self-esteem is feeling good or poorly about oneself.

Athletic self-esteem

Athletic self-esteem is the value athletes place on their success, capabilities, values, aspirations and self-worth in the athletic context. Self-esteem is a somewhat global term and usually reflects individuals' view of themselves as persons. However, it can also be employed in a specific sense and so reflect individuals' view of themselves as athletes or even more specifically, as competitive swimmers. Self-esteem is a relatively enduring characteristic but nonetheless it is possible for persons to judge themselves to be highly competent as competitive swimmers, moderately worthy as scholars and quite inadequate as musicians. In rationalizing this judgement people will not destroy their self-esteem but rather place it in perspective. In this way a general or global level of self-esteem is reached. Specific or athletic self-esteem may well positively influence global self-esteem and vice versa. It is also possible to possess extreme levels of self-esteem. Levels that are too high may cause the athlete to border on wishful thinking or daydreaming, while excessively low levels will almost certainly endanger performance potential.

D. Anxiety and self-esteem

Athletic self-esteem may be subject to regular evaluation. In so far as global or specific self-esteem is perceived to be threatened, then the athlete will experience increased anxiety states. Similarly, repeated failure is invariably accompanied by loss of self-esteem. The literature seems to support a negative relationship between anxiety and global self-esteem. This begs the question whether people with higher levels of self-esteem are more likely to experience lower levels of anxiety and so enjoy better performance control, or whether people with low self-esteem experience high anxiety states and so fail to perform to the best of their ability. There are no studies available at this time that have addressed the nature of the relationship that might exist between global self-esteem or specific athletic self-esteem and competitive anxiety.

E. Self-esteem, locus of control, and faith in others

If studies support a relationship between self-esteem and anxiety in global terms, then it may be fruitful to examine other important relationships evident in the literature. Garvie (1979) found that self-esteem clustered with locus of control and faith in others to form a factor he labelled 'central belief'. This has importance in the coaching setting implying the possible influence of these variables on the attitudes and behaviors of athletes.

Locus of control

Rotter (1966) clarified the concept of locus of control and identified two aspects which he labelled internal locus of control or internality, and external locus of control or externality. Internal control refers to individuals who have a strong expectancy toward... "the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control", while external control refers to those individuals characterized as having a strong tendency toward..."the perception of positive and/or negative events as being unrelated to one's own behaviors in certain situations and therefore beyond personal control."(Lefcourt, 1966:207) Simply stated, those subjects with high internal locus of control believe that the outcomes of significant events are the consequence of their own actions, while externals tend to perceive event outcomes as totally beyond their control and more a question of luck or chance. Persons with high internality will perceive that any event is contingent upon their own behavior and their own relatively permanent characteristics. Such persons believe that they are responsible and in control of their destiny. They are also more alert to those aspects of the environment that provide useful cues that help them direct their future behavior. They attempt to improve their environmental conditions and eventually come to place a higher value upon their own skill. Internals use positive self-reinforcement and indulge in higher

self-evaluations. Their behavior is not just determined by expectancies but also by the value of the goals toward which the individual's behavior is oriented (Phares, 1976). Ultimately, those with high internal locus of control become more resistive to subtle influences which suggest that they are not in control. They appear more capable of sustaining task performance under stress conditions and are better able to focus their attention (DiNardo and Raymond, 1979).

On the other hand, externals are unable to evaluate their behavior adequately and usually put down the results of tasks to chance or to the influence of external factors beyond their control. In situations that demand quick and precise decisions, externals appear to be more pressurized and regard themselves as less responsible for performance outcomes. Katkovsky, Crandal and Good (1967) suggested that parental rejection, primitive and dominating behavior, and the excessive use of extrinsic rewards appear to encourage externality.

Locus of control and anxiety relationships have been suggested. Internality is associated with low anxiety levels whereas externality is linked with high anxiety (Phares, 1976). The literature also supports the notion that self-esteem and locus of control are positively correlated (Roe, 1979; Javitch, 1980). Research indicates that those with high levels of self-esteem have greater internality and feel a greater responsibility for performance outcomes, while those with low self-esteem are more external and

regard the results of their performance as more the product of chance or good fortune (Prawat, Grissom and Parish, 1979).

Faith in others

Faith in others is also a central factor affecting our beliefs and attitudes (Rosenberg, 1965). It is related to both self-esteem and anxiety. It is defined as one's degree of confidence in the trustworthiness, honesty, goodness, generosity and brotherliness of people in general. Persons who trust and respect human nature will tend to trust themselves and if they should despise others they may develop a self-contempt. Low self-esteem is directly related to statements of doubt about other people while those high in self-esteem usually exhibit greater faith in the trustworthiness of others. It has been suggested that trust is a catalytic process (Gibb, 1978). Trust would appear to generate trust and people high in trust tend to function well. It transcends all fear. Trust in oneself is related to trust in others. Trust and fear are also inversely related, and children with high self-esteem usually have good relationships and trust in others while those with low self-esteem have definite misgivings in their dealings with others (Clemes and Bean, 1981). In this study, in addition to the global factor of faith in others in general, attention will be paid to faith in the coach. Coaching trust is based on a relationship with the coach that is both honest and open, and one that will ultimately encourage

independence.

If self-esteem, locus of control and faith in others are related as suggested by Garvie (1979), then high self-esteem, internality and faith in others might help athletes attain their best performance. Low self-esteem, distrust in others and externality place athletes at odds with themselves and may encourage fear and anxiety. In accord with the suggestion that perhaps more variables should be added to self-esteem and anxiety in order to tease out the true magnitude of their relationship (Shrauger, 1972), self-esteem is examined in conjunction with both global and swimming specific locus of control, with faith in others and faith in coach, and with competitive A-trait to determine whether relationships among these variables are significant as a function of sex, age and ability.

F. Purpose and need for the study

It is apparent from the literature that self-esteem is critical to each individual and that the more readily optimum levels can be attained the less the athlete will be overcome by threat and anxiety. It can be logically argued that if excessive anxiety states destroy athletic performance, and if anxiety and self-esteem are related, then it is important to examine self-esteem carefully for relationships and differences as function of sex, age and ability. Similarly, if self-esteem, locus of control and faith in others, whether viewed globally or specifically,

are to be considered as central beliefs, then the strength and relationship of these beliefs in self and future performance potential is vital information in any coaching or learning setting. It is even suggested that attitudes, values and beliefs tend to share a common motivational source, often identifiable as self-esteem (Clemes and Bean, 1981).

If self-esteem is a crucial psychological factor then it is important to understand its significance in the athletic context, to examine what is meant by excessive states and whether these have some bearing upon performance. It is possible to come to some understanding of athletic self-esteem by carefully observing the athlete's behavior. Further, if excessive states of self-esteem are detrimental to performance, then it may be possible to suggest positive things coaches and athletes might do to attain the optimum levels necessary in a given competitive situation. The possibility of structuring self-esteem improvement programs along with some suggestions regarding their content will be discussed in chapters II and V.

The purpose of this descriptive study is primarily to examine the levels of global and specific self-esteem, locus of control, faith in others and competitive anxiety as they exist in a large competitive swimming population and to determine whether differences exist as a function of sex, age and level of ability. If meaningful relationships unfold, then there will be a need to express these in

practical coaching terms. Although it is not the purpose of this paper to establish ways in which self-esteem - or other variables for that matter - might be best manipulated, some information regarding methods for controlling self-esteem levels will be provided in a serious attempt to help the coach fully appreciate all the implications.

G. The hypotheses

Several hypotheses along with a number of salient questions have been generated from the literature. This study was limited to four major issues.

1. It was hypothesized in accord with the findings in the literature (Rosenberg, 1965; Wylie, 1974; Coopersmith, 1967) that a significant relationship existed between global and specific self-esteem measures and competitive anxiety traits among a competitive swimming population.
2. It was further hypothesized that a similar relationship existed between the variables of global and specific self-esteem of competitive swimmers and the variables of general and specific locus of control.
3. It was hypothesized that a significant relationship existed between the variables of global and specific self-esteem and the variables faith in others and faith in coach among this competitive swimming sample.
4. Finally, it was hypothesized that differences in these variables - global and specific self-esteem, general and specific locus of control, faith in others and faith in

coach, and competitive A-trait, - existed as a function of sex, age and ability.

II. REVIEW OF LITERATURE - SELF-ESTEEM

A. Introduction

It is the purpose of this review to examine the origin and development of self-esteem - a psychological construct that purportedly wields a strong influence on human behavior in a variety of contexts. The review will expose some of the more significant self theories before focusing on self-esteem as a function of age, sex, and ability, on self-esteem and its relationship to other important variables - notably anxiety, and on specific self-esteem as viewed in an athletic context. Research problems associated with the construct will be addressed along with some suggestions that may help the coach improve the levels of self-esteem among athletes. Finally, the pertinent research findings will be summarized.

Throughout the literature it is difficult to spotlight clearly the research that attends soley to self-esteem whether considered in a global or specific context. Usually, it has to be extricated from the mesh of self-concept theory, and the loose implications generated are not always accurate and precise. There is considerable confusion and fragmentation and recent studies in the area have lacked systematic theory, while introducing ambiguous variables and a host of ill-defined terms. However, the concept of 'self' has always played an inconsistent role in the history of psychology. Consequently, it is necessary to examine select

areas of the self-concept literature in general before attempting to focus upon self-esteem more specifically. Specific self-esteem research in the athletic context is extremely limited. It is intended to review the literature from an educational rather than from a clinical perspective. Results from clinically selected subjects may be totally different from the general population.

B. Self theories

The 'self' is the sum total of all that a person can call their own. It is the awareness of all the various beliefs, attitudes and opinions that people might hold about themselves (Hamachek, 1973).

However, self theories differ in their postulates and corollaries to an alarming extent. Early scholars studied self as a legacy from philosophy. Probably it was Allport (1943) who reintroduced the concept as a legitimate area of study. Attempts have been made to identify the critical elements and these multidimensional components can be readily seen in the terminology. Such terms as self-confidence, self-awareness, self-image, self-identity, self-concept, self-esteem, to label but a few, are quite frequently employed in the literature. Of these terms probably the most significant are self-concept and self-esteem. Earlier a theoretical distinction was made between these two constructs where self-concept refers to a set of ideas people have about themselves, and self-esteem

is a feeling of personal efficacy and worth.

The self-concept is inclusive of a person's ideas, the kind of individual a person really is, the traits, the idiosyncrises and characteristics that are possessed (Coopersmith and Feldman, 1974). In her definitive works on self-concept, Wylie (1961:1974) suggested that the construct is made up of various dimensions including clarity, abstraction, refinement, certainty, stability and realism. Self-esteem is also included but it was Rosenberg (1965; 1968) and Coopersmith (1967) who directed attention to self-esteem as the most important dimension of self-concept.

Dickstein (1977) took a philosophical look at self-concept and highlighted five stages in the development of self-concept with different types of self-esteem being appropriate at each stage. The stages she identified are - the dynamic self; the self-as-object; the self-as-knower; the self-as-integrated whole; and the self-less self. The dynamic self found expression in the work of Freud (1961). The self as an object of awareness is created by the person as a result of interaction with the environment. Both Mead (1934) and Piaget (1965) acknowledged the importance of recognizing other people for the development of self-awareness. Persons come to know themselves by first knowing others. The self as a knower comes about when the self, already an existing entity, is discovered through a process of self-reflection. Of course, there is always the possibility of inaccurate self-perception. If an

individual's subjective self-impressions determine behavior then complete understanding requires knowing how persons see themselves as well as having an objective appraisal of their abilities. Self as an integrated whole suggests that the self is structured through a variety of experiences and is comprised of all aspects of an individual's nature or potential. Jung (1956) believed that the self must be achieved through a life-long struggle and that the self is the point of balance between every aspect of the conscious and unconscious psychic life. This process is referred to as individuation by some psychologists, or the coming to self-hood or self-realization. Finally, the self-less self stage is reached when persons change the shape of their self in response to a rapidly changing environment. Dynamic self is essentially experienced by the infant. Self as an object is a feature of growing children who react to the expanding physical and social environment with increasing conceptual skill until they eventually come to view themselves as an object. Adolescents, having acquired a capacity for analytical thinking, now begin to reflect on the nature of themselves, and so obtain a self-knowledge (Mitchell, 1979). The final two categories of self as an integrated whole, and the self-less self tend to be characteristic of the more mature adult.

Epstein (1973) attempted to incorporate phenomenological views on the self-concept within an objective framework. He distinguished between the phenomenal

self or the self as known directly through self-perception and the self inferred from the reactions and observations of others. Recently, there has been a resurgence of interest in the self as it relates to many different areas of psychology - especially in psychotherapeutic formulations that view cognitions about the self as vital mediators in the maintenance and modification of behavior and in social psychological theories involving attribution (Weiner, 1974), cognitive dissonance (Festinger, 1957) and self-awareness (Dickstein, 1977). Suffice it to mention the 'looking glass self' theorists or symbolic interactionists who assert that one's self-concept is a reflection of one's perceptions of how one appears to others (Ziller, 1973; Shrauger and Schoeneman, 1963). However, most self-concept theorists believe that the construct is only significant in so far as it leads to better understanding of human behavior and so it is important to come to a knowledge of the person's conscious perceptions of the environment and of the self in relation to the environment.

Coopersmith (1967) traced the early development of the concept of self-esteem primarily through the writings of the Neo-Freudians. Earlier, James (1890) had identified three influencing factors on self-esteem. Firstly, human aspirations, beliefs, and values are a strong influence; secondly, achievement which is measured against aspiration and norms is of significance; and thirdly, the recognition and feedback individuals get from their peers, especially in

relation to the "social" self can greatly affect self-esteem. Mead (1934) elaborated on the 'social' self aspect and judged self-esteem to be largely derived from the appraisal of significant others by suggesting that individuals come to form their self-concepts through defining their behavior in terms of the expectations and reactions of others. Horney (1950) recommended that the formation of an ideal image will tend to bolster self-esteem as long as it is possible to work close to the standard set. However, if unrealistic levels are required then the ideal will not be achieved and this may result in dissatisfaction and frustration and eventually anxiety. But this idealized image is a forceful influence on how persons evaluate themselves. Self-esteem is a function of the degree of coincidence between the individual's ideal and actual self-concept (Stotland, Thorley, Thoren and Cohen, 1957). Some psychologists believe that self-image or the self-concept tends to possess a dual capacity - the <u>real self</u> is what the person is presently, while the <u>ideal self</u> is what the individual would like to be. Rosenberg noted

> There are a number of self pictures which may be psychologically important to the individual: his present self-image; his committed self-image (the type of person the individual has staked himself on being); the fantasy self-image (the type of person he would like to be if uncumbered by reality); the ego-ideal (the type of person he feels he should be); the future or possible self (the type of person he feels he may become); and the idealized image (the type of person he most enjoys thinking of himself as)...In addition, one would wish to learn about the presenting self or the picture of the self that the individual attempts to set forth to the world.(Rosenberg, 1965:274).

Persons may be presumed to be moving toward better every day adjustment and to be facilitating their self-development when their self-esteem and ideal self become more congruent (Perkins, 1958). Ineffectual functioning will occur if a discrepancy exists between the real and ideal self. However, Argyle noted

> A curious feature of the ideal self is that a person who attains it does not necessarily rest on his laurels enjoying the self-esteem, but may revise his goals upwards - like the high jumper who moves the bar upwards a notch (Argyle, 1972:189).

Maslow (1943) proposed an ordered motivational framework which identified six basic needs. These needs were closely related to the physiological, the most basic needs including hunger, thirst, sleep and sex; to the safety aspects, including both emotional and physical well being and safety needs; to esteem needs, including achievement, power and status; and finally to self-actualization or fulfillment which he regarded as the ultimate need. In this hierarchical model the basic needs must be satisfied first before any progression to a higher need can take place.

Glasser (1965) recognized two basic psychological needs - the need to love and be loved which are what meaningful relationships are about and the need to feel worthwhile both to ourselves and to others. In order to be worthwhile it is necessary to maintain a satisfactory standard of behavior. People have the responsibility to fulfill their needs and to execute this in such a way that they do not deprive others of the ability to fulfill their needs. The actions of

responsible persons provide them with positive feelings of self-worth and esteem. Festinger (1954) posited a process of social comparison with regard to self meaning. In the human organism there exists a drive to evaluate one's opinions and abilities. Self-esteem was not considered an absolute but rather evolved from a series of self-other comparisons. Coopersmith (1967) also recognized that the all important facet of self is the dimension of self-evaluation. This is the evaluative positive or negative self-attitude which persons direct towards themselves across various situations and which are significant determinants of important behaviors. Branden (1969) stated that there is a universal need for positive self-regard as the basis for normal behavior. Self-esteem is reflected in behaviors that are determined both by an individual's personality characteristics and the demands of the situation and it is from this interactionalist perspective that the construct must be reviewed. This drive for self-evaluation is an important concept for understanding the self and has great significance for behavior. Mischel (1973) suggested that affective self-reactions - as for instance, the enhancement of one's own self-esteem or the positive or negative feelings individuals might hold about themselves - presumably hinge on selective attentional processes by which persons attend only to very particular types of information available from an enormous array of possibilities. By selective attention persons can make themselves feel good or

bad and these feelings may be significantly influenced by prior success-failure experiences.

It is clear from the literature that high self-esteem is an inherent need. Everyone has a strong desire for esteem based on positive self-evaluation and the evaluation of others. An individual will express this need through competence, mastery, adequacy, achievement and recognition and satisfy it first in the home, then in the school and eventually in the competitive world. The cognitive-developmental view of Piaget (1965) is founded on the premise that both cognitive and affective structures emerge naturally from the interaction between the child and its environment. At the age of reason each child begins to develop a conscience, ideas on morality and basic values. The child starts to demonstrate a self-concept unique from all others during early adolescence accompanied by feelings, concepts, attitudes and self-understanding. Mid-adolescence is the all important period for the development of the self-concept and it is at this time that individuals should reconcile their values, their ideal selves, and their performance with the reality of the external world.

The relationship between self-concept and self-esteem can be viewed as both complex and dynamic. Both explain much about behavior since most behavior is motivated by a peoples' desire to feel good about themselves. Undoubtedly, self-esteem influences the way self-concept is expressed behaviorally. The development of self-concept and

accompanying self-esteem involve motivational and social constructs while placing emphasis on the meaningful actions of significant others (parents, teachers and coaches) and on the child's own interpretation of these actions. However, self-perception theorists (Bem, 1972) do not insist on the importance of social others as sources of information about self. Individuals can develop self-attitudes through observation of their own overt behavior and the external stimulus conditions under which it occurs. It would appear from the literature that the 'self' can only really be understood in terms of relationships with others. Individuals come to evaluate themselves as they perceive significant others to evaluate them. The evaluative positive or negative self-attitude which persons direct toward themselves across various situations is a significant determinant of crucial behaviors (Coopersmith, [redacted]). Similarly, self-esteem and its preservation is postulated to be a central force in the organization of beliefs about central goal objects. Self-esteem is a central belief and although widely accepted as a theoretically central variable it has been barely investigated as such. It is learnt early through a loving relationship with responsible parents and significant others who will both discipline and allow freedom in the exercise of newly acquired responsibility. Self-esteem is neither developed overnight nor is it destroyed instantly. It is an ongoing process and much behavior is engaged in what is essentially maintaining or

enhancing the established view of self as it appears to each individual.

In summary, self-esteem may be described as a multidimensional concept that is both global and specific, that is acquired and developed gradually, especially in the formative years, that is subject to modification by significant others as well as by personal experiences, that reflects itself as a relatively enduring characteristic rather than something that shifts all too readily from one situation to the next. Gergen and Morse (1967) regarded self-esteem as possessing a stable core but together with a series of peripheral esteems that are based on different role relationships which appear to vary quite considerably between situations. A comprehensive theory about self-esteem remains unformulated at this time though, understandably, it occupies a very important place in the psychology of sport. What persons think about themselves is probably the central concept in their lives.

C. Self-esteem as a function of age, sex and ability

The literature attempts to explain a number of important questions within the context of self-esteem. Two important issues are whether self-esteem is resistant to change or whether it accepts change as necessary to further self-development? Does it increase with age and ability? Without question everyone has need for a distinct and consistent self-image. It is one of the central features of

personality. Individuals cannot be understood unless the contents and structure of their self-concept are known. The origins of self-esteem are present in infancy with self-cognition, and as independence is experienced, children begin to form an inner image of the self and later to differentiate their limits and potential. They recognize how they see themselves and how other people begin to see them. Misinterpretations here may lead to negative feelings. However, certain conditions will lead to the realisation of a very positive self-concept. Child education, experiences with parents and teachers, sex role identification, and the recognition of capabilities all pointing toward respect and acceptance within the clearly defined limits of the child's environment are the conditions most likely to create positive self-esteem. Consequently, it is reasonably safe to conclude that self-esteem develops naturally with physical and psychological maturity but will be shaped to a greater or lesser extent by the experiences and confrontations that are encountered by each individual. The present view of the degree to which self-esteem can be subjected to change or modification will be discussed later in this review.

Growing up means finding out where one's interests are and arriving at some fairly stable perceptions of the world, of self and how one fits into it. Prawat, Grissom, and Parish (1979) discovered a natural increase in self-esteem scores as a consequence of age among third to twelth grade students. There is evidence that self-esteem during

adolescence can be relatively unstable while ego-identity is established (Coopersmith, 1967). However, Coopersmith agreed that self-esteem scores are likely to vary across different areas of experience and according to age, sex and other role defining conditions. A longitudinal study by Bachman and O'Malley (1977) showed a substantial increase in self-esteem as a function of age. Simmons, Rosenberg and Rosenberg (1973) found the greatest change in self-esteem occured between the ages of eight and eleven years. Developments during adolescent growth are often related to positive changes in self-perception. Pomerantz (1978) found self-esteem increased with age especially over the adolescent periods. It is generally accepted by psychologists that an individual's concept of self achieves a rather high degree of organization during the course of growth and development and finally comes to resist change once self-differentiation and self-definition have occurred (Lecky, 1945). Others believed that self-esteem remains relatively stable over time (Coleman, Herzberg and Morris, 1977; Monge, 1973). Engel (1962) investigated the stability of the self-concept during adolescence and her results demonstrated a relative stability over a two year period.

The literature seems divided between those who regard self-esteem as a relatively enduring quality over age and those who record a substantial increase with age at least until young adulthood. These differences could be present as a consequence of the use of diverse instruments. Also

Piers-Harris (1964) pointed out that the majority of the earlier studies were limited to college populations and this of itself proved to be a serious limitation. Cross sectional studies might only provide partial information concerning the stability of self-esteem measures at various age levels. Since much of the research reported is equivocal and the number of meaningful studies so few, ultimately this question will only be resolved confidently when both cross-sectional and longitudinal studies provide consistent results.

A second issue relates to self-esteem as a function of sex. Do males have significantly higher self-esteem than females? Prescott (1978), using the Franks-Marolla Self-Esteem Scale Semantic Differential (1974) on sixth-eighth grade school children, established significant differences as a function of sex with the males scoring higher. Similarly, Brockner (1979) determined that males were higher in self-esteem than females and that high self-esteem is more equated with the qualities associated with masculinity.

Research by Herbert, Gelfand and Hartman (1969), Froehlich (1978), Primavera, Simon and Primavera (1974) suggested that boys possessed higher levels of self-esteem than girls, and Suslavitz (1979) found self-esteem to be positively related to the possession of masculine type traits. However, several of these studies have methodological shortcomings and perhaps should be viewed

with certain reservation. Rosenberg (1965) was primarily concerned with sibling position, family structure and parental behavior in his classic study on the self-image of adolescents. There is a hint in his research that males possess higher self-esteem than females. However he expanded by suggesting

> that much of what goes on under the heading of sibling rivalry actually stems from invidious comparisons and unequal affection and approval of parents towards children; that these invidious comparisons are especially likely to be made between children of the same sex; and that sibling rivalry may be considerably less between children of opposite sexes. .....(Rosenberg, 1965; 118)

Smith (1975) discovered differences in self-concept as a function of sex among children attending independent primary school. Boys tended to rate themselves higher than girls. Using the Coopersmith Self-Esteem Inventory (1959) and that of Sears (1964), Smith (1978) also examined primary school children (12-14 years of age) attending state schools and observed negligible sex differences on the Coopersmith inventory and similar sex differences were found to exist on the Sears S.C.I. (1964) scale. Recently, Yates (1979) found males scored higher on self-esteem than females, but emphasized the need for a more sophisiticated statistical analysis to come to terms with the question. Spence, Helmreich and Stapp (1975) reported that males and females do not differ in positiveness of self-image. Although Smart (1978) found a difference in self-esteem as a function of age, she did not find any differences as a function of sex.

It has also been suggested that males tended to see themselves more positively with regard to impulse control and sexual attitudes, while females viewed themselves as having a more positive moral self-image (Offer, Ostrov and Howard, 1977).

Montemajor and Eisen (1977) contended that as individuals mature, their cognitions about the physical world undergo a shift from a concrete to an abstract mode of representation. An individual's self-concept might be expected to become more abstract and less concrete with age. Also, one would expect different forces to be at work shaping the affective behavior of boys as distinct from girls during adolescence which may reflect in differences in levels of self-esteem. On the other hand, Samuels and Griffore (1979) using Coopersmith's measure of self-esteem, found no significant differences as a function of sex, a finding also supported by Prawat, Grissom and Parish (1979).

Nicholls (1975) felt that sex differences could be expected in children's causal attributions and affective responses for achievement outcomes. Aspirations and expectations appeared correlated with notions of traditional sex role behavior and appropriate masculine and feminine personality traits. Males tended to explain their successes and attributed them to their ability. Females invariably underestimated their level of ability and overstressed the contribution of luck to their performance. This kind of attribution could play down female self-esteem as well as

heighten the external locus of control factor and cause observable differences between males and females. The literature does reveal significant differences between males and females in their orientation to achievement (Campbell, 1967; Ziv, Rimon and Doni, 1977). Abilities shape the level of self-esteem. For instance, self-esteem has been found to be correlated with educational and occupational attainment. Bachman and O'Malley (1977) found that self-esteem in high school has little or no causal impact on later educational or occupational attainment; that occupational attainment has a positive effect on self-esteem while post high school education has none; and that factors associated with educational success became less central to self-evaluations during late high school. Though the research tends to favor the view that sex differences are in evidence with boys displaying higher measures of self-esteem than girls; it is also clear that there need for further research.

D. Self-esteem and its relationship to other variables

There are studies devoted to the relationships between self-esteem and other important variables and although the empirical evidence to date)has not been entirely persuasive, some of the findings are worthy of mention. It is generally accepted that high self-esteem positively correlates with internal locus of control. Those people who believe that they are in control of the situation usually possess high levels of self-esteem, while those low in self-esteem

display evidence of externality. There appear to be close relationships between self-esteem and self-actualization, achievement, and creativity. Prawat (1976) found that self-esteem, internality and achievement motivation were interrelated in an adolescent population. High self-esteem females demonstrated higher internal locus of control than a similar male population (Prawat, Grissom and Parish, 1979). Internal adults displayed greater self-acceptance than external adults (Lombardo and Berzonsky, 1975).

Numerous studies have examined the relationship between self-esteem and academic achievement and reported a significant relationship (Purkey, 1970; Coopersmith, 1959; Bledsoe, 1967; Williams and Coe, 1968; Rosenberg and Simmons, 1971; and Gergen, 1971.) But equally there are others who have not found a significant relationship (Williams, 1973; Wylie, 1974). Rogers, Smith and Coleman (1978) suggested that there is one way in which academic achievement influences self-concept and self-esteem and that is through the process of social comparison. If comparisons are favorable a person's self-esteem will be enhanced, but if they are unfavorable they may even be diminished.

Self-esteem is significantly associated with socioeconomic status, birth order and environmental privileges in most cultures. Rosenberg (1965) associated those possessing high self-esteem with an absence of gloominess, or other psychosomatic symptoms. Rather they were more likely to be selected for leadership roles, to be

more respected by others and to be self critical. Children with high self-esteem tended to have roots in the middle and upper classes of society, possessed supportive parents, and enjoyed closer relationships with their fathers and more secure family units. Single male children tended to have higher self-esteem. Rosenberg's self-esteem research surrounding birth order was supported by Schwab and Lungren (1978) who found first borns possess higher levels of self-esteem.

Rosenberg (1965) created a faith in others scale which he administered along with his self-esteem inventory. Those high in self-esteem exhibited greater faith in the trustworthiness of others, whereas low self-esteem subjects indulged in statements of doubt about people. Fromm (1939) has also suggested that those with high self-esteem showed more faith in others and more recently Garvie (1979) found internal locus of control, faith in others and self-esteem formed a principal factor which he labelled 'central belief' in his research. Though other significant relationships are summarized later it is necessary to look closer at the nature of the relationship that exists between self-esteem and anxiety.

E. Self-esteem and anxiety

Self-esteem and anxiety appear frequently in the research as associated variables but are rarely compared directly. In fact their relationship is very often implied

throughout the literature. One notable exception was Berkowitz (1977) who studied the effects of meditation on trait anxiety reduction and self-esteem. After the treatment period there was a significant difference in anxiety reduction but no effect on self-esteem which led the researcher to deny the existence of any relationship. However, most research results are consistent in both direction and magnitude of relationship. Negative correlations have been given support by Piers-Harris (1964), Rosenberg (1963; 1965), Coopersmith (1967), Horowitz (1962), Nasseri (1975), McCandless (1967), Conaway (1978), Wylie (1974) to mention but a few.

Two important issues are p[illegible]ent here. The first is whether even a minimal relationsh[illegible]exists between anxiety and self-esteem. In most studies there has been agreement in the consistently low magnitude of the correlations. Neither the partial correlation, nor the multiple correlation coefficients seem markedly to improve predictive ability. These low correlations suggest that either more variables should be added (e.g. internal and external locus of control or faith in others), or that self-esteem and anxiety should be broken down and measured accurately for greater prediction. However, there are instances when anxiety is beneficial. The key determinant, rather than the presence or absence of anxiety, would appear to be the individual's response to anxiety in particular situations.

It is known that the capacity for anxiety increases with age and with the increasing cognitive capacity of the organism (Katz and Zigler, 1967). Consequently, the effects of anxiety upon self-esteem might be more obvious during the later stages of child development. Houston, Olson and Botkin (1972) pointed out that the environment is generally dangerous and threatening to self-esteem. They indicated that over-anxious people usually expected bad effects to occur in situations involving threat to physical well being and in situations involving potential threat to self-esteem. Fear of failure is related to poor ego-identity (Bauer and Snyder, 1972) and those individuals who are more fearful of failure possess less stable self-concepts and levels of self-esteem (Hamm, 1977). If there is a conflict deep down in the self then anxiety will be symptomatic of that struggle. Anxiety is regarded as the result of a battle that exists between our strength as a self and the perceived threats to our self. The greater the self-strength and the self-esteem the less the person will be overcome by threat and anxiety. The literature revealed that highly anxious people tended to possess low levels of self-esteem, while high levels of self-esteem are attributed to those people who are less anxious in a variety of situations (Fiedler, Dodge, Jones and Hutchins, 1958).

The second issue of importance has not been very satisfactorily answered. Is self-esteem the cause of anxiety or vice versa? Coopersmith (1967) acknowledged the close

relationship between anxiety and self-esteem by suggesting that if threat releases anxiety then it is the person's self-esteem that is being threatened. Does low self-esteem cause high anxiety or high anxiety generate low self-esteem? The Neo-Freudians and principally Horney (1950) expressed the view that it is anxiety that sets into motion a complex chain of psychological events that tend to produce (among other consequences) self-hatred and self-contempt. According to this view, in an attempt to cope with excessive anxiety, persons might retreat from the real world and distract themselves with forms of unrealistic fantasizing which provide them with a false sense of confidence when dealing with a threatening situation. However, since they cannot escape reality they will eventually develop a contempt for self. The anxiety will generate the low self-esteem.

Rosenberg (1965) took the opposite stance, namely that poor self-esteem is the cause of anxiety. He identified certain factors associated with self-esteem which might be expected to cause anxiety states. The first factor he labelled instability of self-image and concluded that people who have inconsistent or unstable self pictures usually hold negative opinions of self, and the more uncertain they are, the more likely they are to experience the symptoms of anxiety. The second factor is the presenting self. People with low self-esteem tend to engage in deceit by presenting a false picture of what they really are to the rest of the world. The false front is really a coping mechanism directed

at overcoming feelings of unworthiness by convincing people otherwise. "Putting on an act" in a threatening situation can only prove to be an additional strain and there is always the fear of exposure or of making a vital mistake in front of others. Low self-esteem people in attempting to put up a false front generally end up exhibiting greater levels of anxiety. Similarly, they are much more likely to be sensitive to criticism, to be upset should others have a poor opinion of them, and even more likely to be disturbed if they fail at the task. Rosenberg terms this factor vulnerability. The more easily hurt the person is, the higher the anxiety states. Finally, subjects with low self-esteem can experience feelings of psychic isolation. Persons who suffer from feelings of self-contempt invariably deal with this problem in one of two ways. Either they retreat into the world of the imagination and indulge in wishful thinking and dream of self-worthiness, or they can put up a false front and be deceitful. Feelings of loneliness and isolation are certainly related to anxiety. Though none of these four factors completely account for the relationship between self-esteem and anxiety they may well contribute jointly. Rosenberg concluded

> It seems reasonable to assume that not only is low self-esteem a psychologically distressing state in itself, but it tends to set in motion a train of events which lead to a state at least equally distressing, viz, feelings of anxiety. (Rosenberg, 1965; 167).

Many psychologists concur with the view expressed by Rosenberg and feel that it is self-esteem that influences

anxiety states (Kothare, 1978; Hausman, 1978). If self-esteem levels can be raised or lowered an interesting question would be the effect of this upon anxiety.

It would appear from the literature that there is a negative relationship present between self-esteem and anxiety in global terms and that one might expect a similar or even stronger relationship to exist in specific terms if this could be accurately measured. This relationship might be further clarified if other important variables like locus of control and faith in others could be added in both the global and the specific sense. The answer to the question whether, with the manipulation of self-esteem through specially designed self-esteem management programs, there will be a corresponding effect on anxiety levels, can only rest in properly conducted experimental research carried out in a very controlled setting.

F. Self-esteem and the athlete

Another intriguing question is whether there are optimal levels of self-esteem required to ensure the best athletic performance. To date no research has attended to this issue. It has sometimes been presumed that athletes possess an abundance of self-esteem and should not experience any problems in this respect. The early research attempted to deal with issues like the effect of athletic participation on self-esteem, with analysis of the self-concept of a typical athlete versus non-athlete, and

with sex differences, whether these related to team or individual sports. Today it is apparent that some athletes do have poor self-esteem levels which need to be improved before performance can advance a stage further.

There is an abundance of literature that sights the importance of athletic participation to self-esteem (Rehberg, 1969; Snyder and Spreitzer, 1974; Yarworth, Gauthier and Bucknell, 1978; Vail, 1976). There are those researchers who believe that participation in sport of itself leads to a higher level of self-esteem (Zaichkowsky, Zaichkowsky and Martinek, 1975; Martinek, Cheffers and Zaichkowsky, 1978; Lewis, 1972; Collingwood, 1972; Leonardson, 1977; Sharp and Reilly, 1975). But there are also those who are non-supportive of this view (Maul and Thomas, 1975; Mauser and Reynolds, 1977; Finkral, 1973; Bruya, 1977; Ziv, Rimon and Doni, 1977; Leonardson and Gargiulo, 1978). Most of the evidence is inferential and consequently results are equivocal. Much of the earlier research stemmed from the work of Secord and Jourard (1953). These authors devised body and self-cathexis scales. Body cathexis refers to the degree of feeling of satisfaction or dissatisfaction with various parts or processes of the body. Self-cathexis on the other hand is the degree of satisfaction or dissatisfaction with various conceptual aspects of the self. Their research indicated that a positive correlation existed between the body and the self. Jourard and Remy (1957) found females were more concerned

with their body-image and males with their self-concept. Taken to its limits, body/self cathexis theory would postulate that a poor body physique leads to negative feelings about self.

Darden (1972) attempted to compare body image and self/body cathexis among different sports groups and discovered significant differences between athletes in team and individual sports but only when the combined scores were compared. Some comparative studies were carried out among athletes to establish the effects of age, race, and socio-economic status upon self-esteem (Clifton and Smith, 1963). Parental interest in sport was found to relate to measures of self-concept and self-esteem (Felker, 1968; Felker and Kay, 1971; and Kay, Felker and Varoz, 1972).

More recently, Sonstroem (1976) found that fitness and self-esteem are not significantly related. Earlier Neale, Sonstroem and Metz (1969) found no difference in self-esteem of highly fit adolescent boys and low-fit subjects. Padin, Lerner and Spiro (1981) believed that the adolescents' view of their bodies bore a continuous relationship to self-esteem. Several investigations have shown a positive relationship between somatic variables and social adjustment (Jones, 1965; Mussen and Jones, 1957). Individuals make judgements about their personal worth based on perceptions of their competencies or incompetencies in areas that are highly valued. This will lead to increases in levels of self-esteem, especially if there is high agreement between

areas that are valued by the individual and those valued by society. This is particularly true of sport. Coleman (1961) found that fifty percent of the American boys in his study wished to be remembered after high school for their athletic ability above anything else.

The second issue of the early research has been absorbed in the personality issue. Ibrahim and Morrison (1976) concluded that athletes in general, whether male or female, attending school or college, tended to be less than average in their concept of their physical self, moral-ethical self, personal self, family and social self. Equally, they tended to be average or slightly above average in their self-actualizing traits. Nideffer (Note 1) found that athletes with high measures of self-esteem were more capable of independent functioning, tended to become more aroused by criticism but generally maintained an external attentional focus which is usually a distinct asset in athletic situations. They were able to narrow their attention and fight back, and assuming they had reasonable attentional abilities and a normal level of anxiety, they improved their performance. Low level of self-esteem athletes often score high on measures of competitive anxiety and are likely to have problems when criticised. These athletes develop a narrow internal focus of attention which makes it extremely difficult to react to changing competitive situations. There is a hint in the literature that low-self esteem athletes succumb to expressions of

aggression more readily than athletes with high self-esteem (Rosenbaum and Stanners, 1961).

Finally, there is the question of sex differences in self-esteem among athletes. Cochran and Pike (1980) pointed out that females in western culture are taught that competition is unfeminine and that engaging in such activities may result in social rejection. This can negatively affect their self-image. For this reason female athletes might be expected to score lower than males.

The body image is an important aspect of self-image especially for female athletes and only in so far as athletic involvement in a particular sport enhances that feminine image, will a significant difference in self-esteem levels as a function of sex be likely. Female team athletes appear to possess significantly poorer self-esteem than male team athletes (Cochran, Aiken, Hartman and Young, 1977; Bhullar, 1974). However, there would appear to be two conflicting views evident in the literature. One view is that traditional role expectancies of "female" versus "athlete" are dissonant, possibly resulting in lower self-esteem (Snyder, Spreitzer, and Kivlin, 1975; Mackenzie, 1973; Stein and Bailey, 1976). The other view suggests that traditional sex roles are undergoing change and there are fewer negative sanctions today. Consequenlty, some sports have become very acceptable and findings regarding female athletic participation are more encouraging (Snyder and Kilvin, 1975; Helmreich and Spence, 1976; Kaplan and Bean,

1976).

In the research devoted to female athletes versus non-athletes, there is agreement that women who participate in sport are higher on measures of psychological well-being and body image, and possess a more positive self attitude. (Vincent, 1976; Snyder and Kivlin, 1975). No statistically significant relationship has been found between female athletic involvement and self-esteem which led Vail (1976) to conclude that athletic participation was only one of many factors influencing the self-esteem of females. It has been suggested that females differed from males is in the causal ascriptions employed in sport settings (McHugh, Duquin and Frieze, 1976). Males have been found to attribute their successes to their ability whereas females invariably underestimate their level of ability and overstress the contribution of luck to their performance. This kind of attribution can only play down the female self-esteem. It is clear that athletes will evaluate and reinforce themselves in the framework which is congruent with their own level of self-esteem (Weinmann, 1979). Although it has been suggested that there is no significant effect on self-esteem as a function of competition (Berger, 1976), recent research shows that winners demonstrate enhanced positive perceptions of their team's ability as well as more positive self-evaluations compared to losers (Bird and Brame, 1978). Success and failure are nonetheless important variables affecting the perception of threat to self in a competitive

situation (Scanlan, 1977). The consequences of failing in competitive situations appear to be more ego threatening for males than females. Also males engage in more self-therapy behavior following failure in competitive situations compared to females (Ames, 1978).

Finally, brief reference should be made to the self-esteem of competitive swimmers as an athletic group. Morris, Vaccaro and Clarke (1979) reported that competitive swimmers were significantly higher on measures of self-esteem (using the Rosenberg S.E. Inventory) than their age mates. They concluded that young swimmers may have more positive self-attitudes than their peers. Naturally it is difficult to say whether they are high in self-esteem before they enter competitive swimming, or they become that way because of the nature of the sport itself.

Despite the ever increasing literature surrounding self-esteem, few studies have examined its direct relationship with participation in competitive sport. One of the reasons for this omission rests in the fact that there are no measuring instruments that tap the level of specific athletic self-esteem. Self-esteem in the athletic context is probably an important factor in the control of performance and according to Rosenberg's definition, athletic self-esteem can be interpreted as the degree to which individuals respect their sporting skills, and consider themselves worthy in the face of opposition while recognizing their own strengths and weaknesses.

In summary, it would appear from the reasearch that it is possible to conjecture an athletic form of self-esteem, and that though differences as a consequence of age might be plausible, differences as a function of sex are likely the result of social expectancies as opposed to a question of sporting ability. If some athletes experience low levels of self-esteem on the one hand, or levels that are deemed too high so as to cause indulgence in wishful thinking, then if the necessary adjustments can be made they might be expected to grow in athletic stature.

G. Research problems related to self-esteem

The self-esteem literature is riddled with problems which are related to the fragmentation of current ideas and views, the indiscriminant use of weak measuring instruments and the alarming inferences and interpretations that have been made across a divergent body of clinical, experimental or educational literature. If there is a scarcity of empirical evidence examining specified aspects of the self-concept then there is certainly a lack of empirical consistency between studies. There is also a lack of systematic attempts to duplicate research while employing the same instrumentation. This omission has encouraged contradictory conclusions. In fact, the research has not contributed significantly to the understanding of self-esteem and its relationship to other selected variables (Bruya, 1977). The area is not lacking in test

instrumentation. The more popular instruments whether unidimensional or bidimensional have been provided by Rosenberg (1965) - an instrument commonly used because of its brevity, Coopersmith (1967), Piers-Harris (1964), Fitts (1965), Franks and Marolla (1974), Sears (1964), to mention but a few. Naturally there is a heavy reliance on self-report instruments.

Maybe it would be better to use several self-esteem measures (Shrauger, 1972). Some scales are not sensitive to measuring precisely what they are supposed to measure or are either too brief or too long. Watkins and Park (1972) offered an alternative procedure for measuring self-esteem. They attempted to determine the areas of an individual's self-concept that the individual considers to be important and then assigned weights of differing sizes to the subscales contributing to the total self-esteem score. In this way a more valid estimate of a person's self-concept and esteem might be obtained. Early tests failed to employ sensitive statistical techniques, to develop and rigorously test more appropriate instrumentation, and to construct and validate tests in accord with the principles of representative sampling. Few authors have attempted to deal with self-esteem systematically. Shrauger and Schoeneman (1963) have studied self-concept under the auspices of symbolic interactionism, and one important issue raised was the appropriate range of behavioral dimensions that should be sampled by any measure of self-esteem. Do persons have

sufficiently similar perceptions of their competence to make a general or global measure of self-esteem meaningful and applicable? Or is it more appropriate to consider separately their level of perceived competence in several more circumscribed areas? Wylie (1974) has discussed in detail the difficulties in the behavioral validation of self-concept scales and concluded that construct validity is the most suitable solution. Another difficulty emanates from the fact that there are so few worthwhile longitudinal researches. Many provocative findings go entirely undetected in the typical cross-sectional study whereas in the longitudinal approach some surprising and unexpected results may alter and modify current views.

Much of the research into self-esteem has not sufficiently emphasized the social nature of self-esteem. The failure to incorporate and weight the social factors within the self-evaluation framework may have contributed in part to the disappointing state of investigation into self-esteem. If the social environment changes there may well be a corresponding change in self-esteem. Several authors have reviewed the research problems (Gordon, 1969; Watkins, 1978; Dickstein, 1973; Wells and Maxwell, 1976; Crandal, 1973; Wylie, 1974; Crowne and Stevens, 1968). Yarworth, Gauthier and Bucknell (1978) summarize the major difficulties as follows

> Research in the area must rely on self-reports, the generality of the concept of self-acceptance, the use of socially desirable and acceptable answers by

> respondents, the absence of clear cut construct-level definitions, the unsupported assumption of equivalence of assessment procedures, the failure of construct tests in accord with principles of representative sampling, and the problem of division between those who view self-concept studies phenomenologically and those who view them behaviorally. (Yarworth, Gauthier and Bucknell, 1978:337)

In conclusion, it is obvious that the whole area of self-esteem is subjected to research limitations which do not allow for generalization of the results. Possibly, both the 'halo' and the 'Hawthorne' effects have greater impact on the findings than is credited. Coopersmith (1959) stated that self-esteem is an ephemeral subject that is difficult to cope with empirically. It is necessary to distinguish between the self-esteem individuals purport to have, that which they subjectively hold, that which they display or attempt to display, and the self-esteem behavior that is observed and reported by others.

H. Some practical issues for the coach

Three major issues of importance to the coach are raised following the literature review besides the question of the relationship between self-esteem and other variables as a function of sex, age and ability. Firstly, can self-esteem be changed or not? Secondly, are the measuring instruments accurate? Thirdly, do effective management programs exist that are capable of helping persons adjust their levels of self-esteem?

The first question relates to whether self-esteem is a relatively stable concept that remains with us across a

broad spectrum of situations or does it change? In one of the few longitudinal studies, Cushing (1978) found that most adolescents' self-esteem remained relatively stable over a five year period. He concluded that this issue, along with that of possible sex differences, and the affect of family mobility warranted considerably more investigation.

Hayden (1979) suggested that there are two views of self. A concordant view exists when a person's actual and preferred views are the same. A discordant view exists when there is a conflict between the actual and preferred views. Each individual tends to maintain a desired and current view of self and either shift or alternatively avoid a shift to the desired view of self depending on the relative implicative capacity of the desired or preferred view of self. Each person constructs a notion of self which serves to give meaning and order to personal experiences. How one behaves will be dependent to a large extent on how one both interprets and organizes the experiences one encounters. How these are interpreted will be determined by one's notion of self. Hayden then elaborated on his notion of self, concluding that people will maintain their present view of self and accompanying self-esteem until an alternative formulation is deemed more meaningful. According to this opinion, one's self-esteem is likely to change depending on the particular meaningfulness of the alternative view or the opportunities it afforded. Changes in notion of self can be bidirectional. Not everyone is capable of changing their

self-esteem, especially if change reduces meaning. Persons who really know what they want, may still be unable to change their behavior.

Allen (1973) stated that in order for change in self-esteem to occur there must be a change in experiencing. The coach or teacher must articulate the need for change in order for it to be effective. Athletes must see themselves as they really are and, whether they possess high or low self-esteem in the athletic context, they must understand what the effects of this surplus or deficiency of self-esteem means in terms of performance.

Other researchers have not found the self-concept to be a very stable characteristic (Maul and Thomas, 1975). Snodgrass (1977) referred to the three aspects of self as what one believes one is, what one believes one ought to be, and what one believes other people believe one to be. In these three areas there is likely to be serious resistance to any change. However, it would appear from the literature that self-esteem is a relatively stable construct that can undergo systematic change or modification if people are willing or have a greater insight into self.

The second issue relates to the question of accurate measurement. Are the measurements in vogue today informing the sports psychologist anything about athletic self-esteem? Perhaps some of the instruments are too complex or overly simple, or require further study into their construct validity (though content validity might be well supported).

As suggested earlier, it may be better to employ several measures of self-esteem that are both global and specific in nature. Could there be a discrepancy between global and athletic self-esteem? It is certainly not easy for coaches to detect levels of self-esteem among their athletes with any degree of accuracy and yet they need to be aware of them if the athletes wish to reach full potential.

The third issue refers to the existence and effectiveness of management programs specifically designed for the improvement of self-esteem. There is reference in the literature to such developmental training programs which are essentially educational in nature as opposed to clinical. They aim to reach out to all students rather than just to those experiencing mental crises of varying intensity. There are a number of relatively successful developmental programs - Self Enhancing Education (Randolph and Howe, 1966), Developing Understanding of Self and Others [DUSO] (Dinkmeyer, 1970), Magic Circle (Bessell and Palomares, 1970), Focus (Anderson and Henner, 1972), and Innerchange (Ball, 1977) - that attempt varied activities aimed to positively advance a child's self perceptions. Further programs are provided by McMillan (1978), Emmons (1978), and Parrott and Hewitt (1978). Unfortunately, meaningful research surrounding these programs is restricted and there are only a limited number of studies that attest to their true value and effectiveness.

Swindlehurst (1978) used the DUSO program effectively and her results clearly indicated significant changes in the internal and external manifestations of self-esteem. Tiernan (1977) also found improvement in self-esteem using the same program. However, some of the conclusions drawn from the recent literature might be considered a little premature, since a number of studies have been conducted where no significant differences were found (Weishaupt, 1977).

The literature does suggest ways to manipulate self-esteem. Parrott and Hewitt (1978) recommended a realistic program of goal-setting, while self-congratulatory statements or self-reinforcement can positively help low self-esteem subjects (Masters, 1972; Ames, 1978; Ralph, 1973; Felker, 1974; Ames and Felker, 1979). McCroskey, Daly, Richmond and Falcoine (1977) have demonstrated that people with low self-esteem have difficulty communicating and therefore an intensive program of meaningful interviews may help people talk about themselves and overcome personal inadequacies. Interactional influences may have a powerful bearing on self-evaluation and so devising a program whereby other significant people afford good, positive feedback may well help raise levels of self-esteem. General programs have been devised to encourage low self-esteem subjects to share in decision making as a means of improving self-concept (Ball, 1977; Martinek, Zaichkowksy and Cheffers, 1977). Although it may be a matter of simple concern for a coach to devise a specific program to improve athletic self-esteem,

from the evidence available in the literature, Swindlehurst (1978) has expressed some cautions. There is need to evaluate self-concept changes with an instrument specifically designed to assess personality dimensions. Neither is it clear whether the external or behavioral manifestations of change are strictly due to exposure to the program or not. She concluded that it should be determined whether both self-perceptions and behavioral factors are affected by exposure to a structured self-concept development program. Finally, concern was expressed for the precise role or influence of the teacher (or the coach) in such programs. There is strong evidence to support the teacher's influence on the children's self-perceptions (Rosenthal, 1973; Fleming and Anttonen, 1971). Perhaps counsellor assistance is a necessary condition in initiating and monitoring the evidenced results in successful studies. Most self-esteem enhancement programs are in their infancy and need to be fortified with further research. Most studies too have a major shortcoming in respect to the brevity of their treatment periods which seem to vary between six and twelve sessions. The results might be vastly different if the treatment was applied for a longer period of time.

I. Summary of the research findings

It is possible to extrapolate from the literature and categorize those findings that relate to high and low self-esteem. Characteristics associated with high

self-esteem can be summarized as follows:

1. Individuals with high self-esteem tend to cope more effectively with environmental demands and are likely to be less anxious in competitive or stressful situations (Coopersmith, 1967; Rosenberg, 1965).
2. They usually protect themselves from negative self-evaluation (Combs & Snygg, 1953) and value themselves as competent, creative and consistent in achievement (Cole, 1974; Brooks and Emmert, 1976).
3. Adolescents with high self-esteem are more trusting of others (Rosenberg, 1965), enjoy good parental relationships and tend to invite leadership roles.
4. Personally, they are less gloomy or susceptible to disappointment, display fewer psychosomatic symptoms of anxiety, are more consistent in their behavior, and tend to utilize both positive and negative experiences to enhance their psychological growth (Vargas, 1968).
5. They are apt to freely and effectively express their views, to accept personal criticism realistically, and to move more directly toward personal goals (Mossman and Ziller, 1968; Brockner, 1979).
6. They will indulge in self-congratulatory statements following a successful performance (Ames, 1978) and usually attribute success to an internal stable factor such as their ability (Layden and Ickes, 1978) or their control of the situation (Feather, 1969).
7. They are particularly good at reading situations and

cues that will enhance performance (Easterbrook, 1959; Nideffer, Note 1). However, both high and low self-esteem subjects are liable to limit their cognitive input to information that is congruent with self-image (Silverman, 1964).

8. It has been observed that those persons with high self-esteem are more readily influenced by optimistic, gratifying, potentially self-enhancing communication than by pessimistic or threatening dialogue (Leventhal and Perloe, 1969).
9. Following failure, they are unlikely to try harder on a task unless another poor performance would pose a further threat to their self-esteem. (Frankel and Snyder, 1978).
10. Children with high self-esteem are proud of their accomplishments, act independently, assume responsibility, tolerate frustration, approach new challenges with enthusiasm, feel capable of influencing others and exhibit a broad range of emotions and feelings (Clemes and Bean, 1981).

The major findings regarding low self-esteem subjects can be summarized as follows:

1. Low self-esteem subjects are less capable of dealing with environmental demands and are prone to increased anxiety states in threatening or competitive situations (Coopersmith, 1967; Rosenberg, 1965).

2. They tend to withdraw from the company of others, experience feelings of insecurity and distress and be less trusting of others (Coopersmith, 1959).
3. They fail to protect themselves from negative evaluation and tend to judge an objective failure as a very poor performance and a success as a very insignificant achievement (Cohen, 1957).
4. Personally, they are usually shy, gloomy, insecure, easily embarrassed, eager to be approved of, appear to be more field dependent and are easily influenced by social pressures (Marcia, 1966). They exhibit a rather narrow range of emotions (Battle, 1980).
5. They often experience a conflict between the "ideal" and the "real" self, are very sensitive to the reactions of others and have been known to indulge in inconsistent and even delinquent behaviors (Fryrear, 1975; Stump, 1979).
6. They invariably express feelings of inadequacy, unworthiness, helplessness and inferiority, and even aggressiveness (Clemes and Bean, 1981).
7. They are likely to resist pressures to conform and generally maintain their negative self-evaluation by attributing failure experiences to their own personal inadequacies (Fitch, 1970).
8. They also experience difficulties in oral communication (McCroskey, Daly, Richmond and Falcoine 1977). The tend to indulge in inconsistent and even delinquent behavior

(Fryrear, 1975).

9. They can only assimilate information relating to themselves which is consistent with their general self-concept (Ames, 1978).
10. Late maturers are often found to be low in self-esteem and may choose to indulge in attention seeking behaviors. (Jones, 1965).

J. Conclusion

In summary, high self-esteem individuals tend to be both active and assertive in facing up to their environmental demands and manifest a great self confidence while protecting themselves well from any harmful exposure. They display leadership qualities and enjoy both popularity and respect among their peers. Another advantage for people with high self-esteem is their ability to suspend judgement concerning themselves during any information processing phase. This allows them to persevere better with the task (Witkin, Dyk, Faterson, Goodenough and Karp, 1962). Low self-esteem individuals are usually more passive in their adaptation to environmental pressures and betray feelings of inferiority and depression. They are inclined to react strongly to criticism and are more likely to follow than assume leadership roles. People differing in self-esteem also differ in their causal interpretations of positive achievement outcomes and also employ different self-reinforcing mechanisms for evaluating their behavior.

Signall and Gould (1977) believed that low self-esteem people try to succeed only when they believe that they are able to succeed. However, coaches will eventually find themselves in the role of evaluator and generally they will want to elicit strong efforts from those athletes to be evaluated. The literature also suggests that the manner in which the evaluators present themselves will have consequences on the amount of effort expended. Not only is there a great need for coaches to assess their athlete's self-estimate, but Signall and Gould (1977) also stated that if the person has high self-esteem then coaches should encourage effort expenditure by portraying themselves as difficult to satisfy. If the person has low self-esteem then coaches should endeavour to present themselves as relatively undemanding. Jones (1973) cautioned that there is always the possibility of misinterpretation and low self-esteem individuals might regard the coaches compliments as inauthentic and so mistrust the evaluator. Motivation is important too, for the low self-esteem subject must be motivated to enhance self-esteem.

Coaches should have an accurate knowledge of the self-esteem levels of their athletes and know the appropriate line of action to take, not only to ensure the best performance, but to effectively adopt the best coaching behaviors. There are suggestions in the literature of ways in which self-esteem might be enhanced - goalsetting, self-reinforcement, communication and encouragement. Adler

(1927) distinguished between praise and encouragement. Praise is seen as containing negative underlying messages whereas encouragement has positive messages. Kotkin (1979) emphasized the importance of encouragement and described it as a process that leads to emotional security. The lower the childrens' initial self-esteem the more they increased their perceived esteem after being given encouragement. Similarly, trust in the affective area can easily produce a change in self-esteem (Cheney, 1977). Knowledge and appreciation of self-esteem may enable coaches to develop deeper understandings and insights into the behavior and the development of their athletes. Similarily, control of self-esteem may help those athletes, who experience insufficient levels, to reach their true potential. Only meaningful experimental research conducted in a clinical or controlled setting with athletes from different sports, of different age, sex and ability will provide answers to some of the interesting questions now emerging from the literature.

Notes:

Note 1. Nideffer, R.M. Identifying and developing optimal levels of arousal in sport. Paper to be published. F.I.S. Publishers.

III. METHODS AND PROCEDURES

A. Introduction

In this study the self-esteem of competitive swimmers was measured, both in the global and the specific sense, utilizing several different instruments. The relationship of self-esteem to competitive anxiety, locus of control and faith in others was also examined. The four major hypotheses outlined in chapter 1 were tested for significance at the .05 level. Table 1 shows a breakdown of the subjects according to sex, ability and age.

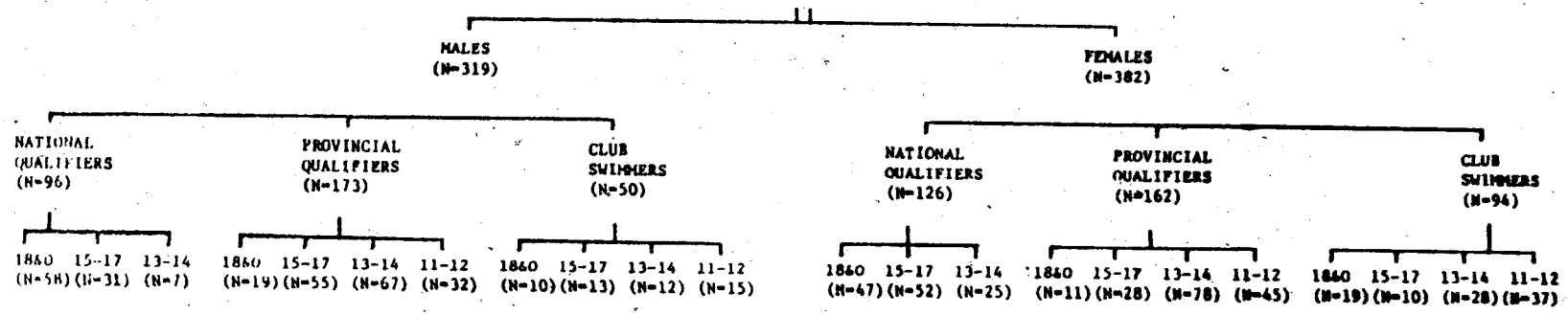
B. The subjects

This study was essentially concerned with competitive swimming, and so swimmers from across Canada, who were members of the major competitive clubs functioning under the direction of a professional coach, were all considered to be potential subjects. However, subjects were limited to winter clubs or all year round clubs only.

Consequently, 705 male and female swimmers participated, and ages were limited to the recognized competitive age categories of 11-12 years, 13-14 years, 15-17 years and 18 years and over. The reasons for this age restriction rested in the very nature of the test battery itself which demanded a level of comprehension and concentration that may have been difficult for the younger swimmer (10 years and under) to maintain; in the competitive

Table 1.

SUMMARY INFORMATION ON THE SAMPLE OF SUBJECTS MEASURED
WINTER CLUB
COMPETITIVE SWIMMERS
(N=701)



DEPENDENT VARIABLES		EXTREME SCORES	MEASURE
1. Locus of Control (GLC)		0—23 External — Internal	Rotter (1966)
2. Global Self-Esteem (GSE)		0—40 Low — High	Rosenberg (1965)
3. Faith in Others (FIO)		0—5 Low — High	Rosenberg (1956)
4. Competitive Anxiety (SCAT)		10—30 Low — High	Martens (1977)
5. Faith in Coach (FIC)		0—5 Low — High	Adaptation of Rosenberg (1956)
6. Specific Self-Esteem (SSE)		0—40 Low — High	Adaptation of Rosenberg (1965)
7. Specific Locus of Control (SLC)		0—23 External — Internal	Adaptation of Rotter (1966)
8. Self as Person	I. Evaluation II. Potency III. Activity		Semantic Differential (Osgood, Suci & Tannenbaum, 1957)
9. Self as Swimmer	I. Evaluation II. Potency III. Activity		Semantic Differential

anxiety research findings which intimate that younger swimmers find it difficult to discriminate their true feelings of competitive anxiety with any degree of accuracy (Hogg, 1978); and in the practical sense, since so many of the younger club swimmers are under the direction of the assistant coach rather than the head coach.

This study was not limited to the elite athlete but directed at all levels of ability. For the purposes of convenience, three categories of ability potential were recognized. The highest category of ability consisted of national team members and national championship qualifiers, all of whom were in the top 10% of competitors in Canada, and had met the performance standards published by the Canadian Amateur Swimming Association for the season 1980-81. The second level comprised those swimmers who were either C.I.A.U. or Division 11 national qualifiers. They had reached a recognized standard time slightly below that of the first category. The third level were made up of club members who had reached a provincially or regionally established time standard only.

C. The instruments

A test battery was designed to measure all the variables involved in this study. Since self-esteem in general, and more particularly the self-esteem of a competitive swimming population is at the core of this investigation, several self-esteem measures were utilized to

tease out the global and specific elements of the concept. Similarly, it was necessary to accurately measure both locus of control and faith in others, which together with self-esteem, form a central belief. For the sake of conformity it was considered more appropriate to measure these two variables both in the global and the specific sense and thus provide a general and specific measure of locus of control and faith in others. Finally, a well proven and sensitive instrument was employed to assess the level of competitive A-trait of each subject.

The test battery itself (Appendix 1) was composed of nine questionnaires laid out in a certain order to minimize any bias. Questionnaire #1 measured general locus of control; #2 measured global self-esteem; #3 measured faith in others in general; #4 assessed the level of sports specific competitive anxiety; #5 measured the degree of faith in the swimming coach; #6 measured the specific self-esteem of competitive swimmers; #7 measured the specific locus of control as related to competitive swimming; and finally, #8 and #9 are additional measures that assessed general self-esteem (how I see myself as a person) and specific self-esteem (or how I see myself as a competitive swimmer). The test battery was a pen and paper test that was understandable, geared to the adolescent or young adult athlete, and not too time consuming to complete. It consisted of select and well established test items, some that had been modified so that they could be specifically

directed to the swimming population, and an acceptable measure of self-esteem which employed the semantic differential approach.

The test was first administered as a pilot to a group of competitive swimmers of differing ages and ability in order to establish the length of time it would take to complete the test (the average time was twenty eight minutes); to identify any instructional difficulties; and to ensure comprehension of all the test items. Following the pilot study, certain modifications and adjustments were made to the test battery for the sake of clarity.

Measures of self-esteem

There are many established measures of self-esteem. However, Rosenberg's (1965) measure of global self-esteem has been used extensively in the research over the years, simply because it is brief, geared to the mid and late adolescent, direct and effective in content and relatively quick to complete - the test takes approximately two minutes. For these reasons, it was used both globally (#2) and specifically (#6) in this study. The Rosenberg self-worth scale consists of ten simple questions. It has a reproducibility of .93 and an item scalability of .73. Scoring methods yield extremes of 40 (high self-esteem) and 10 (low self-esteem). The scale was easily adjusted to allow it to measure the specific self-esteem of athletes and so produce a measure of competitive swimming self-esteem.

Questionnaires #8 and #9 also measured self-esteem. Here the semantic differential method (Osgood and Suci, 1955) was used as a means of determining both general and athletic self-esteem. The semantic differential is a scale that utilises the direct ratings of concepts and in this study it was necessary to measure the self-esteem of me as a person (global), and the self-esteem of me as a competitive swimmer (specific). The semantic differential is a proven method of measuring the true meaning of concepts and has been used in several studies of a similar nature.

Factor analytic studies of semantic differential scales lead to the conclusion that there are three major factors of meaning involved. The three prominent factors are evaluation, potency and activity. Since real things are largely described by means of adjectives, to understand both global and specific self-esteem it was necessary to devise a scale with bipolar adjectives on the extremes that include these three factors. Selecting the most appropriate adjectives that best describe the concept according to the rotated factor loadings as outlined by Osgood, Suci and Tannenbaum (1957) is a relatively easy process. The factor of evaluation (Factor 1) is best described in adjective pairs like good-bad (.88), ugly-beautiful (.86), and worthless-valuable (.79). The factor of potency (Factor 11) is best described by the bipolars weak-strong (.62), small-large (.62) and bravely-cowardly (.44). The factor of activity (Factor 111) is well expressed with the adjective

extremes fast-slow (.70), active-passive (.56) and relaxed-tense (.37). The above scales were selected primarily because the adjectives best suit the measure of "me", both as a person and as a competitive swimmer.

In this study three scales for each factor were used to determine the factor scores for both the global and the specific self-esteem and these were randomly assigned and ordered for the test procedure. Three scores (evaluative, potency and activity variables) were available for both the global and the specific self-esteem of each subject. The conventional method of scoring was used on the scale 1-7, where 1 and 7 are applicable when the subject feels that the adjective and the concept (self-esteem) are very closely related, where 2, 3, 5, and 6 express a slight relationship, and where 4 is representative of the feelings that the relationship between concept and adjective is irrelevant.

Measures of competitive anxiety

Martens (1977) has established a sports specific test available in both adult and child form, and which reliably measures competitive trait anxiety. The Sport Competition Anxiety Test (SCAT) is composed of fifteen items designed to ascertain how each subject generally feels about competing in sport. Of the fifteen questions, five are spurious statements planted to offset the chance of biased responses. There are three possible responses to each item (A) hardly ever, (B) sometimes and (C) often. The range of scores rests between the extremes of 30 (very high competitive A-trait)

and 10 (very low competitive A-trait). Martens (1977) presented substantial evidence in support of the construct validity of SCAT both from the results of studies conducted experimentally in the laboratory and from those carried out in the field. Similarly, the predictive value of SCAT in terms of A-state has been well documented (Martens and Gill, 1976; Martens and Simon, 1976). Martens concluded

> With the approved measurement of A-states (competitive short form of SAI), SCAT was able to predict to a substantial degree the A-state levels of persons anticipating competition. Using hypothetical competitive situations, SCAT increased its ability to predict A-states as the threat in the competitive situation increased. (Martens, 1977: 88).

SCAT was selected as the measure of competitive anxiety in this study because it is simple to administer, takes less than five minutes to complete, and is sports specific. Though some authorities feel that the usefulness of SCAT as a diagnostic instrument requires verification, it is nonetheless used regularly in the current competitive anxiety research. It is generally accepted that the assessment of anxiety levels through self-report will indicate more about a competitor's general state of arousal than any other single or composite index of physiological measures.

Measures of locus of control

Rotter (1966) formulated a self-administered scale which takes approximately twelve to fifteen minutes to complete, consisting of twenty three pairs of questions and six spurious or non scoring questions with a forced choice

format. The scale measures internal and external locus of control and the particular method of scoring that was employed here indicated that those with a high score (up to a maximum of 23) have the greatest internality, while those with a low score (12 or less) possess the highest levels of externality. Rotter's scale is very reliable, has been used extensively in current research and is possible to adapt for sports specific use. Questionnaire #1 measured general locus of control and #7 was adapted to a competitive swimming specific situation by modifications of the forces.

Measures of faith in others

Rosenberg (1965) also provided a scale to measure a subject's faith or confidence in the trustworthiness and helpfulness of other people. It is a very short questionnaire (#3), which takes no more than two minutes to complete, and one with proven reliability and validity. The reported reproducibility of this test is .90 and the item scalability is .68. The instrument consists of five short items yielding a range of scores from 5 (high faith in others) to 0 (no faith in others). This test was also modified to specifically measure the swimmer's degree of trustworthiness in the coach (#5).

D. The procedures

The Canadian Amateur Swimming Association recently formed a Research and Development Committee whose function is the physiological and psychological measurement of

competitive swimmers with a view to identifying and advising talent in preparation for the 1984 Olympic Games. This committee is composed of researchers and coaches who have both an academic and a practical interest in the preparation of the elite athlete.

In the first instance, the approval of the Governing Body of the sport (CASA) was granted in support of this research and the test battery was incorporated into the current program of tests being conducted at the national and regional centres across Canada. In the second instance, the support and the cooperation of the club coaches was solicited, the purpose and nature of the research explained, and the meaningful feedback of results assured to both coaches and swimmers.

For the sake of conformity the tests were conducted in the four week period immediately following the CASA Short Course National Championships (April) when the first part of the competitive season was over and there were relatively fewer pressures on the swimmer.

The research package was made up of the questionnaire booklet (Appendix 1) containing all nine instruments preceeded by the appropriate instructions for each test, the Profile Form (Appendix 2) specifically designed to obtain select demographic information about individual swimmers and their ability level, and a Response Sheet (Appendix 3) drawn up to facilitate both the collection and the analysis of data. In most cases the researcher personally supervised the

test procedures, but where this was not possible, clear instructions to the coach (Appendix 4) were issued along with the research package and each coach was contacted to ascertain that all test conditions could be met.

For the test battery to be completed to the best advantage, it was important to conduct the test in a quiet and relatively comfortable area where the swimmers could sit and write at a table without interference or distraction. Swimmers were measured in groups involving not more than twenty five subjects at a time. The researcher or the coach read out the instructions as they appeared on the front page of the questionnaire booklet and encouraged each subject to read everything very carefully, to mark the response sheet in answer to every question using a soft pencil, to give thought to each question and to be serious and honest in their responses. Though swimmers were not to spend too long on each questionnaire, adequate time was to be given to the occasion (approximately sixty minutes) so that subjects were not pressured into answering with undue haste. Before commencing the test battery, the Profile Form was filled out as accurately as possible. However, it was possible to double check performance times, sex and age against the National Top Age Group Rankings List (TAG) which is published each month in Swim Magazine. The materials once completed were returned to the researcher for analysis.

E. The statistical analyses

Descriptive statistics on the various variables (global self-esteem, specific self-esteem, faith in others, faith in coach, general locus of control. specific locus of control, competitive trait anxiety, and the two self-esteem measures deduced from the semantic differential in both global and specific terms) provided the basis for some exploratory comment. The descriptive examination involved both distributions (including means and variances) and correlations. The relationships with sex, age and level of ability were examined descriptively following the more formal analyses. Analyses of variance were performed on each of the variables as a means of establishing any differences as function of sex, age and level of ability. The thirteen variables were factored together with sex, age and ability to explore their joint relationships.

F. The limitations

This research was directed at finding out about the self-esteem of competitive swimmers as a function of sex, age and level of ability. Self-esteem was examined in conjunction with other variables like locus of control, faith in others and competitive anxiety. Naturally, it will be very difficult to generalize the results to athletes and sports outside of competitive swimming.

The measuring instruments themselves contained a mixture of established and recognized tests, test

adaptations, and new instruments. The validity of the information obtained depended on the assumptions contained within the various measuring instruments as well as the individual interpretation, degree of thoughtfulness and the honesty of each subject responding. Similarly, where the research is conducted by coaches, their fullest cooperation in terms of carrying out the test instructions to the letter must be presumed. Nideffer (see Note 1) has cautioned about the limitations of this kind of study

> Psychological tests, especially self-report measures, are subject to a great many sources of measurement error. A person's evaluations on the various scales can change as a function of mood, attitude, reason for taking the test, response style, feelings toward the testor, and/or the test situation, level of anxiety etc.. All these sources of error can dramatically reduce the accuracy and the predictive validity of between subject comparisons. (Nideffer, 1980: see Note 1).

Finally, since this study was essentially correlational in nature, any discussion of directional causality among the different variables will prove to be purely speculative.

Notes:

Note 1.

Nideffer, R.M. Identifying and developing optimal levels of arousal in sport. Paper to be published, F.I.S. Publishers.

IV. RESULTS AND DISCUSSIONS

A. Introduction

It was suggested in the hypotheses that a significant relationship between global and specific self-esteem and competitive anxiety was expected (Hypothesis #1), and that an identical relationship existed between global and specific self-esteem and the variables general and specific locus of control (Hypothesis #2), and similarly with the variables faith in others and faith in coach (Hypothesis #3). Finally, differences as a function of sex, age or ability were expected in the variables general and specific locus of control, general and specific self-esteem, trustworthiness in others and faith in coach, and competitive trait anxiety (Hypothesis #4).

The descriptive statistics for the thirteen dependent variables were calculated for the male winter club competitive swimmers (N = 319) according to the three ability groups of National, Provincial and Club levels and further categorized into the four age groups. These statistics are tabulated in Appendix 5 and then presented according to the four recognized age groups (18 years and over; 15 - 17 years; 13 - 14 years; 11 - 12 years) in Appendix 6. It should be noted here that since males achieved national level of performance at a later age than females, it was understandable that there were no males at the National level of ability in the 11 - 12 years age

category. This fact required some consideration in the later analyses. Similar tabulations for the female sample (N = 382) are illustrated in Appendices 7 and 8.

Confidence intervals (.95) around the means of each of the dependent variables were calculated to determine whether there were any obvious differences as a funtion of sex, age and ability. This information has been tabulated and appears in Appendix 9. Upon closer examination of the confidence intervals around the means of each of the variables there are differences present as a function of sex. However, it is difficult to determine from the descriptive statistics which differences are significant as a function of age and ability levels.

Graphs illustrating the mean scores for each of the dependent variables according to sex, age and ability were plotted as an aid to investigating the hypotheses. Again, in the case of certain variables, these graphs do indicate the presence of sex differences and it is also possible to note some differences in the variables more as a consequence of ability than of age. However, only a more complicated form of analysis is able to reveal the exact significance of these differences.

The Pearson correlation coefficients between all pairs of variables were calculated. Where r was equal to or greater than .07 the correlations were statistically significant at the .05 level. However, only those correlations greater than .20 will be regarded as

psychologically important for the purposes of this study. The precise significance of these relationships and those yielded by factor analysis are considered in detail later in the chapter.

B. Univariate analysis

The first step in the analysis was to examine the data for any differences evident in each of the dependent variables as a function of sex, age and level of ability. In order to determine this, two types of ANOVA were performed. In the first place, a three way analysis of variance (SEX x AGE x ABILITY) limited to three age groups (18 years and over, 15 - 17 years, 13 - 14 years) and at three levels of ability (National, Provincial and Club) was performed on each of the dependent variables. This analysis is referred to as ANOVA 1. In the second place, a three way analysis of variance (SEX x AGE x ABILITY) was performed on all four age groups (18 years and over, 15 - 17 years, 13 - 14 years and 11 - 12 years) for each of the dependent variables but only at the two lower levels of ability (Provincial and Club). This analysis is referred to as ANOVA 2. The reason for this statistical treatment of the data arose from the fact that there were only two female subjects and no male subjects at the National ability level among the 11 - 12 years age category.

Following the univariate analysis, post hoc tests of significance were performed to determine the precise nature

of any differences. The post hoc tests on the significant main effects were done using the one way procedure while the simple effects tests on significant interactions were carried out using the MANOVA procedure. The graphs indicating the plotted means of each of the variables according to sex, age and level of ability were used by way of illustration, along with any obvious trends that could be inferred from the descriptive statistics. In the analyses that follow, both significant effects and certain non significant effects are discussed. The reason for departing from conventional practice of only discussing significant differences lies with the peculiar nature of the athletes studied. Much of the sample, particularly at the National level consists of almost all of the population at that level and therefore the results are interpretable without test. However, even these populations can be thought of as representing competitive swimmers in general, and for that reason statistical tests are significant.

Locus of Control

In the case of general locus of control, the results of ANOVA 1 revealed significant sex differences in the main effects indicating males possess higher levels of internality than females ($F(1,552)=5.79$, $p<.01$). The results of ANOVA 2 showed a significant age difference in the main effects where the younger age groups tend more to externality than the older swimmers in both the male and the female populations. Figure 1 shows the plotted means for the

variable general locus of control. From the graph it is evident that males at all three levels of ability appear to have a more internal locus of control compared to females with the exception of the National level swimmer at the 13 - 14 years age category. However, the difference in the sample numbers (males: N = 7; females: N = 25) may have something to do with this discrepancy. It is interesting to note (with the exception of the 18 years and over male Provincial level of ability swimmer) that there is a marked decrease in both the male and female scores indicating higher levels of externality from the 15 - 17 years age category to the 18 years and over age category for this variable. This observation is best explained by the fact that very often large rewards reduce intrinsic interest. Perhaps highly successful athletes tend to be more external simply because of the rewards that society customarily places on achievement.

Table 2 shows the presence of a two way (SEX x AGE) interaction for ANOVA 1 in the variable specific locus of control. Males are significantly more internal than females. Table 3 illustrates the results of the tests of significance of the simple main effects at the 0.05 level which suggest that this significance is only true for the 18 years and over age group ($F(1,552)=14.50$, $p<.001$) where males were found to be more internal than females. However, it must be noted that though males appear to be significantly more internal than females, this comparison is only relative

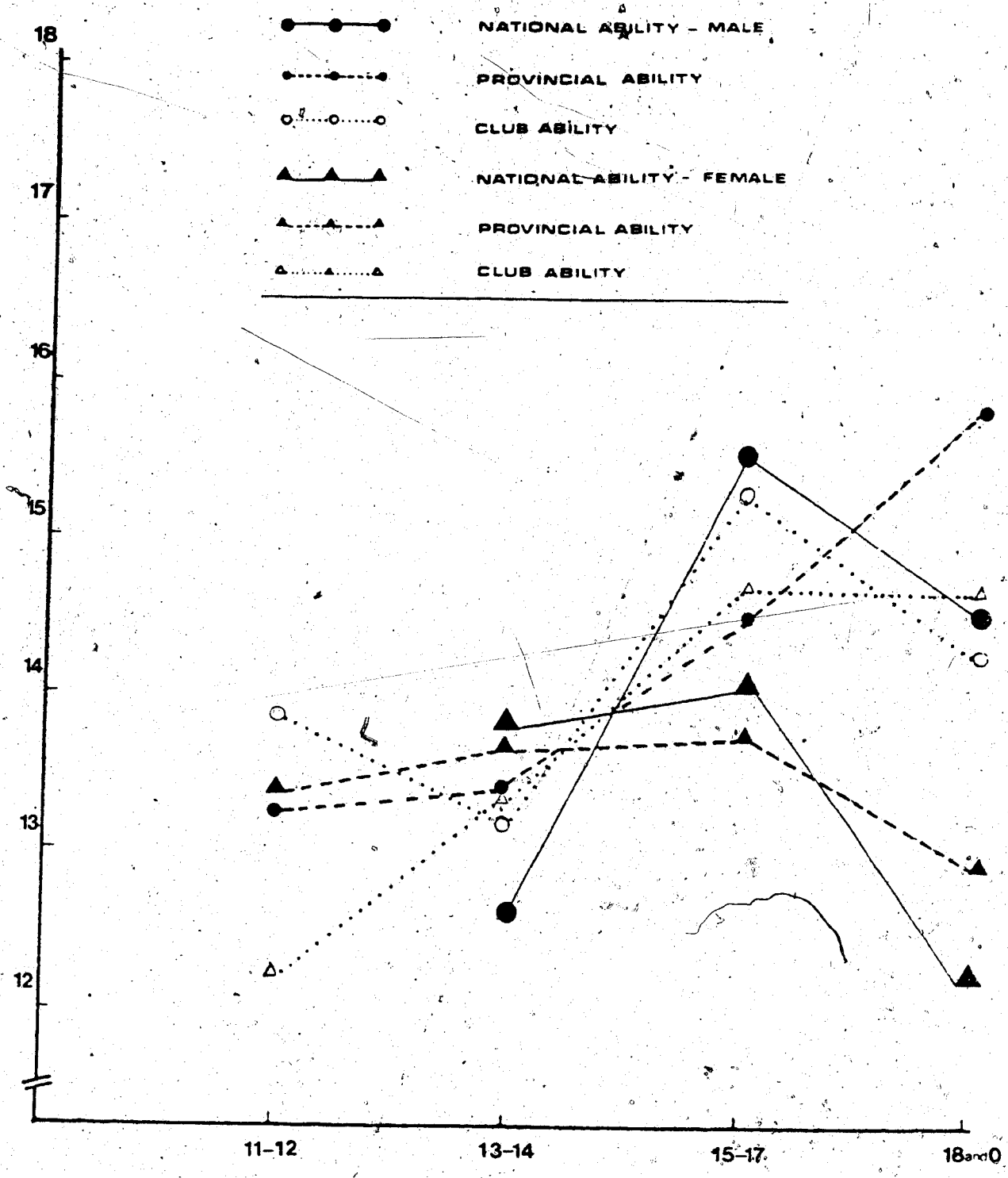


Figure 1 Graph Illustrating the Means for the Variable General Locus of Control According to Levels of Ability, Sex and Age.

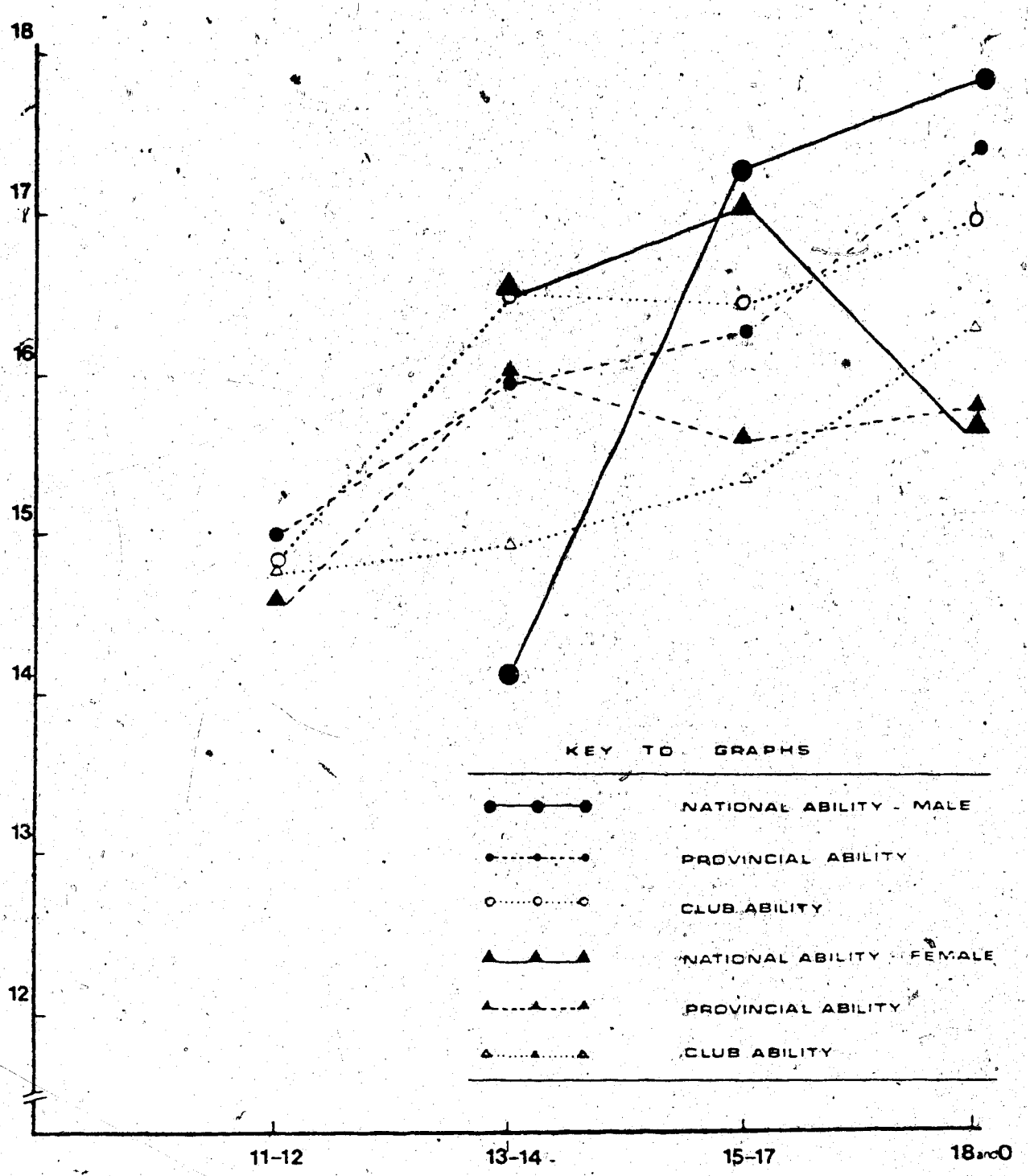


Figure ii Graph Illustrating the Means for the Variable Specific Locus of Control According to Levels of Ability, Sex and Age.

Table 2. Three Way Analysis of Variance for the Specific Locus of Control Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	69.13	7.28*
ABILITY	2	24.86	2.62
AGE	2	9.18	0.97
2-WAY INTERACTIONS			
SEX ABILITY	2	2.55	0.27
SEX AGE	2	32.52	3.42*
ABILITY AGE	4	13.83	1.46
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	14.53	1.53
RESIDUAL	552	9.50	
TOTAL	569	9.86	

* Significant at 0.05 level

Table 3. Tests of Significance for the Variable Specific Locus of Control using the Sequential Sum of Squares.

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	9.50	
SEX within AGE (1)	1	137.76	14.50*
SEX within AGE (2)	1	5.64	0.59
SEX within AGE (3)	1	3.08	0.32

* Significant at 0.05 level.

(Where AGE (1) = 18 years and over;
AGE (2) = 15 - 17 years;
AGE (3) = 13 - 14 years).

since both male and female lean toward the internality end of the scale. In Figure ii the means are plotted for specific locus control. The graph illustrates the notion that males are more internal than females across all age categories (with the exception of the 13 - 14 years age group) and at three levels of ability. There is also a tendency for swimmers to be more internal or feel more responsible for performance outcomes as they get older (with the exception of the female national level of ability swimmer). This is in contrast to the tendency evident in the variable general locus of control especially at the National level of ability. The drop back to externality evident among National class 18 years and over female swimmers, might be tentatively explained by the fact that most females have reached their physiological peak by this time and the continuance of their involvement in competitive swimming may be due largely to the external rewards and recognition that surround this level of participation.

In summary, sex differences are evident in both these variables with the males scoring higher on internality than the females. In the case of specific locus of control this sex difference was only significant for the 18 years and over age category. These findings tend to support Hypothesis #4.

Self-esteem

The results of ANOVA 1 are illustrated in Table 4 and point to the presence of both sex and ability differences

for global self-esteem with males obtaining higher scores than females. These scores increased for both males and females at higher ability levels. This sex difference ($F(1,463)=19.27$, $p<.001$) was also in evidence following ANOVA 2 (Table 5). Figure iii shows the plotted means for global self-esteem. Again, whether this apparent significant sex difference is a meaningful one has to be questioned since both males and females appear to have relatively high self-esteem scores. With the exception of the 13 - 14 years National ability level of swimmer (where there are fewer males than females) males do appear to have higher levels of global self-esteem than females and this seems to be true for all age groups and levels of ability. It is also interesting to observe that while males and females appear to experience increased levels of global self-esteem, especially in the 18 years and over age category, the reverse seems to be true in the case of specific self-esteem.

Table 6 shows the findings of ANOVA 1. Significant differences between sexes ($F(1,552)=19.13$, $p<.001$), ability ($F(2,552)=41.61$, $p<.001$), and among age groups ($F(2,552)=8.81$, $P<.001$) were found for the specific self-esteem results. Males are higher in specific self-esteem than females and this is true for each age group and across all three levels of ability. Specific self-esteem increases as levels of ability improve both for the male and the female population. The results of ANOVA 2 (Table 7)

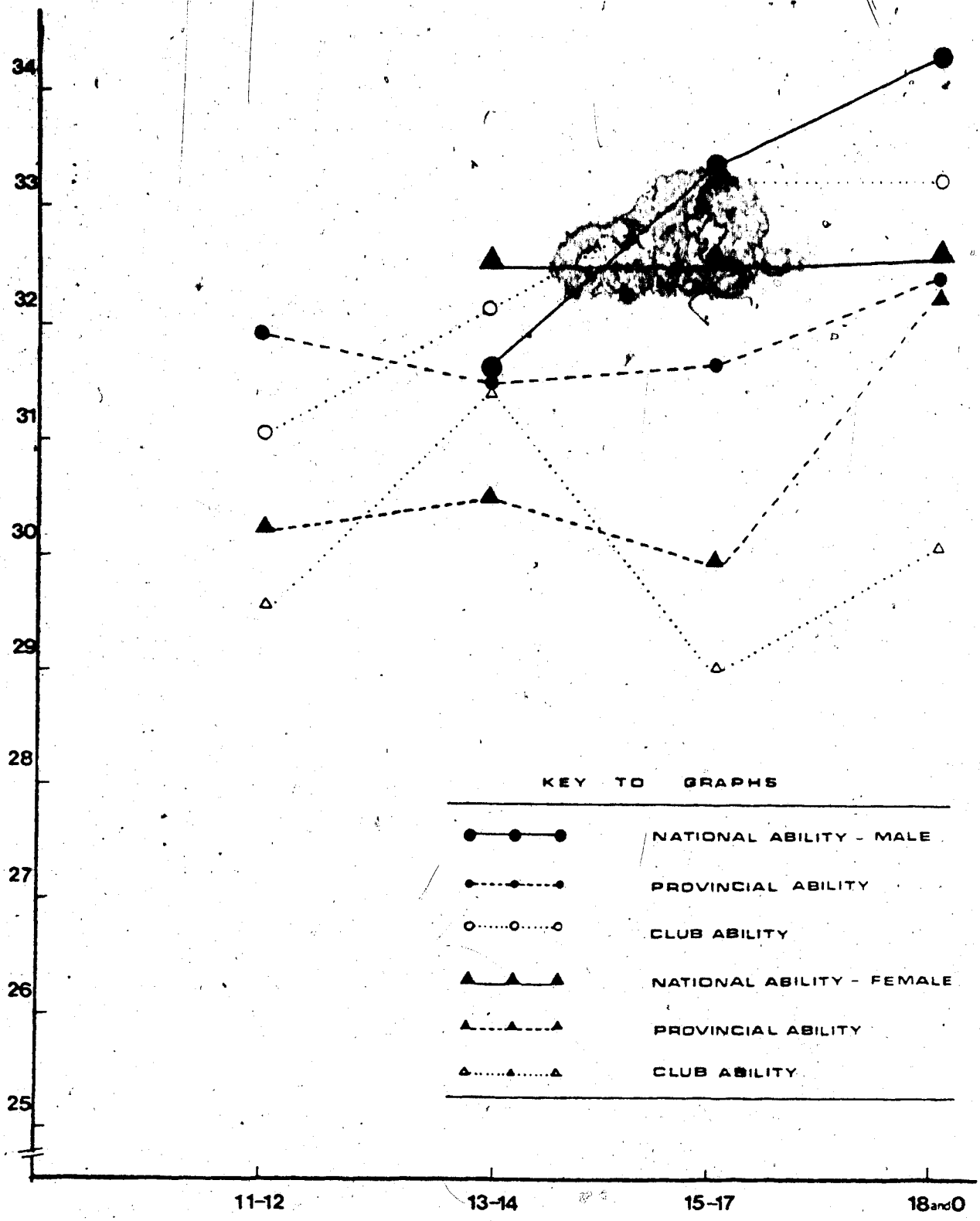


Figure iii Graph Illustrating the Means for the Variable Global Self-Esteem According to Levels of Ability, Sex and Age.

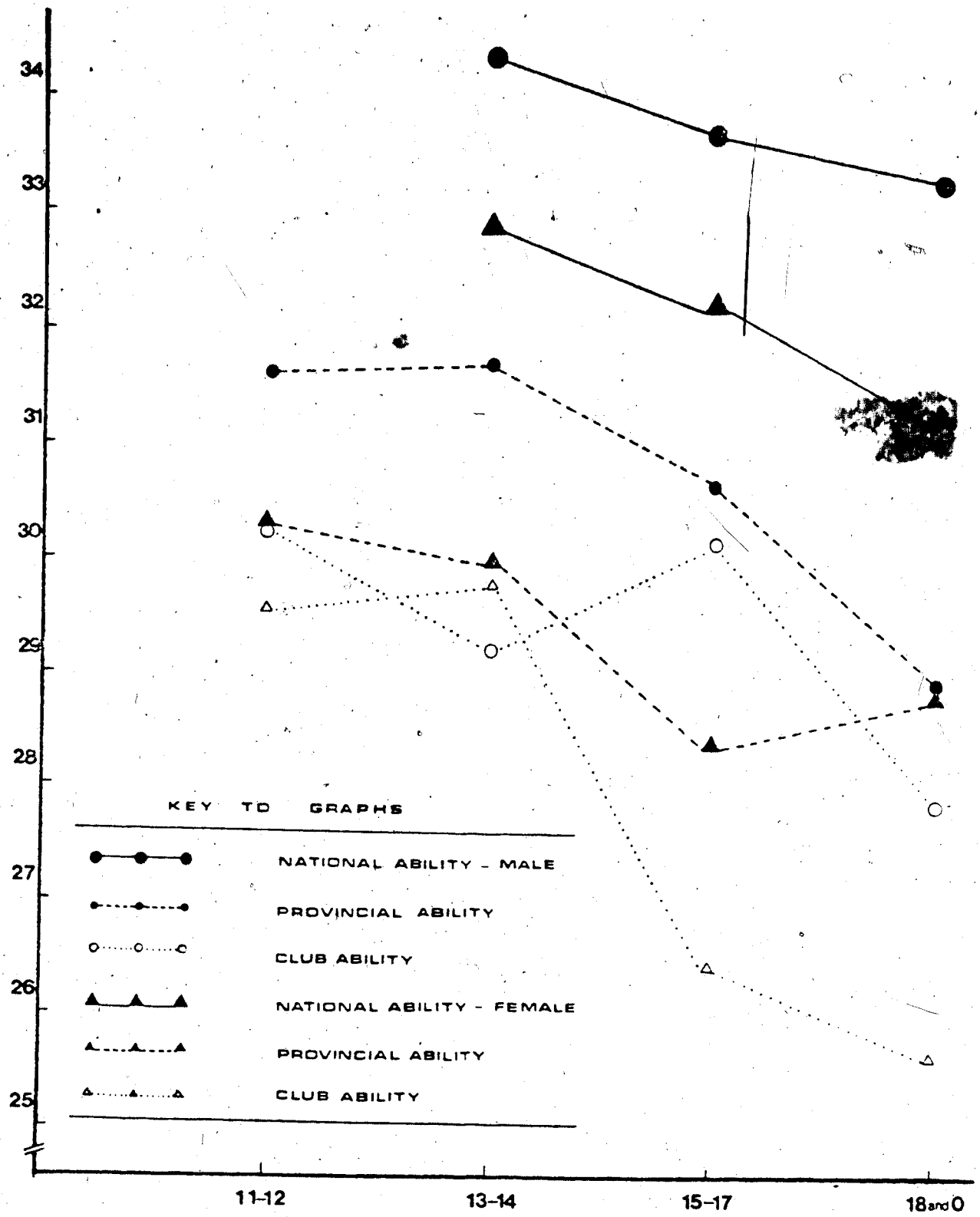


Figure iv Graph Illustrating the Means for the Variable Specific Self-Esteem According to Levels of Ability, Sex and Age.

Table 4. Three Way Analysis of Variance for the Global Self-Esteem Scores for Three Age Groups (18 years and over, 15-17 years, 13-14 years) of Male and Female Swimmers taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	284.28	18.11*
ABILITY	2	161.71	10.20*
AGE	2	19.20	1.22
2-WAY INTERACTIONS			
SEX ABILITY	2	22.05	1.40
SEX AGE	2	21.85	1.39
ABILITY AGE	4	8.70	0.55
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	14.71	0.94
RESIDUAL	552	15.69	
TOTAL	569	16.86	

* Significant at 0.05 level.

Table 5. Three Way Analysis of Variance for the Global Self-Esteem Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	297.92	19.27*
AGE	1	0.70	0.04
ABILITY	3	16.55	1.07
2-WAY INTERACTIONS			
SEX ABILITY	1	12.73	1.82
SEX AGE	3	12.14	0.78
ABILITY AGE	3	18.59	1.20
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	16.75	1.08
RESIDUAL	463	15.46	
TOTAL	478	16.08	

* Significant at 0.05 level.

Table 6. Three Way Analysis of Variance for the Specific Self-Esteem Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	399.64	19.13*
ABILITY	2	869.47	41.61*
AGE	2	184.16	8.81*
2-WAY INTERACTIONS			
SEX ABILITY	2	2.03	0.10
SEX AGE	2	8.03	0.38
ABILITY AGE	4	9.89	0.47
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	19.03	0.91
RESIDUAL	552	20.89	
TOTAL	569	24.06	

* Significant at 0.05 level.

Table 7. Three Way Analysis of Variance for the Specific Self-Esteem for Four Age Groups (18 and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	265.78	13.71*
AGE	1	123.05	6.35*
ABILITY	3	151.93	7.84*
2-WAY INTERACTIONS			
SEX ABILITY	1	3.23	0.17
SEX AGE	3	12.48	0.64
ABILITY AGE	3	5.38	0.28
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	20.24	1.04
RESIDUAL	463	19.38	
TOTAL	478	20.87	

* Significant at 0.05 level.

support the above with significant differences present in the main effects as a function of sex ($F(1,463)=13.71$, $p<.001$), ability ($F(1,463)=6.35$, $p<.001$), and age ($F(2,463)=7.84$, $p<.001$).

Figure iv shows the plotted means for the variable specific self-esteem. The graph illustrates that the National level of swimmer obtains higher levels of specific self-esteem compared to the other two ability groups and that males obtain higher scores than females. In contrast to the variable global self-esteem, there seems to be a downward trend in specific self-esteem scores as the swimmers' ages increase even though scores still appear to be relatively high. This may be due to a maturer view or clearer perspective of one's true or even naturally declining potential which often comes with advanced years in competitive swimming and with the accumulation of experience in the sport.

In summary, it can be concluded from the analyses that there are differences present in both the global and the specific self-esteem scores of this swimming sample as a function of sex, age and level of ability so lending support to Hypothesis #4.

Trustworthiness

This variable is expressed in terms of faith in others and more specifically faith in the coach. ANOVA 1 revealed a significant difference between sexes on the variable faith in others (Table 8) with females obtaining higher scores

than males ($F(1,552)=6.73$, $p<.01$). Table 9 shows the results of ANOVA 2 and indicated the presence of a two way interaction (SEX x ABILITY). However, following tests of significance on the main effects (Table 10), males were found to be significantly lower in faith in others than females but at the Club level of ability ($F(1,463)=7.84$, $p<.01$).

Table 8. Three Way Analysis of Variance for the Faith in Others Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	9.43	6.73*
ABILITY	2	0.10	0.07
AGE	2	1.31	0.94
2-WAY INTERACTIONS			
SEX ABILITY	2	3.25	2.32
SEX AGE	2	1.96	1.40
ABILITY AGE	4	3.03	2.16
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	1.44	1.03
RESIDUAL	552	1.40	
TOTAL	569	1.43	

* Significant at 0.05 level.

Table 9. Three Way Analysis of Variance for the Faith in Others Scores for Four Age Groups (16 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	12.73	10.41*
ABILITY	1	0.72	0.59
AGE	3	1.97	1.61
2-WAY INTERACTIONS			
SEX ABILITY	1	5.90	4.82*
SEX AGE	3	2.29	1.88
ABILITY AGE	3	2.88	2.36
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	1.10	0.90
RESIDUAL	463	1.22	
TOTAL	478	1.27	

* Significant at 0.05 level.

Table 10. Tests of Significance for the Variable Faith in Others using the Sequential Sums of Squares.

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	1.22	
SEX within ABILITY (1)	1	3.17	2.59
SEX within ABILITY (2)	1	9.59	7.84*

* Significant at 0.05 Level.
(Where ABILITY (1) = National; ABILITY (2) = Provincial)

In the case of the variable faith in coach, it was observed following ANOVA 1 (Table 11) that significant differences between sexes ($F(1,552)=6.88$, $p<.01$), and among ability groups ($F(2,552)=2.91$, $p<.05$) were present. It would seem that females were more trusting of the coach than males, and the lower the level of ability of swimmer, the more evident the faith in the coach. These findings were supported in ANOVA 2 (Table 12). Differences in sex ($F(1,463)=5.19$, $p<.05$), and in ability ($F(1,463)=3.84$, $p<.05$) were again observed. Figures v and vi present the means of the variables faith in others and faith in the coach according to sex, age and level of ability. While these differences are small, mean scores tend to be higher for both males and females across both ability levels and age categories when comparing faith in coach with faith in others.

In summary, there seemed to be limited support for Hypothesis #4 for both variables while females demonstrated greater faith in others and faith in coach by comparison to the males. It appeared that the degree of this trust increased with a decrease in the ability level of the female swimmer.

Competitive Anxiety

Table 13 shows a significant three way interaction (SEX x AGE x ABILITY) for the variable competitive A-trait in the case of ANOVA 1. Females were higher in competitive trait anxiety than males and it appeared that anxiety scores

Table 11. Three Way Analysis of Variance for the Faith in Coach Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	6.56	6.88*
ABILITY	2	2.77	2.91*
AGE	2	0.36	0.38
2-WAY INTERACTIONS			
SEX ABILITY	2	0.93	0.97
SEX AGE	2	2.02	2.12
ABILITY AGE	4	1.74	1.82
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	0.51	0.54
RESIDUAL	552	0.95	
TOTAL	569	0.97	

* Significant at 0.05 level.

Table 12. Three Way Analysis of Variance for the Faith in Coach Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	4.83	5.19*
ABILITY	1	3.58	3.84*
AGE	3	0.20	0.21
2-WAY INTERACTIONS			
SEX ABILITY	1	0.42	0.45
SEX AGE	3	0.72	0.77
ABILITY AGE	3	0.87	0.74
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	0.69	0.74
RESIDUAL	463	0.93	
TOTAL	478	0.94	

* Significant at 0.05 level.

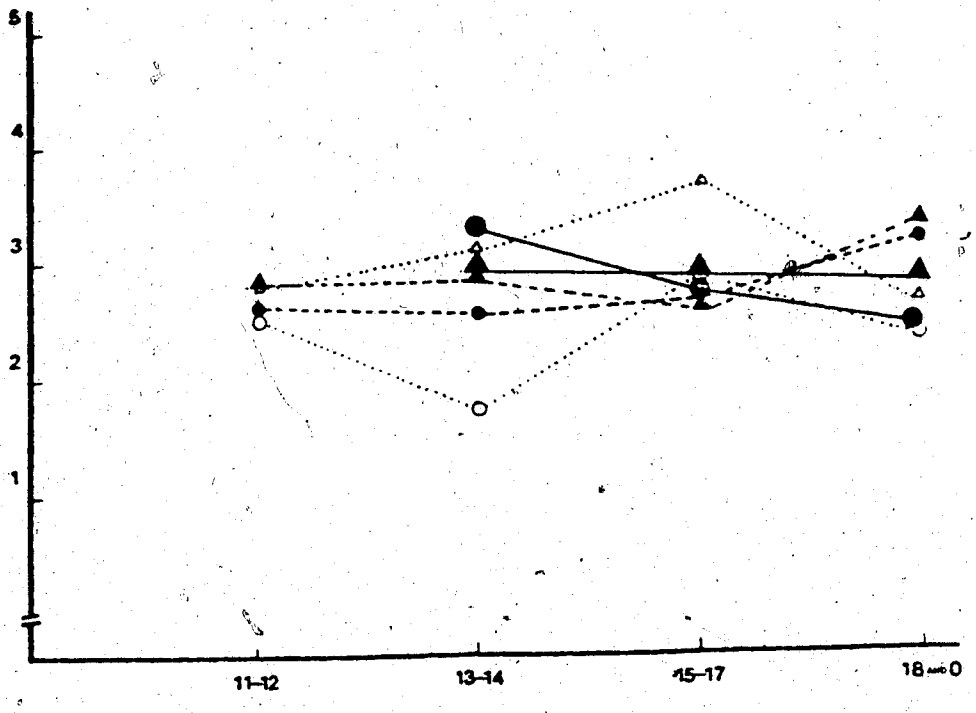


Figure v Graph Illustrating the Means for the Variable Faith in Others According to Levels of Ability, Sex and Age.

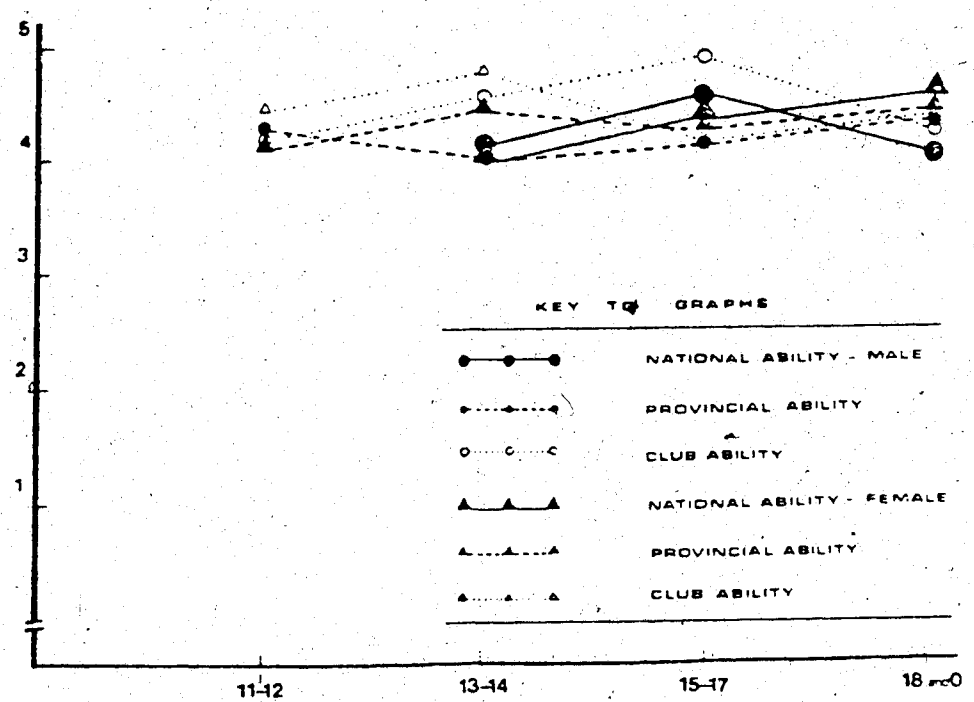


Figure vi Graph Illustrating the Means for the Variable Faith in Coach According to Levels of Ability, Sex and Age.

Table 13. Three Way Analysis of Variance for the A-Trait Scores for the Three Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	263.04	14.47*
ABILITY	2	181.97	10.01*
AGE	2	45.98	2.53
2-WAY INTERACTIONS			
SEX ABILITY	2	10.07	0.55
SEX AGE	2	19.98	1.10
ABILITY AGE	4	19.01	1.05
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	47.01	2.59*
RESIDUAL	552	18.17	
TOTAL	569	19.33	

* Significant at 0.05 level.

Table 14. Three Way Analysis of Variance for the A-Trait Scores for the Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	157.91	8.48*
ABILITY	1	27.98	1.50
AGE	3	75.34	4.05*
2-WAY INTERACTIONS			
SEX ABILITY	1	8.29	0.44
SEX AGE	3	39.16	2.10
ABILITY AGE	3	6.69	0.36
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	46.51	2.50*
RESIDUAL	463	18.61	
TOTAL	478	19.54	

* Significant at 0.05 level.

decreased as the level of ability increased for both males and females. In the post hoc analysis, the tests (Table 15) revealed that females scored significantly higher on A-trait at the Club level of ability. Table 14 shows the results of ANOVA 2 and the presence of a three way interaction (SEX x AGE x ABILITY) supporting the earlier findings. Tests of significance using the sequential sums of squares shed no light on the nature of these differences.

Table 15. Tests of Significance for Competitive A-Trait Using the Sequential Sums of Squares (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	18.18	
SEX within AGE by ABILITY (1)	3	12.06	0.66
SEX within AGE by ABILITY (2)	3	36.17	1.99
SEX within AGE by ABILITY (3)	3	103.44	5.69*

* Significant at 0.05 level.

The means of the variable competitive A-trait according to sex, age and ability were plotted and are illustrated in Figure vii. It is difficult to judge from the anxiety scores whether meaningful differences exist as a consequence of age and ability. The graph hints that females do tend to score higher than males and the greatest spread in scores is to be observed among the 15 - 17 years Club level of ability swimmer. This discrepancy is difficult to explain. The graph illustrates that competitive anxiety is lowered as ability

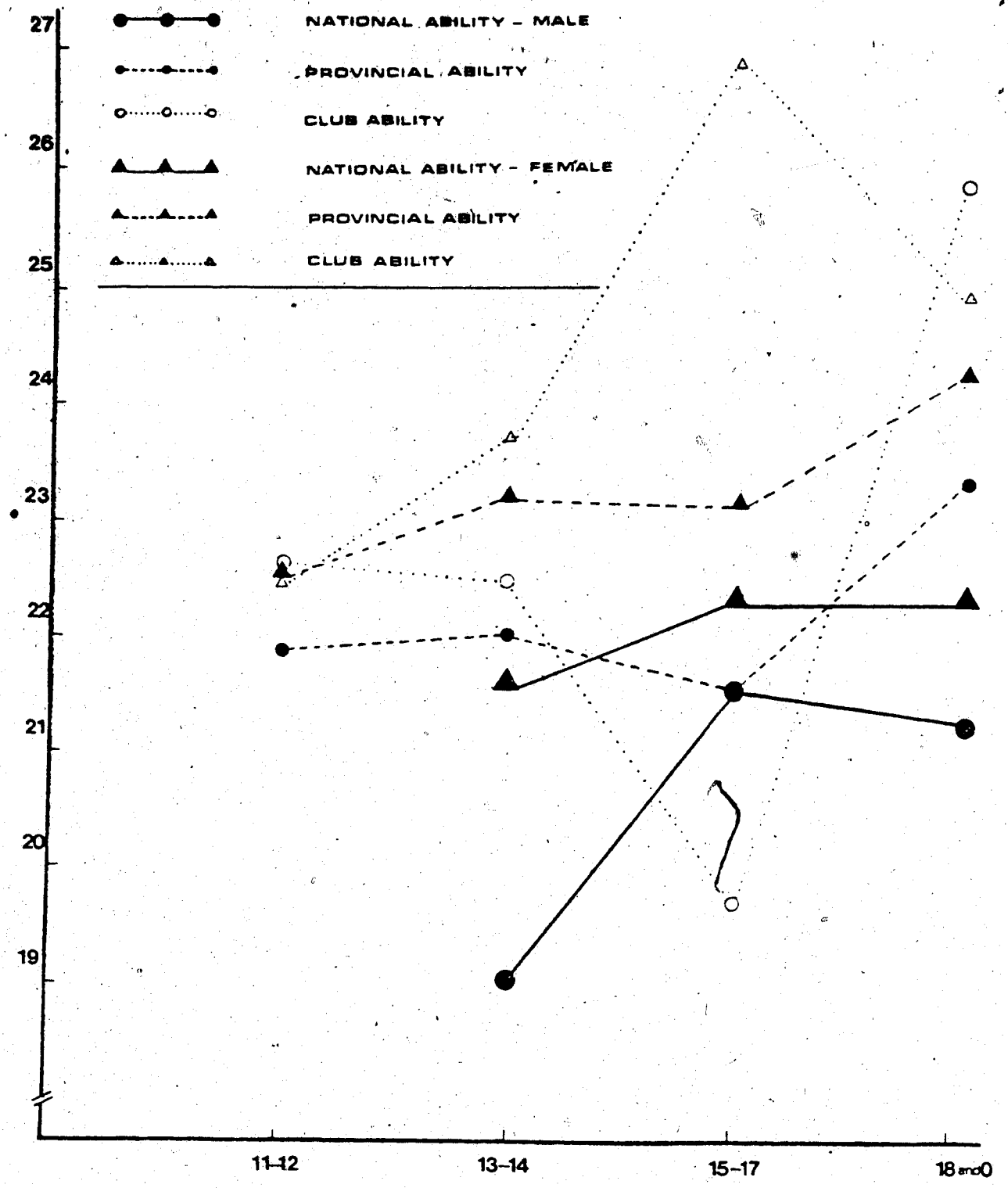


Figure vii Graph Illustrating the Means for the Variable Competitive Anxiety (A-Trait). According to Levels of Ability, Sex and Age.

improves. The dramatic changes to the anxiety scores tend to take place in the 15 - 17 years time frame or during late adolescence.

In conclusion, though there are differences as a function of sex, age and ability to be seen in the variable competitive A-trait, these differences are less significant than expected but nonetheless, do lend support to Hypothesis #4.

Self-esteem - the semantic differential

The second measure of self-esteem is reflected in the use of the semantic differential and consists of "how I view myself as a person" which bears some relationship to global self-esteem and "how I view myself as a competitive swimmer" which is akin to specific self-esteem. These two variables comprise of three factors - Factor I (evaluative), Factor II (potency) and Factor III (activity) - and in light of the analyses these three factors are considered in turn to see if the results yield similar findings to those observed earlier about self-esteem. First, the variable self as a person or "how I view myself as a person" is considered.

Table 16 shows the presence of a three way interaction (SEX x AGE x ABILITY) on Factor I (the evaluative component of the semantic differential - "me as a person") following ANOVA 1. Males possess higher self-evaluation scores than females. This fact was upheld by ANOVA 2 (Table 17) which also indicated a three way interaction. Tables 18, 19, 20 and 21 show the results of the post hoc analyses for ANOVA 1

Table 16. Three Way Analysis of Variance for Factor I (me as a person) Scores for Three Age Groups (18 years and over, 15-17 years, 13-14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	193.15	37.30*
ABILITY	2	56.34	10.88*
AGE	2	12.69	2.45
2-WAY INTERACTIONS			
SEX ABILITY	2	13.25	2.56
SEX AGE	2	3.86	0.74
ABILITY AGE	4	2.49	0.48
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	17.08	3.30*
RESIDUAL	552	5.18	
TOTAL	569	5.87	

* Significant at 0.05 level.

Table 17. Three Way Analysis of Variance for Factor I (me as a person) Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	177.39	33.26*
ABILITY	1	7.52	1.41
AGE	3	9.72	1.82
2-WAY INTERACTIONS			
SEX ABILITY	1	5.73	1.07
SEX AGE	3	5.01	0.94
ABILITY AGE	3	2.97	0.56
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	14.50	2.72*
RESIDUAL	463	5.33	
TOTAL	478	5.78	

* Significant at 0.05 level.

Table 18. Tests of Significance for Factor I (me as a person) Using the Sequential Sums of Squares (ANOVA 1).

Source	Degrees of Freedom	Mean Squares	F. Ratio
RESIDUAL	552	5.18	
SEX by AGE within ABILITY (1)	3	27.11	5.23*
SEX by AGE within ABILITY (2)	3	23.51	4.54*
SEX by AGE within ABILITY (3)	3	42.09	8.13*

* Significant at 0.05 level.

Table 19. Tests of Significance for Factor I (me as a person) Using the Sequential Sums of Squares. (ANOVA 1)

Source	Degrees of Freedom	Mean Squares	F. Ratio
RESIDUAL	552	5.18	
SEX within AGE (1) by ABILITY (2)	1	0.28	0.05
SEX within AGE (2) by ABILITY (2)	1	12.55	2.42
SEX within AGE (3) by ABILITY (2)	1	57.91	11.18*

* Significant at 0.05 level.

Table 20. Tests of Significance for Factor I (me as a person) Using the Sequential Sums of Squares (ANOVA 2).

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	5.33	
SEX by AGE within ABILITY (2)	3	16.02	3.00*
SEX by AGE within ABILITY (3)	3	3.63	0.68

* Significant at 0.05 level.

Table 21. Tests of Significance for Factor I (me as a person) Using the Sequential Sums of Squares (ANOVA 2).

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	5.33	
SEX by AGE within ABILITY (2)	4	27.25	5.11*
SEX by AGE within ABILITY (3)	4	29.87	5.60*

* Significant at 0.05 level.

and 2. This sex difference was found to be significant across all ability groups (Table 18) and particularly for the 13 - 14 years age category of swimmer at the Provincial level of ability.

Significant differences as a consequence of sex ($F(1,552)=29.80$, $p<.001$), and ability ($F(2,552)=10.53$, $p<.001$) were present in the main effects in Factor II (the potency component) following ANOVA 1 (Table 22). Sex differences in the main effects ($F(1,463)=19.15$, $p<.001$) were in evidence following ANOVA 2 (Table 23)

The analysis on Factor III (the activity component of the semantic differential - "me as a person") indicated the presence of a three way interaction (SEX x AGE x ABILITY) both for ANOVA 1 (Table 24) and ANOVA 2 (Table 25). It was revealed that males were higher than females on this activity component but that this difference was limited to the Club ability level of swimmer at the 13 - 14 years age category. (Tables 26, 27 and 28).

Figures viii, ix and x present the means for the three factors - "me as a person". In Figure viii, it should be noticed that male swimmers score higher than females on the evaluative factor. With the exception of the male club level of ability swimmer, it would seem that there is a tendency for this self-evaluative factor to be higher as a function of levels of ability. Figure ix shows the potency factor. Here there are sex differences in evidence with males scoring higher than females. There appear to be no

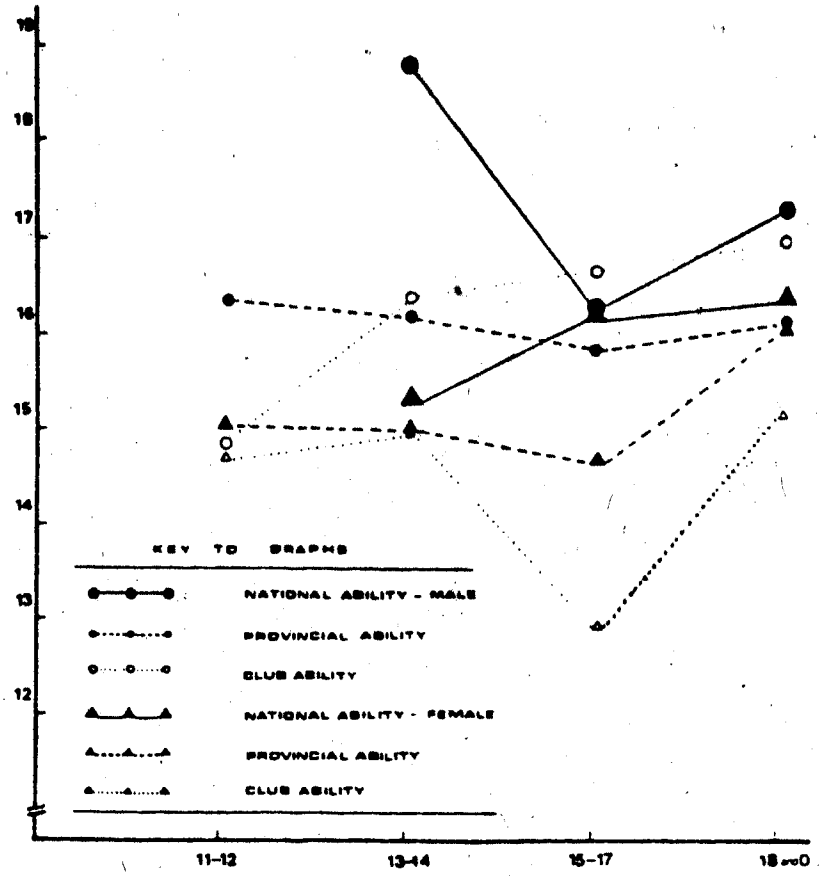


Figure viii Graph Illustrating the means for Factor I of the Semantic Differential "me as a person".

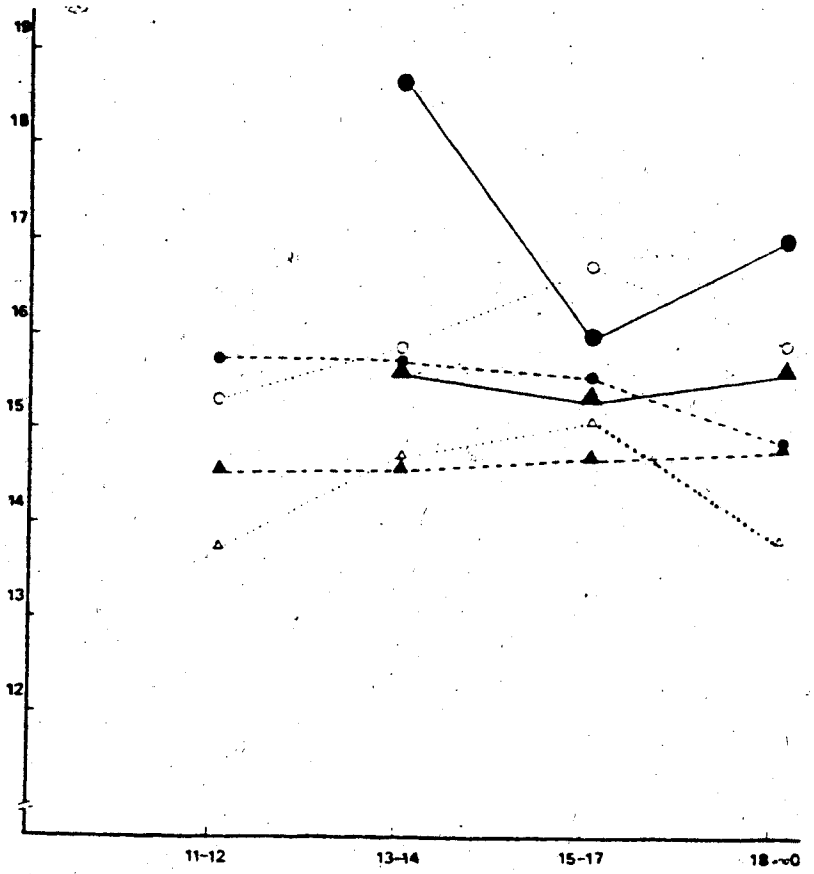


Figure ix Graph Illustrating the means for Factor II of the Semantic Differential "me as a person".

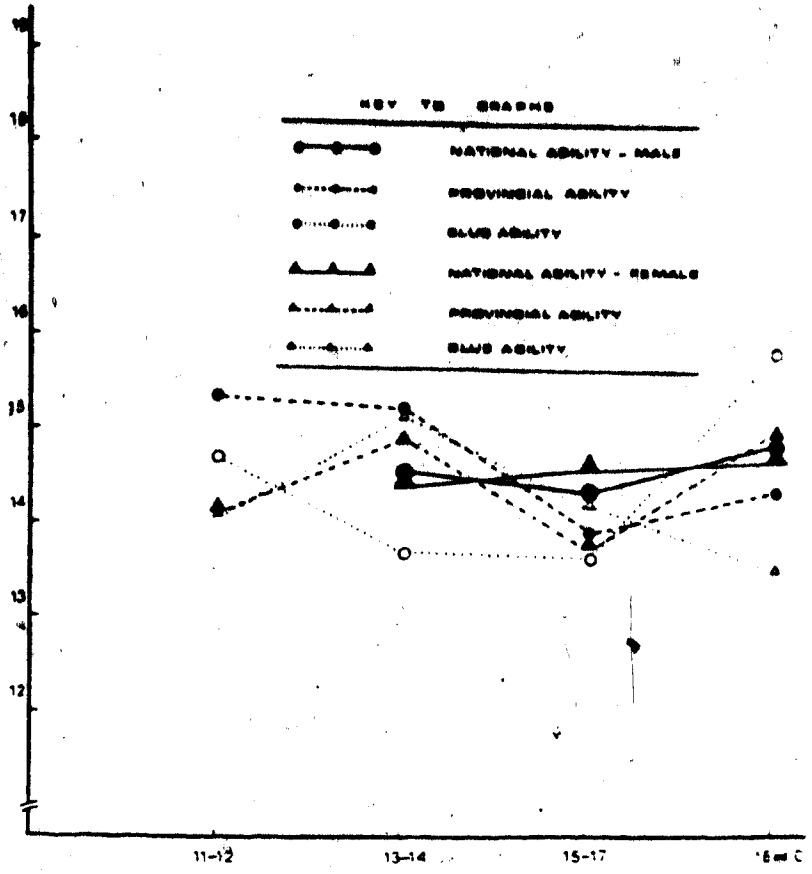


Figure x Graph Illustrating the means for Factor III of the Semantic Differential "me as a person".

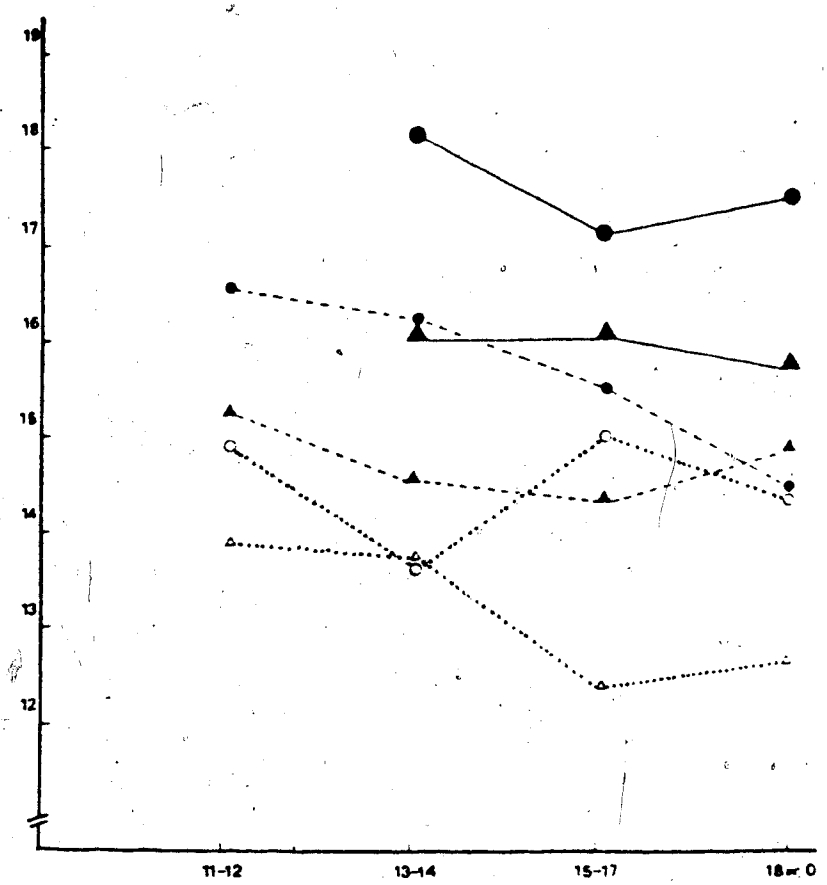


Figure xi Graph Illustrating the means for Factor I of the Semantic Differential "me as a swimmer".

Table 22. Three Way Analysis of Variance for Factor II (me as a person) Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 -14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	191.89	29.80*
ABILITY	2	67.83	10.53*
AGE	2	3.25	0.50
2-WAY INTERACTIONS			
SEX ABILITY	2	7.75	1.20
SEX AGE	2	4.40	0.68
ABILITY AGE	4	10.46	1.62
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	5.35	0.83
RESIDUAL	552	6.44	
TOTAL	569	6.95	

*Significant at 0.05 level.

Table 23. Three Way Analysis of Variance for Factor II (me as a person) Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	130.84	19.15*
ABILITY	1	0.10	0.01
AGE	3	4.75	0.69
2-WAY INTERACTIONS			
SEX ABILITY	1	9.99	1.46
SEX AGE	3	0.52	0.08
ABILITY AGE	3	7.69	1.13
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	2.32	0.34
RESIDUAL	463	6.83	
TOTAL	478	7.07	

* Significant at 0.05 level.

Table 24. Three Way Analysis of Variance for Factor III (me as a person) Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	0.00	0.00
ABILITY	2	4.09	0.74
AGE	2	28.81	5.21*
2-WAY INTERACTIONS			
SEX ABILITY	2	1.25	0.22
SEX AGE	2	4.48	0.81
ABILITY AGE	4	5.33	0.96
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	13.74	2.49*
RESIDUAL	552	5.52	
TOTAL	569	5.62	

* Significant at 0.05 level.

Table 25. Three Way Analysis of Variance for Factor III (me as a person) Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	9.69	1.70
ABILITY	1	3.05	0.53
AGE	3	28.33	4.96*
2-WAY INTERACTIONS			
SEX ABILITY	1	4.95	0.87
SEX AGE	3	11.79	2.07
ABILITY AGE	3	0.80	0.14
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	17.01	2.98*
RESIDUAL	468	5.70	
TOTAL	478	5.91	

* Significant at 0.05 level.

Table 26. Tests of Significance for Factor III (me as a person) Using the Sequential Sums of Squares. (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	5.52	
SEX within AGE by ABILITY (1)	3	0.57	0.10
SEX within AGE by ABILITY (2)	3	2.87	0.52
SEX within AGE by ABILITY (3)	3	20.75	3.75*

* Significant at 0.05 level.

Table 27. Tests of Significance for Factor III (me as a person) Using the Sequential Sums of Squares. (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	5.52	
SEX within AGE (1) by ABILITY (3)	1	37.14	6.72*
SEX within AGE (2) by ABILITY (3)	1	4.92	0.89
SEX within AGE (3) by ABILITY (3)	1	20.18	3.65*

*Significant at 0.05 level.

Table 28. Tests of Significance for Factor III (me as a person) Using the Sequential Sums of Squares. (ANOVA 2)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	5.70	
SEX within AGE by ABILITY (2)	4	9.15	1.60
SEX within AGE by ABILITY (3)	4	17.11	3.00*

*Significant at 0.05 level.

meaningful differences as a consequence of age. Finally, Figure x illustrates the activity factor but it is not possible to discern any meaningful differences here.

It is interesting to note however, that with the exception of the male 11 - 12 years age group, potency scores for the male Club level of ability swimmer seem to be higher than those of the Provincial level of ability. Also, in the case of Factor I and Factor II, the male National level of ability swimmer obtained higher evaluative and potency scores in the 13 - 14 years age group than at the two other age levels. This is best explained by the fact that it is unusual for male swimmers to reach a national time standard at the age of 13 or 14 years.

In summary, it is possible to see similar trends present in the semantic differential approach to those evident in the measures of both global and specific self-esteem. Sex differences were in evidence with males evaluating themselves (Factor I) and their potential (Factor II) higher than females and it is clear that these differences were influenced as a result of age and ability when considering "me as a person". Consequently, the results lend support to Hypothesis #4.

Finally, the variable self as a swimmer or "how I view myself as a competitive swimmer", which closely approximates the notion of specific self-esteem, was analysed. In the case of ANOVA 1, Table 29 shows the presence of a three way interaction (SEX x AGE x ABILITY) for Factor I (the

evaluative component). Males are significantly higher in their self-evaluation as competitive swimmers than females. However, tests of significance (Tables 31, 32 and 33) revealed that this is true particularly for the 18 years and over age group swimmer at the National ability level and for the 13 - 14 years age category at the Provincial level of ability. Table 30 shows the results of ANOVA 2 and the presence of a three way interaction (SEX x AGE x ABILITY) for Factor I.

Significant differences are present in the main effects for Factor II (the potency component) as a function of sex ($F(1,552)=36.55$, $p<.001$) age ($F(2,552)=3.88$, $p<.001$) and ability ($F(2,552)=24.84$, $p<.05$) following ANOVA 1 (Table 34). Similar results were found following ANOVA 2 (Table 35). Males appear to have a higher regard for their potential than females and this is reflected more as a consequence of ability than of age.

For Factor III (the activity component) a three way interaction (SEX x AGE x ABILITY) was found to exist both in ANOVA 1 (Table 36) and in ANOVA 2, (Table 37).

Tests of significance (Tables 38 and 39) indicated that males are higher than females in the case of the 18 years and over age group at the National level of ability and for the 13 - 14 years age group at the Provincial and Club levels of ability.

Figures xi - xiii show the means for each of the factors of the semantic differential - "me as a competitive

Table 29. Three Way Analysis of Variance for Factor I (me as a swimmer) Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	244.48	36.35*
ABILITY	2	306.12	45.51*
AGE	2	11.36	1.69
2-WAY INTERACTIONS			
SEX ABILITY	2	1.41	0.21
SEX AGE	2	0.56	0.08
ABILITY AGE	4	1.08	0.16
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	16.19	2.41
RESIDUAL	552	6.73	
TOTAL	569	8.15	

* Significant at 0.05 level.

Table 30. Three Way Analysis of Variance for Factor I (me as a swimmer) Scores for Four Age Groups (18 years and over, 15-17 years, 13-14 years, 11-12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	169.02	24.91*
ABILITY	1	151.13	22.27*
AGE	3	25.34	3.37*
2-WAY INTERACTIONS			
SEX ABILITY	1	0.09	0.01
SEX AGE	3	2.27	0.33
ABILITY AGE	3	0.41	0.06
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	17.90	2.64*
RESIDUAL	463	6.78	
TOTAL	478	7.61	

* Significant at 0.05 level.

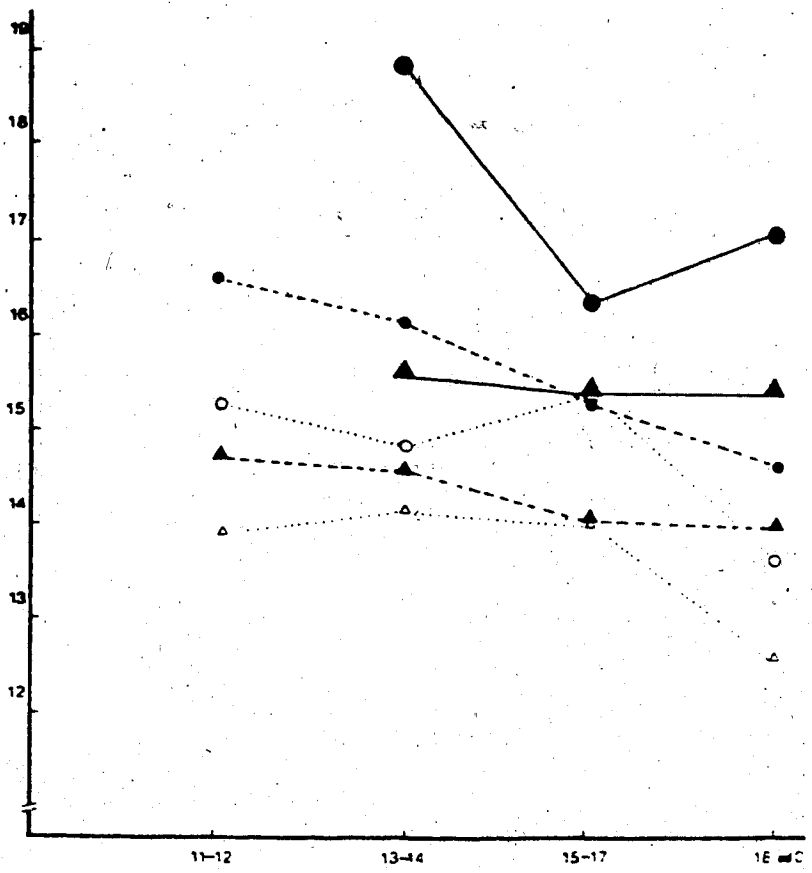


Figure xii Graph Illustrating the means for Factor II of the Semantic Differential "me as a swimmer".

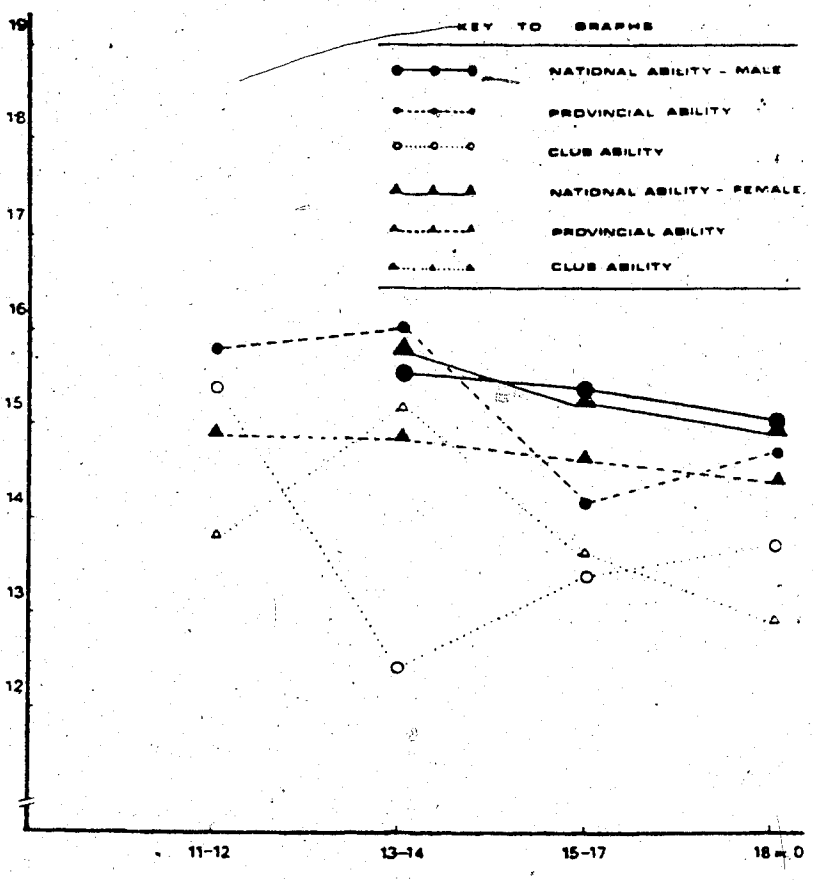


Figure xiii Graph Illustrating the means for Factor III of the Semantic Differential "me as a swimmer".

Table 31. Tests of Significance for Factor I (me as a swimmer) Using the Sequential Sums of Squares (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	6.73	
SEX within AGE by ABILITY (1)	3	32.64	4.85*
SEX within AGE by ABILITY (2)	3	39.74	5.91*
SEX within AGE by ABILITY (3)	3	35.52	5.28*

* Significant at 0.05 level.

Table 32. Tests of Significance for Factor I (me as a swimmer) Using the Sequential Sums of Squares (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	6.73	
SEX within AGE (1) by ABILITY (1)	1	91.76	13.64*
SEX within AGE (2) by ABILITY (1)	1	5.39	0.80*
SEX within AGE (3) by ABILITY (1)	1	6.18	0.92
SEX within AGE (2) by ABILITY (2)	1	15.60	2.32
SEX within AGE (3) by ABILITY (2)	1	97.45	14.49

* Significant at 0.05 level.

Table 33. Tests of Significance for Factor I (me as a swimmer) Using the Sequential Sums of Squares (ANOVA 2)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	6.78	
SEX within AGE by ABILITY (2)	4	35.52	5.23*
SEX within AGE by ABILITY (3)	4	27.66	4.08*

* Significant at 0.05 level.

Table 34. Three Way Analysis of Variance for Factor II (me as a swimmer) Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	288.57	36.55*
ABILITY	2	196.14	24.84*
AGE	2	30.63	3.88*
2-WAY INTERACTIONS			
SEX ABILITY	2	7.26	0.92
SEX AGE	2	2.74	0.35
ABILITY AGE	4	11.70	1.48
3-WAY INTERACTIONS			
SEX ABILITY AGE	4	7.17	0.91
RESIDUAL	552	7.89	
TOTAL	569	8.94	

* Significant at 0.05 level.

Table 35. Three Way Analysis of Variance for Factor II (me as a swimmer) Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two Levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	205.00	26.48*
ABILITY	1	58.72	7.59*
AGE	3	35.09	4.53*
2-WAY INTERACTIONS			
SEX ABILITY	1	7.47	0.96
SEX AGE	3	1.82	0.24
ABILITY AGE	3	7.15	0.92
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	4.28	3.79
RESIDUAL	463	7.74	
TOTAL	478	8.42	

* Significant at 0.05 level.

Table 36. Three Way Analysis of Variance for Factor III (me as a swimmer) Scores for Three Age Groups (18 years and over, 15 - 17 years, 13 - 14 years) of Male and Female Swimmers Taken at Three Levels of Ability (National, Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	24.19	3.62*
ABILITY	1	79.99	11.97*
AGE	3	42.75	6.40*
2-WAY INTERACTIONS			
SEX ABILITY	1	24.58	3.68*
SEX AGE	3	12.01	1.80
ABILITY AGE	3	1.05	0.16
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	27.03	4.04*
RESIDUAL	463	6.68	
TOTAL	478	7.27	

* Significant at 0.05 level.

Table 37. Three Way Analysis of Variance for Factor III (me as a swimmer) Scores for Four Age Groups (18 years and over, 15 - 17 years, 13 - 14 years, 11 - 12 years) of Male and Female Swimmers Taken at Two levels of Ability (Provincial and Club).

Source	Degrees of Freedom	Mean Square	F. Ratio
MAIN EFFECTS			
SEX	1	24.19	3.62*
ABILITY	1	79.99	11.97*
AGE	3	42.75	6.40*
2-WAY INTERACTIONS			
SEX ABILITY	1	24.58	3.68*
SEX AGE	3	12.01	1.80
ABILITY AGE	3	1.05	0.16
3-WAY INTERACTIONS			
SEX ABILITY AGE	3	27.03	4.04
RESIDUAL	463	6.68	
TOTAL	478	7.27	

* Significant at 0.05 level.

Table 38. Tests of Significance for Factor III (me as a swimmer) Using the Sequential Sums of Squares (ANOVA 1)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	552	5.88	
SEX within AGE by ABILITY (1)	3	3.47	0.59
SEX within AGE by ABILITY (2)	3	18.02	3.06*
SEX within AGE by ABILITY (3)	3	19.07	3.24*
SEX within AGE (1) by ABILITY (2)	1	0.07	0.01
SEX within AGE (2) by ABILITY (2)	1	10.26	1.74
SEX within AGE (3) by ABILITY (2)	1	44.35	7.54*
SEX within AGE (1) by ABILITY (3)	1	18.85	3.20
SEX within AGE (2) by ABILITY (3)	1	2.43	0.41
SEX within AGE (3) by ABILITY (3)	1	36.02	6.12*

* Significant at 0.05 level.

Table 39. Tests of Significance for Factor III (me as a swimmer) Using the Sequential Sums of Squares (ANOVA 2)

Source	Degrees of Freedom	Mean Square	F. Ratio
RESIDUAL	463	6.68	
SEX within AGE by ABILITY (2)	4	15.79	2.36*
SEX within AGE by ABILITY (3)	4	21.17	3.17*

* Significant at 0.05 level.

swimmer". Figure xi illustrates differences as a function of sex across the three ability levels with males tending to score higher than females on the evaluative component. There is little distinguishable among the scores as a consequence of age. The same observations arise from Figure xii illustrating the potency component. There is a difference in the potency scores across the three ability levels among both males and females. The higher the ability level the higher the score. This was not so evident in the corresponding "me as a person" component. However, it is difficult to make any worthwhile distinctions from Figure xiii about the activity component scores.

In summary, differences are evident in all three factors of the variable "me as a swimmer" and similar trends compared to those found in the variable specific self-esteem are present. Consequently these findings are supportive of Hypothesis #4.

C. Relationships

Correlations

The correlations among the thirteen variables were calculated and shown in Table 40. Of particular interest were the variables which appear in the hypotheses. These are discussed below. Table 41 highlights the significant correlations as they relate to the hypotheses.

In Hypothesis 1 it was postulated that both global and specific self-esteem would be related to competitive

Table 40 Correlation Matrix of the Thirteen Dependent Variables

	Locus of Control	Global Self-Esteem	Faith in Others	Anxiety	Faith in Coach	Specific Self-Esteem	Specific Locus of Control	Self as a Person I	Self as a Person II	Self as a Person III	Self as a Swimmer I	Self as a Swimmer II	Self as a Swimmer III
Locus of Control		0.28	0.15	-0.04	0.11	0.20	0.54	0.20	0.11	0.01	0.14	0.09	0.03
Global Self-Esteem			0.09	-0.22	0.07	0.66	0.30	0.57	0.37	0.16	0.50	0.36	0.11
Faith in Others				-0.07	0.24	0.08	0.11	0.01	-0.08	0.05	-0.00	-0.03	0.03
Competitive Anxiety					-0.04	-0.28	-0.08	-0.14	-0.16	0.18	-0.23	-0.24	0.22
Faith in Coach						0.11	0.21	-0.02	-0.09	-0.01	-0.04	-0.09	0.00
Specific Self-Esteem							0.27	0.43	0.35	0.15	0.61	0.49	0.31
Specific Locus of Control								0.26	0.20	-0.02	0.24	0.20	0.05
Self as a Person I									0.52	0.25	0.71	0.51	0.23
II										0.16	0.49	0.77	0.22
III											0.22	0.16	0.62
Self as a Swimmer I												0.65	0.37
II													0.32
III													

A-trait. Although a negative relationship was present it was not as high as expected but nonetheless sufficiently significant to support Hypothesis #1.

In Hypothesis #2 it was proposed that global and specific self-esteem and general and specific locus of control would be related. Again, the correlations were found to be statistically significant but somewhat low to be of psychological importance. However, there is some support for Hypothesis #2.

In Hypothesis #3 it was predicted that global and specific self-esteem and faith in others and faith in coach would be related. These relationships though statistically significant were too small relatively speaking and afforded little or no support for Hypothesis #3.

Factor analysis

Up to this point pairwise relationships have been examined, and given the hypotheses, it was felt that many of the variables would cluster together. In that the relationships with sex, age and ability might provide further insight, a principal component factor analysis was performed on all sixteen variables with ones in the diagonal of the correlation matrix. This analysis yielded five eigenvalues greater than 1 and it was concluded that there were a maximum of five factors. Subsequently, a principal axis factor analysis with the squared multiple correlation as estimates of communalities in the diagonal was run under the constraint that only five factors be extracted. The

Table 41. Tabulation of the Statistically Significant Correlations Related to the Hypotheses.

		General Locus of Control	Faith in Others	Competitive Anxiety	Faith in Coach	Specific Locus of Control
G. S.E.*		0.28	0.09	-0.22	0.07	0.30
S. S.E.*		0.20	0.08	-0.28	0.11	0.27
'M.a.a.p'*	I	0.20		-0.14		0.43
	II	0.11	-0.08	-0.16	-0.09	0.20
	III			0.18		
'M.a.a.s'*	I	0.14		-0.23		0.24
	II	0.09		-0.24	-0.09	0.20
	III			0.22		

N = 705 Statistical significance r = 0.07:
Psychological importance r = 0.20

* G. S.E. = Global Self-Esteem
* S. S.E. = Specific Self-Esteem
*'M.a.a.p' = 'Me as a person'
*'M.a.a.s' = 'Me as a swimmer'

results of this can be seen in Appendix 10.

Following these analyses a varimax rotation on the five factors was performed and the results are shown in Table 42. Factor I consists of the evaluative component of the semantic differential "me as a person" (0.520) and "me as a swimmer" (0.528) along with the potency component "me as a person" (0.770) and "me as a swimmer" (0.777). This factor is also partially sex linked (0.308). Since the evaluative and potency components of the semantic differential both for "me as a person" and "me as a swimmer" load highly on Factor

Table 42. PRINCIPAL FACTOR MATRIX AFTER VARIMAX ROTATION

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY
SEX	-0.308	-0.075	0.022	-0.045	0.100	.125
ABILITY	-0.140	-0.261	-0.064	0.003	0.461	.336
AGE	-0.081	0.060	0.063	-0.097	0.886	.311
GENERAL LOCUS	0.138	0.038	-0.010	0.684	-0.028	.330
GLOBAL SELF-ESTEEM	0.274	0.587	0.527	0.290	-0.174	.592
FAITH IN OTHERS	-0.184	0.139	0.040	0.240	-0.003	.110
COMPETITIVE ANXIETY	-0.148	-0.380	0.328	-0.018	-0.020	.249
FAITH IN COACH	-0.219	0.125	0.007	0.300	0.053	.146
SPECIFIC SELF-ESTEEM	0.215	0.791	0.154	0.198	-0.040	.628
SPECIFIC LOCUS	0.219	0.088	-0.029	0.713	-0.138	.384
SELF AS PERSON I	0.520	0.416	0.177	0.161	-0.172	.630
II	0.770	0.198	0.100	0.022	-0.061	.645
III	0.087	0.063	0.670	0.002	-0.003	.440
SELF AS SWIMMER I	0.528	0.584	0.235	0.067	-0.126	.709
II	0.777	0.362	0.139	-0.013	0.013	.723
III	0.140	0.136	0.897	0.009	0.012	.552

I, but do not have a correspondingly high loading on either global or specific self-esteem, it would seem best to label Factor I as self-concept rather than equate it with self-esteem. It does seem strange that the activity component does not load here as well to make the distinction complete. However, this could be a "method" factor related to the use of the semantic differential.

Factor II is composed of global (.587) and specific self-esteem (0.791) and can be identified as self-esteem. It should be noted that it is linked to the evaluative component of both "me as a person" (0.416) and "me as a swimmer" (0.584). It is partially linked to competitive anxiety (-0.380) which information, coupled with the correlation evidence and the univariate analyses, might lend some additional support to Hypothesis #1 that self-esteem and competitive anxiety are related.

Factor III is made up of the activity component of the semantic differential both "me as a person" (0.670) and "me as a swimmer" (0.897). It should be noted again that there is a loading (0.328) of this factor on both competitive anxiety and global self-esteem (0.527). This factor can be simply labelled 'activity'. Factor IV clearly comprises of general locus of control (0.684) and specific locus of control (0.713) and can be labelled locus of control. There is a small loading observable on global self-esteem (0.290) but whether this is sufficiently large to lend support to Hypothesis #2 is rather difficult to conclude.

Finally, age (0.886) and ability (0.461) by themselves form Factor V. It appears that the structure of relationships among the variables is relatively independent of age and ability. In this respect it seems that the factor analysis is non-supportive of Hypothesis #4.

D. Discussion

Although previous research has implied support for the notion that self-esteem and competitive anxiety are related, in this study the evidence was far from convincing. A tendency to a negative relationship was in evidence in the correlational and the factor analytic data and statistically significant to the point of supporting Hypothesis #1. Although the magnitude of the correlations was rather low relatively speaking, it is not possible to go along with Berkowitz (1977) and flatly deny the existence of any relationship. It is still important for the coach to be aware of both measures and not to be surprised if a swimmer with relatively low levels of self-esteem exhibits high levels of anxiety in a competitive situation.

It has also been generally accepted in the literature that self-esteem positively correlates with locus of control (Prawat, 1976; Roe, 1979; Javitch, 1980; Flemming and Watts, 1980). High self-esteem subjects are expected to be more internally focused and more responsible for performance outcomes than low self-esteem individuals who lean more to externality. Although there was statistically significant

support for Hypotheses #2, the correlations were somewhat low and were not as psychologically important as hoped. However, a tendency was present and coupled with the relatively small loading on global self-esteem evident for Factor IV (locus of control) following the factor analysis, coaches must be advised to recognise that those swimmers with high self-esteem tend to internality while those with low self-esteem levels seem to regard themselves as less responsible for performance outcomes. This finding requires precise coaching adjustments particularly in the detailed race preparation of certain athletes.

There was no support for Hypothesis #3 which in the first place predicted a relationship between global or specific self-esteem and faith in others (Rosenberg, 1957) and in the second place, the existence of a similar relationship with faith in coach. Although it makes sense to expect subjects with low self-esteem to be mistrusting of others, the converse is not necessarily true although children with high self-esteem usually experience good relationships with others (Clemes & Bean, 1981). Perhaps this discrepancy is either contained in Rosenberg's measure or in its' adaption to assess a swimmer's faith in coach. Regarding the latter variable, the scores were extremely high and exhibited a remarkable trust in the coach almost to the point of total dependence. If this is an accurate measure of faith in coach, then perhaps it should be concluded that excessive scores indicate too great a

dependence on the coach. This is possibly not the best of aspirations if swimmers are to be responsible for their performances.

The results of the univariate analyses afforded partial support for Hypothesis #4. Differences as a function of sex, age and ability were evident in varying degrees among the variables locus of control, self-esteem, faith in others and competitive anxiety whether general or specific. Differences in sex were the most marked in all the variables with the exception of Factor III (the activity component) of both "me as a person" and "me as a swimmer". An interesting result was that males were found to be more internal than females in both general and specific locus of control. This result is in contradiction to the findings of Prawat, Grissom and Parish (1979) reported in the review of literature. However, Scott (1979) found that females tend to underestimate their levels of ability and overstress the contribution of luck to their performance.

That males were found to be higher in both global and specific self-esteem in this study is supported by a host of recent research, more notably Brockner, 1979; Suslavitz, 1979; Yates, 1979; Elrod and Crase, 1980. On the other hand, females were found to be more trusting of others and more particularly of their coaches when compared to males. Since there is neither support nor denial of this result evident in the literature, it may be a fact that females display greater dependence on the coach than males.

Females were found to score higher on competitive A-trait compared to males. This tends to support the research of Horner (1974), who reported that females are more anxious than males in achievement settings, and Hogg (1978) who found female competitive swimmers to be more anxious than males. This sex difference also supports the normative data as provided by Martens (1977).

Finally, males scored higher on Factors I and II of the semantic differential, which probably relates more to the construct of self-concept. Males would appear to evaluate themselves and their potential higher than females. Coach must aware of these differences and adjust their own attitudes, expectations and behaviors accordingly, and particularly when setting goals and strategies.

The influence of ability was certainly present in both global and specific self-esteem. The higher the ability level the higher the self-esteem. Self-esteem is a major variable affecting achievement, especially when this athletic success is recognized (McElroy and Kirkendall, 1980), and vice versa. The lower the ability level of the swimmer the greater the trust in the coach. It is interesting to note here that maybe there is a danger of the inexperienced coach making the swimmer too coach dependent to the extent that this may actually limit the chances of improving the swimmer's natural level of ability. For competitive A-trait, it was observed that the higher the level of ability, the lower the scores in anxiety. This

supports the recent research of Fisher and Zwart (1981). They found that athletes who report their ability as high also exhibit low competitive anxiety. Probably, this can be interpreted to mean that with success and experience, the athlete learns to cope with competitive anxiety.

Age seems to be an influencing factor in a restricted way in respect to the variables locus of control, specific self-esteem, and Factors I and III of the semantic differential both in terms of "me as a person" and "me as a swimmer". For general locus of control the younger ages of swimmer tend to be more externally focused and less responsible for performance outcomes than the older ones. This would seem to be a natural characteristic for the young athlete. Indeed, the shifting of locus of control from an external to an increasingly internal position would seem to be an obvious goal for coaches to pursue in order to ensure a responsible attitude among their swimmers. There is certainly support for the fact that global self-esteem increases with age. However, the literature is contradictory in this respect, and these findings tend to support the work of Bachman and O'Malley (1978). Finally, with regard to the evaluative and potency factors of the semantic differential, this research indicates that there are several qualifications that have to be made as a function of age. These can be summarized as follows:

For Factor I (the evaluative component, "me as a person"), males scored higher than females particularly in

the case of the 13 - 14 years age group at the Provincial level of ability. For Factor II (the potency component, "me as a person"), males scored higher than females though tests of significance failed to reveal ability or age differences. For Factor III (the activity component, "me as a person"), males were found to score higher than females but this difference was limited to the 13 - 14 years age category at the Club level of ability.

For Factor I (the evaluative component, "me as a swimmer"), males were found to be higher in their self-evaluation scores as swimmers when compared to females but this difference was limited to the 18 years and over age category at the National level of ability and at the Provincial level of ability for the 13 - 14 years age group. For Factor II (the potency component, "me as a swimmer"), males had a higher regard for their potential than females. However, tests of significance failed to shed any further light on the matter. For Factor III (the activity component, "me as a swimmer"), males scored higher than females in the case of the 18 years and over age category at the National level of ability and at the Provincial and Club levels of ability for the 13 - 14 years age group.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Summary

Although there is statistical support for the four hypotheses, it is nonetheless relatively smaller than expected. It is certainly difficult to draw decisive or clear cut conclusions from the analyses that can be generalised in any way. At best this study study illustrated tendencies among the different variables examined that are similar in many instances to those trends expressed in the review of literature. Some reasons for the lack of psychologically important conclusions may rest with the obvious measurement inadequacies associated with this kind of research, although efforts were made to overcome these problems. Also difficulties became apparent around the formation of exclusive ability and age categories. The findings are sufficiently important to have some impact upon the practicalities of swimming coaching and should eventually be incorporated into coaching theory.

Table 43 is a convenient summary of the findings following the univariate analyses for each of the variables. However, it should be pointed out that the summary contains reference to relative comparisons. The reader is cautioned not to take words like higher or lower to be indicative of absolute magnitude.

Table 43. Summary of Findings Following the Univariate Analyses

General locus of control:	While both males and females appeared internal, males possessed higher levels of internality than females. Younger swimmers tended to be less internal than older swimmers.
Specific locus of control:	Males swimmers were significantly more internal than females, but only in the case of the 18 years and over age group.
Global self-esteem:	While both males and females displayed high levels of self-esteem, male swimmers scored higher on global self-esteem than females and the scores increased as a function of ability.
Specific self-esteem:	Male swimmers possessed higher levels of specific self-esteem than females across all age groups and the three levels of ability.
Faith in others:	Female swimmers were more trusting of others than males. Male swimmers were found to be significantly less trusting than females especially at the Club level of ability.
Faith in coach:	Female swimmers possessed more faith in coach compared to males and the lower the levels of ability the greater the trust.
Competitive A-trait:	Female swimmers were higher in competitive A-trait when compared to males. The higher the level of ability the lower the scores in competitive A-trait.
Semantic differential: -	(measure of self-concept) "me as a person"
Factor I (the evaluative component)	Male swimmers scored higher than females on Factor I especially for the 13-14 years age group at the Provincial level of ability.
Factor II (the potency component)	Male swimmers scored higher on Factor II compared to females.
Factor III (the activity component)	Male swimmers scored higher on Factor III compared to females but this difference was limited to the 13-14 years age group at the Club level of ability.
Sementic differential: -	(measure of self-concept) "me as a swimmer"
Factor I (the evaluative component)	Male swimmers scored higher on Factor I compared to females but this sex difference was confined to the 18 years and over age category at the National level of ability and to the 13-14 years age group at the Provincial level of ability.
Factor II (the potency component)	Males swimmers scored higher on Factor II compared to females, and this appeared to be true across the three levels of ability.
Factor III (the activity component)	Male swimmers scored higher than females on Factor III, and this was true for the 18 years and over age category at the National level of ability, and for the 13-14 years age group at the Provincial and Club levels of ability.

B. Some problems related to this research

In the course of conducting this study, some problems came to light which may have indirectly influenced the research outcomes. In the first place, the age categories selected were those normally used in a competitive swimming setting and this is an advantage when comparing age and ability against standardised performance charts. However, in this study a two year span may have been too large a time frame and possibly served to conceal differences in the variables as a function of age. In follow-up research it may be better to limit the age categories to yearly intervals commencing at 10 years of age and progressing to a maximum of twenty four years, which is representative of the competitive life span of the swimmer. In the second place, it was difficult to distinguish the lower ability categories (Provincial and Club) nationwise strictly according to qualifying standards. The time standards for one province were not the same as those of another. This discrepancy more than likely confounded the data as a function of ability. It was also possible for the borderline swimmers to fluctuate from one ability category to another during the season. Finally, problems surrounding the measurement of the variables were in evidence. Although many techniques have been used to measure the multi-dimensional elements of self-esteem, the review of measures outlined earlier has revealed a lack of integration between a coherent theoretical framework and corresponding measurement

operations. In this study, while recognizing the multi-faceted nature of the construct, it was important to attempt to include global measures as well as measures more narrowly defined as specific self-esteem related to competitive swimming. It is difficult to assess the success of this strategy and obviously more work is required to develop a precise and specific measure. Rosenberg (1979) pointed to the relevance of measuring specific self-esteem and concludes that it is specific self-attitudes that are more likely to predict specific behaviors. The question whether self-esteem can predict behavior or not is an interesting one for the coach. It has been dealt with inadequately in the research to this point, primarily because of the methodological inadequacies associated with specific self-esteem measures mentioned in Chapter II. It has been suggested recently (Jackson, 1981) that a good way to conceptualize specific self-esteem as a phenomenon with meaning is to examine it through the process of dialogue or by means of the interview technique. The swimmers described a time or performance when they felt really good about themselves. They would then be questioned extensively about similar experiences both past and present in an attempt to build a detailed case history related to performance either in training or competition. It would then be a question of reproducing the best situations to allow for maximum performance. Although this approach is essentially clinical in nature, it does allow the sports psychologist to

establish a particular pattern of meaning associated with specific self-esteem experiences by recognising communalities and differences across competitive situations. It may be possible to establish and recreate sources of self-esteem as they relate to each individual athlete.

It is important in the measure of self-esteem to establish how athletes view themselves as persons and more specifically as competitive swimmers. Upon closer examination of the raw data, it was apparent that discrepancies existed between the scores of the variable - "how I view myself as a person", and "how I view myself as a competitive swimmer". Not only is it desirable to include the semantic differential as a measure of self-concept, but as Morrison (1979) explained, it is also a useful research instrument in those situations where changes in self-esteem are likely to occur. She suggested making a state - trait distinction for self-evaluation. Self-esteem does appear to wax and wane and is determined not only by the feelings, perceptions, attitudes and expectations that athletes have toward themselves, but also by the things that happen to them in different sporting situations. State evaluation would refer to an individual's level of self-regard here and now, while trait evaluation would refer to a more permanent and relatively stable level of self-esteem.

> Each perceived failure or success experience would potentially affect a person's state self-evaluation but may or may not act on the trait self-evaluation depending on such factors as the intensity of the perceived success or failure experience and the number

of such experiences. (Morrison, 1979, 2).

The division of self-esteem into trait and state components similar to those witnessed in the anxiety research, would allow subjects a means of expressing a change in their immediate personal evaluations without altering their long term views about themselves. It would appear that the semantic differential is a useful psychometric instrument and Maul and Pargman (1978) have demonstrated its applicability to behavior research in sport. The semantic differential approach to the measure of specific self-esteem, coupled with the interview technique outlined above, could help the athlete differentiate trait and state evaluations. It is important for the coach and athlete to be sensitive to fluctuations in self-esteem and to realise that these must affect performance outcomes.

C. Some coaching implications

It is necessary for the coach to recognise that self-esteem is a fundamental need and that without an adequate degree of self-regard, the athlete's potential is unlikely to be fulfilled. Consequently, the coach needs a reliable global and specific measure of self-esteem, which accompanied by careful observations of the athlete's behavior in the training and competitive setting, will allow for the building of a meaningful self-esteem management program.

Two important issues emerged from this research. Firstly, upon closer inspection of the raw data, it was remarkable to find a considerable number of top class athletes experiencing extreme levels of self-esteem. While some possessed extremely high levels of global or specific self-esteem others were low. Secondly, following the analyses of the data, differences in the variables were evident as a function of sex, age and ability. In practical terms, there is need for the coach to be aware of and adapt to the fluctuations of self-esteem within each athlete, to devise meaningful self-esteem management programs that will help the athlete deal with extreme degrees of self-esteem, and to assume coaching behaviors that best suit the individual's requirements as determined by sex, age and level of ability.

Low self-esteem can be improved with realistic goal setting; with the critical plotting in the athlete s program of elements of success and failure if necessary; in the structuring of meaningful strategies to help the athlete attain select goals; in the use of self-congratulatory statements following intense efforts; in the improvement of communication skills particularly in the semi-formal interview situation; in the use of interactional influences that can be provided by parents, teachers, assistant coaches and peers; in the processes of cooperative decision making; in the control or suspension of those self-judgements or evaluations that are made prior to or during performance;

and in the process of selective attention to those appropriate cues that enhance performance outcomes rather than destroy them.

Similarly, too high levels of self-esteem might be adjusted by a carefully designed program which clarifies for the athlete that he or she possesses excessive levels of confidence; by exposing the athlete to more appropriate competition; by mentally replaying or recreating a previous bad performance along with its' consequences; by re-evaluating goals and strategies to provide greater challenges and by simply communicating with the athlete the need to possess optimum levels of self-esteem that will guarantee a successful performance.

It is also critical for the coach to show sensitivity to the construct of self-esteem by adopting very positive attitudes and behaviors towards each athlete. Though this research revealed only subtle differences in self-esteem as a function of sex, age and ability, it is nonetheless important for the coach to appreciate and respect them.

Clemes and Bean (1981) point to four conditions that enhance self-esteem. Firstly, the coach must recognize their athletes' sense of connectiveness or their need to be a part of something, to share positive feelings with them and to recognize their self-importance. Secondly, there must be recognition for the athletes' sense of uniqueness or of their need to feel very special and to express themselves in unique ways. Thirdly, a sense of power in self-control will

encourage athletes to seek new challenging goals, targets and strategies, to make decisions, fulfil responsibilities and to be in command of themselves. Finally, a sense of models or the possibility to emulate great performers will allow athletes to adopt meaningful beliefs, values and attitudes. These will guide their behavior particularly in stressful situations. Often it is the coach who is the most important model for the athlete.

D. Some directions for future research

After identifying high or low self-esteem levels in an athlete through valid and accurate measuring techniques, it would be valuable to apply a tailor-made self-esteem management program over a period of time and observe its' effects upon performance outcomes. An experimental approach would certainly yield interesting results, providing the environment in which the program is to be presented is acceptable along with the knowledge and integrity of the person implementing the program.

A second direction is to develop and validate sport specific measures of self-esteem as a fluctuating state, where operationally it is more likely to interfere with athletic performance. In making use of the semantic differential as a measure of self-concept, it is possible to detect - as was the case in this research - marked differences between the variable "me as a person" and "me as a swimmer" across the evaluative, potency and activity

factors. It would be worthwhile to make use of an index (self-discrepancies or D scores) in which the difference between the way athletes view themselves as persons and as swimmers is calculated. The question whether these differences appear as a function of sex, age and ability could then be scientifically pursued. When self-esteem and self-concept are mutually supportive then a person will act decisively and responsibly.

Finally, three categories of swimmer can be identified - the sprinter, the middle-distance swimmer, and the distance swimmer. It would be a worthwhile research project to direct attention to these categories and re-evaluate self-esteem and the other related variables to ascertain the existence of any differences as a consequence of event specialisation.

Everyone has the potential to be a better athlete but they tend to limit themselves in the fulfillment of this potential by restraining their beliefs, values and attitudes. The way persons mentally regard themselves or the extent to which they allow themselves to be programmed, will affect performance in negative or positive ways. What athletes think they are capable of doing is what they are likely to do. For optimum performance it is critical that the athlete develops a sense of personal worth and personal efficacy because self-esteem is a major influence upon behavior. Most behavior is motivated by people's desire to feel good about themselves. The coach must communicate to

each athlete that they are worthy and significant individuals and that, in order to safeguard performance, certain behaviors are expected of them. Failure to recognize the importance of an athlete's self-esteem may result in unrealistic expectations or simply not being in tune with the athlete's needs.

"Out of the strain of doing,
and into the peace of the done."

Julia Woodruff

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APPENDICES

APPENDIX 1. Questionnaire Booklet

JMH/CASA/PSY. 1981.
UNIVERSITY OF ALBERTA.

CANADIAN AMATEUR SWIMMING ASSOCIATION

CASA-SEA FORM A.

Instructions

The following 9 Questionnaires are intended to help us appreciate how you feel about yourself in general and as a competitive swimmer, and eventually to help us improve our coaching methods.

There are no right or wrong answers. Try to be as accurate as possible, but work quickly because first impressions are important.

Carefully read the instructions that appear before each questionnaire and answer all questions.

Also provided is a RESPONSE SHEET. Please match up the RESPONSE SHEET to the Questionnaire Booklet and blacken out your responses to each statement for each questionnaire using the pencil provided. If you change your mind about a response, be sure to carefully erase that response before blackening out a revised response. There should only be one response for each statement.

Please do not mark the QUESTIONNAIRE BOOKLET - only the RESPONSE SHEET.

Before you start with the questionnaire booklet overleaf, please fill in the details requested on the COMPETITIVE SWIMMING PROFILE FORM provided, and also complete the information requested at the beginning of the RESPONSE SHEET.

RESEARCH & PLANNING COMMITTEE
1980-1984.

Questionnaire # 1

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered (a) or (b). Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned.

Please answer all these items carefully but do not spend too much time on any one item. This is a measure of personal belief; obviously there are no right or wrong answers.

Remember

Select that alternative which you personally believe to be more true. Please blacken out the appropriate circle on the response sheet.

I more strongly believe that:

1. ——a. Children get into trouble because their parents punish them too much.
   ——b. The trouble with most children nowadays is that their parents are too easy with them.

2. ——a. Many of the unhappy things in people's lives are partly due to bad luck.
   ——b. People's misfortunes result from the mistakes they make.

3. ——a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   ——b. There will always be wars, no matter how hard people try to prevent them.

4. ——a. In the long run people get the respect they deserve in this world.
   ——b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. ——a. The idea that teachers are unfair to students is nonsense.
   ——b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. ——a. Without the right breaks one cannot be an effective leader.
   ——b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. ——a. No matter how hard you try some people just don't like you.
   ——b. People who can't get others to like them don't understand how to get along with others.

8. ——a. Heredity plays the major role in determining one's personality.
   ——b. It is one's experiences in life which determine what they're like.

9. ——a. I have often found that what is going to happen will happen.
   ——b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. ——a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    ——b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. ——a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
    ——b. Getting a good job depends mainly on being in the right place at the right time.

12. ——a. The average citizen can have an influence in government decisions.
    ——b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. ——a. When I make plans, I am almost certain that I can make them work.
    ——b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. ——a. There are certain people who are just no good.
    ——b. There is some good in everybody.

15. ——a. In my case getting what I want has little or nothing to do with luck.
    ——b. Many times we might just as well decide what to do by flipping a coin.

16. ——a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    ——b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

17. ——a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
    ——b. By taking an active part in political and social affairs the people can control world events.

18. ——a. Most people can't realize the extent to which their lives are controlled by accidental happenings.
    ——b. There really is no such thing as "luck".

19. ——a. One should always be willing to admit ones mistakes.
    ——b. It is usually best to cover up one's mistakes.

20. ——a. It is hard to know whether or not a person really likes you.
    ——b. How many friends you have depends upon how nice a person you are.

21. ——a. In the long run the bad things that happen to us are balanced by the good ones.
    ——b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. ——a. With enough effort we can wipe out political corruption.
——b. It is difficult for people to have much control over the things politicians do in office.

23. ——a. Sometimes I can't understand how teachers arrive at the grades they give.
——b. There is a direct connection between how hard I study and the grades I get.

24. ——a. A good leader expects people to decide for themselves what they should do.
——b. A good leader makes it clear to everybody what their jobs are.

25. ——a. Many times I feel that I have little influence over the things that happen to me.
——b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. ——a. People are lonely because they don't try to be friendly.
——b. There's not much use in trying too hard to please people; if they like you, they like you.

27. ——a. There is too much emphasis on athletics in school.
——b. Team sports are an excellent way to build character.

28. ——a. What happens to me is my own doing.
——b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. ——a. Most of the time I can't understand why politicians behave the way they do.
——b. In the long run the people are responsible for bad government on a national as well as on a local level.

Questionnaire # 2

Please blacken out (SA) (A) (D) (SD) on the response sheet provided to indicate how you feel about yourself as a person. It is important that you answer each question as accurately as you can. Do not spend too much time in deciding your estimation.

	(SA) Strongly agree	(A) Agree	(D) Disagree	(SD) Strongly disagree
1. I feel that I'm a person of worth, at least on an equal plane with others.				
2. All in all, I am inclined to feel that I'm a failure				
3. I feel that I have a number of good qualities				
4. I am able to do things as well as most other people				
5. I feel I do not have much to be proud of				
6. I take a positive attitude toward myself				
7. On the whole, I am satisfied with myself				
8. I wish I could have more repect for myself.				
9. I certainly feel useless at times				
10. At times I think I am no good at all				

Questionnaire # 3

Please blacken out your response on the response sheet provided and answer all five questions.

1. Some people say that most people can be trusted. Others say you can't be too careful in your dealings with people. How do you feel about it?

   a —— Most people can be trusted

   b —— You can't be too careful

2. Would you say that most people are more inclined to help others, or more inclined to look out for themselves? How do you feel about it?

   a —— To help others

   b —— To look out for themselves

3. If you don't watch yourself, people will take advantage of you.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

4. No one is going to care much what happens to you, when you get right down to it.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

5. Human nature is fundamentally cooperative.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

Questionnaire # 4

We want to know how you feel about swimming competition. Below are a few statements about how persons feel when they compete in sports and games. Read each statement carefully and decide if you (HE) HARDLY EVER or (S) SOMETIMES or (O) OFTEN feel this way when you compete in swimming. Depending on your feelings blacken the circle on the response sheet either HE S O that best describes your feelings about each statement. There are no right or wrong answers. Do not spend too much time on any one statement. Remember choose the word that best describes how you usually feel when competing in swimming.

	HARDLY EVER	SOMETIMES	OFTEN
1. Competing against others is fun.	___	___	___
2. Before I compete I feel uneasy.	___	___	___
3. Before I compete I worry about performing well.	___	___	___
4. I am a good sportsman when I compete.	___	___	___
5. When I compete I worry about making mistakes.	___	___	___
6. Before I compete I am calm.	___	___	___
7. Setting a goal is important when competing.	___	___	___
8. Before I compete I get a funny feeling in my stomach.	___	___	___
9. Just before competing I notice my heart beats faster than usual.	___	___	___
10. I like rough games.	___	___	___
11. Before I compete I feel relaxed.	___	___	___
12. Before I compete I am nervous.	___	___	___
13. Team sports are more exciting than individual sports.	___	___	___
14. I get nervous wanting to start my swimming race.	___	___	___
15. Before I compete I usually get up-tight.	___	___	___

Questionnaire # 5

Please blacken out your response on the response sheet provided and answer all five questions.

1. Some people say that most coaches can be trusted. Others say you can't be too careful in your dealings with the coaching staff.
   How do you feel about it?

   a —— Most coaches can be trusted

   b —— You can't be too careful

2. Some coaches are coaching simply because they want to help swimmers do well, while others are more inclined to be in it for themselves.
   How do you feel about it?

   a —— to help others

   b —— to look out for themselves

3. If you are not careful some swim coaches will take advantage of you.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

4. When you get right down to it, no swim coach is totally caring about what really happens to you.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

5. Generally speaking the coaching staff are cooperative.
   Do you agree or disagree?

   —— (a) Agree —— (b) Disagree

Questionnaire # 6

Please blacken out (SA) (A) (D) (SD) on the response sheet provided to indicate how you feel about yourself as a competitive swimmer. It is important that you answer each question as accurately as you can. Do not spend too much time in deciding your estimation.

	(SA) Strongly agree	(A) Agree	(D) Disagree	(SD) Strongly disagree
1. I feel that I'm a competitive swimmer of worth and as skilfull as other swimmers				
2. In swimming terms I am inclined to think that I am a failure				
3. I feel that I possess some good qualities that help my swimming performance				
4. I can swim just as well as most other competitors				
5. My swimming performances do not leave me too much to be proud of				
6. I take a positive attitude towards myself as a competitive swimmer				
7. On the whole, I am satisfied with my success in competitive swimming				
8. I wish I could have more respect for myself as a competitive swimmer				
9. I certainly feel that my swimming performances are useless sometimes				
10. At times I think I am no good at all as a swimmer				

Questionnaire # 7

This questionnaire aims to find out the way in which certain swimming events personally affect different competitors. Each item consists of a pair of alternative statements lettered a or b. Please select either a or b for each item depending on which statement you believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true.

Please blacken out a or b on the response sheet provided depending on your personal beliefs.

1. ——a. Swimmers swim badly because their parents push them too much
   ——b. The trouble with most swimmers is that their parents are too easy with them.

2. ——a. Many of my poor performances in swimming are partly due to bad luck.
   ——b. My poor performances are simply the result of the silly mistakes I make.

3. ——a. One of the major reasons why [illegible] problems or confrontations in competitive [illegible] is simply because not enough people are [illegible] in working in harmony.
   ——b. There will always be problems or confrontations in swimming, no matter how hard [illegible] try to prevent them.

4. ——a. In the long run I will get the respect I deserve as a competitive swimmer.
   ——b. Unfortunately, my true worth as a performer may go unrecognized no matter how hard I try.

5. ——a. The idea that coaches are unfair to swimmers is nonsense.
   ——b. Most swimmers don't realize the extent to which their swimming success is influenced by accidental things.

6. ——a. If things don't go right for me it is very difficult for me to be an effective leader either in training or in competition.
   ——b. Capable swimmers who fail to become leaders usually have not taken advantage of their opportunities.

7. ——a. No matter how hard I try some swimmers just don't like me.
   ——b. Swimmers who fail to get other swimmers to like them don't understand how to get along with others.

8. ——a. Heredity or my genetic make up plays a major role in determining how good I am at competitive swimming.
   ——b. It is one's training and competitive experiences that determine performance outcomes

9. ——a. I have often found that there is nothing I can do to prevent me from performing in a certain way.
   ——b. I have never been successful trusting my performance preparations to fate compared to making definite decisions about what I need to do.

10. ——a. A well prepared swimmer will rarely if ever experience such a thing as an unfair race or competition.
——b. Sometimes performance results tend to be so unrelated that it seems pointless to do so much intensive training.

11. ——a. Becoming successful in swimming is a matter of hard work - luck has little or nothing to do with it.
——b. Obtaining a good performance depends mainly on being in the right program, with the right coach, at the right time.

12. ——a. The average swimmer can exercise some influence on National swimming decision making.
——b. The Swimming Association is run by a few people in power and there is not much I can do about it.

13. ——a. When I design race plans or strategies I am almost certain I can make them work.
——b. It is not always wise for me to plan too far ahead since most things turn out to be a matter of good or bad fortune anyhow.

14. ——a. There are some coaches who are just no good.
——b. There is some good in every coach.

15. ——a. In my case achieving target times has little or nothing to do with luck.
——b. Sometimes I might just as well concede victory than go to the trouble of swimming the race too hard.

16. ——a. Who gets to be the leader or captain depends on who was lucky enough to be in the right place first.
——b. Getting myself to swim well depends on my ability; luck has little or nothing to do with it.

17. ——a. As far as breaking swimming records are concerned, most swimmers are the victims of forces that they neither understand, nor control.
——b. By attempting to lead and be actively involved in competitive swimming, I can be in complete control of my performance outcomes.

18. ——a. Most swimmers don't realize the extent to which their performances are controlled by accidental happenings.
——b. There is really no such thing as luck in competition.

19. ——a. a swimmer should always be quick to admit his or her mistakes or shortcomings.
——b. It is usually best to hide as many of one's weaknesses as possible.

20. ——a. It is not easy to know whether other swimmers really like me or not.
——b. How you get on with other swimmers depends on how nice a person you really are.

21. ——a. Overall the unfortunate experiences that occur in competitive swimming are balanced out by the good ones.
——b. Most misfortunes in swimming are the result of inability or ignorance or laziness or all three.

22. ——a. My good performances occur partly due to good luck.
——b. My poor performances occur partly due to bad luck.

23. ——a. Sometimes I find it difficult to understand why the coach selects certain swimmers for certain events the way he/she does.
——b. There is a direct connection between how specifically I train and the events I am selected to swim in.

24. ——a. A good swim team captain will encourage swimmers to decide for themselves what they should do.
——b. A good swim team captain will make it clear to all team members what their roles and responsibilities are.

25. ——a. There will always be times when I perform badly no matter how hard I try.
——b. If I really apply myself well I can be successful.

26. ——a. Some swimmers are lonely simply because they don't try to be friendly.
——b. There is little point trying too hard to please swimmers and coaching staff - if they like you, they like you.

27. ——a. Swimmers perform badly simply because coaches are not sufficiently up to date in current methods of training.
——b. Swimmers are successful because their coaches are very knowledgeable.

28. ——a. How I perform is really up to me.
——b. Sometimes I feel that I don't have enough control over the direction my swimming is taking me.

29. ——a. Sometimes I can't understand why officials behave the way they do.
——b. In the long run it is the swimmers who are responsible for bad management at a national as well as at a local level.

Directions for Questionnaire #8 and Questionnaire #9

The purpose of the next two questionnaires is to assess the feelings you have about yourself by having you judge yourself against a series of descriptive scales. In #8 and #9 you will find two different concepts or things to be judged and on the response sheet a set of scales numbered

① ② ③ ④ ⑤ ⑥ ⑦

If you feel that the concept is very closely related to one end of the scale or the other then you would blacken out either the ① or the ⑦. If you feel that it is only slightly related then you would blacken out depending on the strength of your feelings, ② or ③ or ⑤ or ⑥. If you felt the concept to be neutral (both sides of the scale equally associated with the concept) OR if the scale is completely irrelevant or unrelated then you would blacken out ④

Remember, only one number should be blackened out on each scale and be sure to blacken out a number for each scale.

Questionnaire # 8

Generally speaking when I think of myself I feel that I am:

1. quick	① ② ③ ④ ⑤ ⑥ ⑦	slow
2. beautiful	① ② ③ ④ ⑤ ⑥ ⑦	ugly
3. weak	① ② ③ ④ ⑤ ⑥ ⑦	strong
4. worthless	① ② ③ ④ ⑤ ⑥ ⑦	valuable
5. active	① ② ③ ④ ⑤ ⑥ ⑦	passive
6. small	① ② ③ ④ ⑤ ⑥ ⑦	large
7. bad	① ② ③ ④ ⑤ ⑥ ⑦	good
8. brave	① ② ③ ④ ⑤ ⑥ ⑦	cowardly
9. tense	① ② ③ ④ ⑤ ⑥ ⑦	relaxed

Questionnaire #9

When I think about myself as a competitive swimmer I feel that I am:

1. quick	① ② ③ ④ ⑤ ⑥ ⑦	slow
2. beautiful	① ② ③ ④ ⑤ ⑥ ⑦	ugly
3. weak	① ② ③ ④ ⑤ ⑥ ⑦	strong
4. worthless	① ② ③ ④ ⑤ ⑥ ⑦	valuable
5. active	① ② ③ ④ ⑤ ⑥ ⑦	passive
6. small	① ② ③ ④ ⑤ ⑥ ⑦	large
7. bad	① ② ③ ④ ⑤ ⑥ ⑦	good
8. brave	① ② ③ ④ ⑤ ⑥ ⑦	cowardly
9. tense	① ② ③ ④ ⑤ ⑥ ⑦	relaxed

APPENDIX 2

COMPETITIVE SWIMMING PROFILE

Please complete the following profile information very carefully. Either circle or tick the appropriate boxes as they apply to you. Print clearly.

NAME: _____ DATE OF BIRTH: _____ AGE: _____

ADDRESS: _____ PLACE OF BIRTH: _____

_____ POSTAL CODE: _____ PHONE: ( ) _____

If not at school please state occupation: _____

OCCUPATION OF PARENTS FATHER: _____

MOTHER: _____

NUMBER OF CHILDREN IN FAMILY
1 2 3 4 5 6 7 8 ___

STATE YOUR ORDER OF BIRTH
1 2 3 4 5 6 7 8 ___

RELIGIOUS AFFILIATION: _____

NAME OF SCHOOL: _____

ELEMENTARY ☐
JUNIOR HIGH ☐
HIGH SCHOOL ☐

JUNIOR COLLEGE ☐
TECHNICAL SCHOOL ☐
PRIVATE SCHOOL ☐

STATE WHETHER YOU ARE A WINTER CLUB SWIMMER ☐ OR A SUMMER CLUB SWIMMER ☐

DID YOU START YOUR COMPETITIVE SWIMMING AS A SUMMER CLUB SWIMMER ☐ WINTER CLUB SWIMMER ☐
YOUTH ORGANIZATION SWIMMER ☐ SCHOOL SWIMMER ☐

STATE NUMBER OF YEARS IN SUMMER CLUB SWIMMING_____. NUMBER OF YEARS IN WINTER CLUB SWIMM[redacted]

NAME OF PRESENT SWIM CLUB: _____ CLUB COACH: _____

LIST THE SWIM CLUBS WHERE YOU HAVE PREVIOUSLY BEEN A MEMBER AND YEARS OF MEMBERSHIP.

CLUB: _____ CITY: _____ FROM: _____ TO: _____

CLUB: _____ CITY: _____ FROM: _____ TO: _____

CLUB: _____ CITY: _____ FROM: _____ TO: _____

SWIMMING EVENTS AND TIMES : STATE BEST (3) EVENT (S) AND TIMES

BEST EVENT 1 _____ BEST TIME Short Course _____ yr. _____ Long Course _____ yr. _____

BEST EVENT 2 _____ BEST TIME Short Course _____ yr. _____ Long Course _____ yr. _____

BEST EVENT 3 _____ BEST TIME Short Course _____ yr. _____ Long Course _____ yr. _____

IN THE PREVIOUS SEASON [WHETHER LONG COURSE (L.C.) OR SHORT COURSE (S.C.)] IF YOU WERE RANKED IN THE TOP TEN TAG RANKINGS PLEASE LIST THE EVENT (S), TIME (S) AND AGE CATEGORY.

1. EVENT _____ TIME S.C. _____ L.C. _____ AGE CATEGORY _____
2. EVENT _____ TIME S.C. _____ L.C. _____ AGE CATEGORY _____
3. EVENT _____ TIME S.C. _____ L.C. _____ AGE CATEGORY _____
4. EVENT _____ TIME S.C. _____ L.C. _____ AGE CATEGORY _____

APPENDIX 3

RESPONSE SHEET

Name: _____ Club: _____

Sex (M=Male, F=Female) (M) (F)
Grade (5) (6) (7) (8) (9) (10) (11) (12) (13)
University Year (1) (2) (3) (4) (5) (6)
How do you rate yourself?
1=Sprinter
2=Middle Distance Swimmer
3=Distance Swimmer (1) (2) (3)
Are you presently a summer or winter club swimmer?
SC=Summer Club
WC=Winter Club (SC) (WC)

Swimming Ability
1=National Team (1)
2=National Qualifier (2)
3=CIAU Qualifier (3)
4=Division 2 Qualifier (4)
5=Provincial Qualifier (5)
6=Regional Qualifier (6)
7=Club Swimmer (7)

Current Age Group
1=18 Yrs+O (1)
2=15-17 Yrs (2)
3=13-14 Yrs (3)
4=11-12 Yrs (4)
5=10 Yrs+U (5)

Quest. 1	
1.	A B
2.	A B
3.	A B
4.	A B
5.	A B
6.	A B
7.	A B
8.	A B
9.	A B
10.	A B
11.	A B
12.	A B
13.	A B
14.	A B
15.	A B
16.	A B
17.	A B
18.	A B
19.	A B
20.	A B
21.	A B
22.	A B
23.	A B
24.	A B
25.	A B
26.	A B
27.	A B
28.	A B
29.	A B

Quest. 2				
1.	SA	A	D	SD
2.	SA	A	D	SD
3.	SA	A	D	SD
4.	SA	A	D	SD
5.	SA	A	D	SD
6.	SA	A	D	SD
7.	SA	A	D	SD
8.	SA	A	D	SD
9.	SA	A	D	SD
10.	SA	A	D	SD

Quest. 3	
1.	A B
2.	A B
3.	A B
4.	A B
5.	A B

Quest. 4			
1.	HE	S	O
2.	HE	S	O
3.	HE	S	O
4.	HE	S	O
5.	HE	S	O
6.	HE	S	O
7.	HE	S	O
8.	HE	S	O
9.	HE	S	O
10.	HE	S	O
11.	HE	S	O
12.	HE	S	O
13.	HE	S	O
14.	HE	S	O
15.	HE	S	O

Quest. 5	
1.	A B
2.	A B
3.	A B
4.	A B
5.	A B

Quest. 6				
1.	SA	A	D	SD
2.	SA	A	D	SD
3.	SA	A	D	SD
4.	SA	A	D	SD
5.	SA	A	D	SD
6.	SA	A	D	SD
7.	SA	A	D	SD
8.	SA	A	D	SD
9.	SA	A	D	SD
10.	SA	A	D	SD

Quest. 7	
1.	A B
2.	A B
3.	A B
4.	A B
5.	A B
6.	A B
7.	A B
8.	A B
9.	A B
10.	A B
11.	A B
12.	A B
13.	A B
14.	A B
15.	A B
16.	A B
17.	A B
18.	A B
19.	A B
20.	A B
21.	A B
22.	A B
23.	A B
24.	A B
25.	A B
26.	A B
27.	A B
28.	A B
29.	A B

Quest. 8			
1.	quick	1 2 3 4 5 6 7	slow
2.	beautiful	1 2 3 4 5 6 7	ugly
3.	weak	1 2 3 4 5 6 7	strong
4.	worthless	1 2 3 4 5 6 7	valuable
5.	active	1 2 3 4 5 6 7	passive
6.	small	1 2 3 4 5 6 7	large
7.	bad	1 2 3 4 5 6 7	good
8.	brave	1 2 3 4 5 6 7	cowardly
9.	tense	1 2 3 4 5 6 7	relaxed

Quest. 9			
1.	quick	1 2 3 4 5 6 7	slow
2.	beautiful	1 2 3 4 5 6 7	ugly
3.	weak	1 2 3 4 5 6 7	strong
4.	worthless	1 2 3 4 5 6 7	valuable
5.	active	1 2 3 4 5 6 7	passive
6.	small	1 2 3 4 5 6 7	large
7.	bad	1 2 3 4 5 6 7	good
8.	brave	1 2 3 4 5 6 7	cowardly
9.	tense	1 2 3 4 5 6 7	relaxed

APPENDIX 4

Department of Athletic Services
Faculty of Physical Education
University of Alberta
EDMONTON, Alberta T6G 2H9
(403) 432-5910

Dear Coach:

CASA Psychological Tests, 1981.

I am inviting you to take part in the CASA's National Testing Program and enclose for you some test booklets, profile forms and response sheets for your swimmers. As you are aware this national program is intended to identify talent and to advise coaches on the physiological and psychological aspects. This series of psychological tests is aimed to tease out information on each swimmers' global and athletic self-esteem, locus of control, faith in others and competitive trait anxiety and the relationships that might exist among these variables as a function of sex, age and level of performance. Such information will have important bearing on coaching behaviors. However, in order to obtain accurate measures it is necessary to create the best possible conditions for presenting the test battery. These instructions are listed briefly and I would urge you to observe them as best as you can.

- The test is to be given to all swimmers - irrespective of ability - 12 years and over. However, no one should be forced to do it against their will.
- The test should be conducted in a quiet and comfortable area - preferably a classroom. Swimmers should not be distracted or talk to one another once the test is underway. Encourage all swimmers to undertake the test seriously.
- The coach should explain the nature of the test by reading the instructions printed on the front cover of the booklet or test battery and insuring that everyone is clear.
- Adequate time should be allocated to the test which takes about 20 - 30 minutes to complete. An hour should be ample but the swimmer should not be rushed.
- The response sheet should be used to answer each question in the test battery. A soft pencil (not ball point or ink, please) should be used to cover the appropriate circle. In each item only one response should appear.
- The test is best conducted on small groups of 25 swimmers at a time. First fill out the Profile Form as accurately as possible before starting with the test battery.

Once the test is completed please return all the booklets, profile forms and response sheets to me as soon as possible - unless otherwise agreed. It is going to take a little time to get the information back to you at this stage. However, once the measures are available these will be given to you along with some suggestions where necessary.

Please get all the material back to me as soon as you can at the above address and then it can be processed. If there are any difficulties please don't hesitate to contact me. I shall be telephoning you to make sure all the conditions can be met. Many thanks for your help and cooperation.

Yours sincerely,

John M. Hogg

John M. Hogg
Research and Development Committee, C.A.S.A.
Head Swim Coach, University of Alberta

APPENDIX 5 Descriptive Statistics For Male Swimmers According To Ability

ABILITY LEVELS	NATIONAL ABILITY				PROVINCIAL ABILITY				CLUB LEVEL			
SEX - MALE	18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs	18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs	18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs
LOCUS OF CONTROL	X= 14.48 SD= 3.63 N= 58	15.55 3.47 N=31	12.43 2.70 N=7		14.89 3.69 N=19	14.42 3.64 N=55	13.37 3.67 N=67	13.28 3.14 N=32	14.20 5.24 N=10	15.15 3.91 N=13	13.08 3.26 N=12	13.93 3.45 N=15
GLOBAL SELF-ESTEEM	X= 34.14 SD= 3.73	33.35 3.70	31.57 3.21		32.37 2.83	31.69 4.44	31.55 3.56	31.94 3.68	33.40 3.86	33.46 4.53	32.08 4.68	31.00 3.70
FAITH IN OTHERS	X= 2.69 SD= 1.27	2.81 1.33	3.14 1.95		3.21 0.85	2.80 1.14	2.45 1.34	2.69 1.20	2.50 1.51	2.85 1.34	1.75 0.96	2.47 0.64
COMPETITIVE ANXIETY	X= 21.22 SD= 4.20	21.42 4.46	19.00 6.00		23.37 4.32	21.42 4.21	22.00 4.32	21.78 3.88	25.90 3.38	19.77 4.51	22.42 4.62	22.53 3.44
FAITH IN COACH	X= 4.07 SD= 1.20	4.48 0.99	4.00 0.82		4.37 0.76	4.18 1.09	4.07 1.21	4.28 1.05	4.30 0.82	4.85 0.37	4.58 0.66	4.20 1.32
SPECIFIC SELF-ESTEEM	X= 33.12 SD= 4.40	33.61 4.02	34.28 4.64		28.89 2.70	30.56 4.65	31.70 4.52	31.66 4.28	27.70 6.72	30.08 4.87	29.17 6.66	30.20 3.69
SPECIFIC LOCUS OF CONTROL	X= 17.67 SD= 3.01	17.39 2.74	14.14 3.53		17.37 2.91	16.24 3.35	15.92 3.16	15.06 3.14	16.90 4.07	16.38 2.87	16.42 2.87	14.87 2.72
SEMANTIC DIFFERENTIAL: ME AS A PERSON												
FACTOR I	X= 17.27 SD= 2.12	16.39 2.35	18.71 2.29		16.10 1.85	15.80 2.53	16.19 2.20	16.37 2.46	16.90 2.13	16.69 2.93	16.42 2.54	14.80 2.18
FACTOR II	X= 17.05 SD= 2.22	16.00 3.15	18.57 2.15		14.95 2.63	15.44 2.59	15.61 2.83	15.72 3.24	15.80 1.87	16.69 2.02	15.92 1.78	15.27 3.26
FACTOR III	X= 14.71 SD= 2.13	14.32 2.44	14.57 2.15		14.31 2.00	13.82 2.75	15.10 2.56	15.37 2.86	15.80 1.69	13.54 2.26	13.67 2.67	14.67 2.32
SEMANTIC DIFFERENTIAL: ME AS A COMPETITIVE SWIMMER												
FACTOR I	X= 17.40 SD= 2.08	17.13 2.20	18.14 2.61		14.42 2.39	15.54 2.48	16.16 2.65	16.56 2.85	14.50 3.03	15.00 3.32	13.50 5.55	16.33 1.71
FACTOR II	X= 17.02 SD= 2.36	16.32 3.41	18.86 1.77		14.63 2.19	15.20 2.55	16.07 2.97	16.56 2.84	13.50 3.03	15.38 2.69	14.08 4.50	15.20 3.65
FACTOR III	X= 15.03 SD= 2.18	15.26 1.81	15.57 2.15		14.63 2.24	14.13 2.71	15.98 2.81	15.84 2.93	13.50 2.32	13.31 1.65	12.42 2.87	15.33 3.15

APPENDIX 6 Descriptive Statistics For Male Swimmers According To Age

MALE WINTER CLUB SWIMMERS	LOCUS OF CONTROL	GLOBAL SELF-ESTEEM	FAITH IN OTHERS	COMPETITIVE ANXIETY	FAITH IN COACH	SPECIFIC SELF-ESTEEM	SPECIFIC LOCUS OF CONTROL		SELF - ESTEEM AS A PERSON			SELF - ESTEEM AS A SWIMMER		
									I	II	III	I	II	III
TOTAL WINTER CLUB SWIMMERS N=701	X = 13.79	31.64	2.80	22.35	4.35	30.75	16.01	X=	15.76	15.33	14.51	15.40	15.16	14.82
	SD = 3.49	4.05	1.16	4.39	0.98	4.71	3.17	SD=	2.44	2.72	2.37	2.80	2.97	2.56
	VAR = 12.21	16.40	1.35	19.26	0.96	22.19	10.03	VAR=	5.97	7.38	5.61	7.86	8.82	6.55
MALE SWIMMERS TOTAL N=319	X = 14.22	32.44	2.66	21.77	4.23	31.48	16.42	X=	16.39	15.96	14.59	16.10	15.92	14.96
	SD = 3.63	3.92	1.25	4.32	1.08	4.72	3.21	SD=	2.38	2.74	2.50	2.84	3.00	2.66
	VAR = 13.18	15.38	1.56	18.66	1.16	22.31	10.30	VAR=	5.65	7.51	6.24	8.04	8.98	7.10
MALE SWIMMERS 18 & O N=87	X = 14.54	33.67	2.78	22.23	4.16	31.57	17.52	X=	16.98	16.45	14.75	16.41	16.09	14.77
	SD = 3.81	3.60	1.23	4.40	1.07	4.90	3.09	SD=	2.10	2.42	2.07	2.64	2.74	2.23
	VAR = 14.51	12.99	1.52	19.36	1.16	24.06	9.58	VAR=	4.42	5.88	4.31	6.99	7.50	4.99
MALE SWIMMERS 15-17 YRS N=99	X = 14.87	32.44	2.81	21.20	4.36	31.45	16.62	X=	16.10	15.78	13.94	15.97	15.57	14.37
	SD = 3.62	4.28	1.22	4.32	1.01	4.69	3.13	SD=	2.52	2.72	2.59	2.62	2.88	2.41
	VAR = 13.13	18.29	1.48	18.69	1.03	21.96	9.79	VAR=	6.38	7.42	6.69	6.87	8.29	5.81
MALE SWIMMERS 13-14 YRS N=86	X = 13.53	31.63	2.40	21.81	4.14	31.56	15.85	X=	16.43	15.89	14.86	15.95	16.02	15.45
	SD = 3.54	3.66	1.37	4.53	1.13	4.96	3.18	SD=	2.31	2.76	2.57	3.35	3.30	3.01
	VAR = 12.51	13.44	1.89	20.51	1.27	24.58	10.01	VAR=	5.45	7.62	6.59	11.20	10.89	9.05
MALE SWIMMERS 11-12 YRS N=47	X = 13.49	31.64	2.62	22.02	4.25	31.18	15.00	X=	15.87	15.57	15.15	16.04	16.13	15.68
	SD = 3.22	3.67	1.05	3.73	1.13	4.11	2.98	SD=	2.46	3.22	2.69	2.64	3.14	2.98
	VAR = 10.38	13.50	1.11	13.89	1.28	16.94	8.91	VAR=	6.07	10.38	8.18	6.95	9.90	8.87

APPENDIX 7 Description Statistics For Female Swimmers According To Ability

ABILITY LEVELS		NATIONAL ABILITY				PROVINCIAL ABILITY				CLUB LEVEL			
SEX - FEMALE		18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs	18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs	18 yrs & O	15-17 yrs	13-14 yrs	11-12 yrs
LOCUS OF CONTROL	X=	12.38	14.10	13.92	18.00	12.91	13.71	13.63	13.31	14.42	14.70	13.32	12.27
	SD=	3.20	3.49	4.11	2.83	3.21	3.48	3.21	2.70	2.85	3.38	3.76	3.06
	N=	47	N=52	N=25	N=2	N=11	N=28	N=78	N=45	N=19	N=10	N=28	N=37
GLOBAL SELF-ESTEEM	X=	32.59	32.17	32.44	33.50	32.27	29.64	30.40	30.22	30.05	29.00	31.43	29.51
	SD=	4.39	3.01	4.28	4.95	5.42	2.78	4.48	3.35	4.58	3.13	3.97	3.73
FAITH IN OTHERS	X=	2.89	2.83	2.96	3.50	3.27	2.78	2.86	2.89	2.63	3.50	3.18	2.84
	SD=	1.18	1.20	1.13	0.71	1.19	0.92	1.08	0.91	1.17	1.08	0.90	1.09
COMPETITIVE ANXIETY	X=	22.15	22.23	21.56	16.50	24.27	23.03	23.10	22.42	24.95	26.90	23.68	22.38
	SD=	3.30	4.53	4.21	4.95	4.29	4.14	4.23	4.77	4.22	2.38	5.22	4.54
FAITH IN COACH	X=	4.53	4.40	4.08	4.50	4.45	4.36	4.51	4.35	4.42	4.40	4.75	4.49
	SD=	0.72	0.99	0.10	0.71	0.93	0.99	0.89	0.91	0.90	0.97	0.58	0.80
SPECIFIC SELF-ESTEEM	X=	31.30	32.13	32.90	33.50	28.73	28.25	29.88	30.38	25.58	26.40	29.78	29.54
	SD=	5.16	3.77	4.95	6.36	6.00	3.18	4.82	3.10	4.25	4.25	4.47	3.79
SPECIFIC LOCUS OF CONTROL	X=	15.53	16.96	16.44	21.00	15.64	15.43	15.91	14.53	16.26	15.20	14.89	14.76
	SD=	2.88	2.64	3.30	1.41	4.57	3.37	2.91	3.17	3.30	3.08	2.83	2.67
SEMANTIC DIFFERENTIAL: ME AS A PERSON													
FACTOR I	X=	16.30	16.25	15.16	15.50	16.00	14.57	14.97	15.00	15.10	12.70	14.82	14.65
	SD=	2.26	2.13	2.82	3.53	2.32	1.91	2.29	2.31	2.08	3.00	1.78	2.56
FACTOR II	X=	15.59	16.29	15.56	17.00	14.82	14.75	14.60	14.58	13.84	15.00	14.68	13.76
	SD=	2.35	2.61	3.14	4.24	1.17	2.35	2.32	2.91	2.97	2.31	2.68	2.36
FACTOR III	X=	14.62	14.58	14.40	13.00	14.91	13.86	14.85	14.09	13.47	14.30	15.18	14.11
	SD=	2.52	2.11	1.94	4.24	3.27	2.17	2.32	1.92	2.67	2.16	1.68	2.21
SEMANTIC DIFFERENTIAL: ME AS A COMPETITIVE SWIMMER													
FACTOR I	X=	15.77	16.04	16.00	16.00	14.91	14.36	14.54	15.20	12.68	12.30	13.78	13.97
	SD=	2.89	2.27	2.96	4.24	2.38	2.47	2.38	2.48	2.33	2.87	2.78	2.09
FACTOR II	X=	15.28	15.21	15.56	17.00	13.91	14.00	14.46	14.69	12.42	13.90	14.03	13.97
	SD=	2.85	2.71	3.32	4.24	2.66	2.90	2.62	2.43	2.19	2.68	1.72	2.55
FACTOR III	X=	14.94	15.17	15.72	13.50	14.46	14.50	14.79	14.82	12.89	13.60	15.15	13.97
	SD=	2.60	2.17	2.05	2.12	3.44	2.15	2.43	2.16	2.84	2.32	2.15	2.80

APPENDIX 8 Descriptive Statistics For Female Swimmers According To Age

FEMALE WINTER CLUB SWIMMERS	LOCUS OF CONTROL	GLOBAL SELF-ESTEEM	FAITH IN OTHERS	COMPETITIVE ANXIETY	FAITH IN COACH	SPECIFIC SELF-ESTEEM	SPECIFIC LOCUS OF CONTROL		SELF - ESTEEM AS A PERSON I	II	III	SELF - ESTEEM AS A SWIMMER I	II	III
TOTAL WINTER CLUB SWIMMERS N=701	X = 13.79	31.64	2.80	22.35	4.35	30.75	16.01	X=	15.76	15.33	14.51	15.60	15.16	14.82
	SD = 3.49	4.05	1.16	4.39	0.98	4.71	3.17	SD=	2.44	2.72	2.37	2.80	2.97	2.56
	VAR = 12.21	16.40	1.35	19.26	0.96	22.19	10.03	VAR=	5.97	7.38	5.61	7.86	8.82	6.55
FEMALE SWIMMERS TOTAL N=382	X = 13.44	30.97	2.90	22.84	4.45	30.14	15.67	X=	15.24	14.80	14.45	14.81	14.53	14.71
	SD = 3.34	4.04	1.07	4.39	0.88	4.62	3.09	SD=	2.38	2.58	2.25	2.68	2.80	2.46
	VAR = 11.16	16.32	1.16	19.29	0.77	21.34	9.57	VAR=	5.65	6.67	5.08	6.97	7.82	6.07
FEMALE SWIMMERS 18 YRS & O N=77	X = 12.96	31.92	2.88	23.14	4.49	29.52	15.73	X=	15.96	15.05	14.38	14.88	14.38	14.35
	SD = 3.20	4.65	1.17	3.85	0.79	5.57	3.23	SD=	2.26	2.48	2.69	2.96	2.91	2.88
	VAR = 10.22	21.65	1.37	14.83	0.62	31.04	10.44	VAR=	5.09	6.18	7.24	8.79	8.47	8.31
FEMALE SWIMMERS 15-17 YRS N=90	X = 14.04	31.03	2.89	23.00	4.39	30.29	16.29	X=	15.35	15.09	14.32	15.10	14.69	14.79
	SD = 3.47	3.22	1.17	4.42	0.98	4.24	3.01	SD=	2.44	2.48	2.13	2.69	2.82	2.22
	VAR = 12.04	10.37	1.24	19.57	0.99	18.03	9.04	VAR=	5.96	6.17	4.56	7.21	7.95	4.93
FEMALE SWIMMERS 13-14 YRS N=131	X = 13.62	31.00	2.95	22.93	4.48	30.44	15.79	X=	14.98	14.80	14.83	14.66	14.58	15.04
	SD = 3.50	4.38	1.05	4.47	0.88	4.89	2.99	SD=	2.29	2.58	2.11	2.56	2.89	2.32
	VAR = 12.22	19.22	1.11	20.03	0.77	23.88	10.92	VAR=	5.27	6.64	4.54	6.56	8.37	5.37
FEMALE SWIMMERS 11-12 YRS N=84	X = 12.96	29.99	2.88	22.26	4.42	30.08	14.78	X=	14.86	14.27	14.07	14.68	14.43	14.42
	SD = 2.99	3.47	0.99	4.70	0.85	3.50	3.07	SD=	2.42	2.74	2.07	2.40	2.54	2.48
	VAR = 8.93	12.04	0.97	22.12	0.73	12.27	9.42	VAR=	5.86	7.53	4.31	5.79	6.46	6.17

APPENDIX 9

TABLE OF CONFIDENCE INTERVALS AROUND THE MEANS OF THE DEPENDENT VARIABLES

	MALES			FEMALES		
General Locus of Control	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY
18 & Over	13.53-15.44	13.11-16.67	10.44-17.95	11.44-13.32	10.75-15.07	13.05-15.80
15-17 yrs	14.28-16.82	13.43-15.40	12.79-17.52	13.12-15.07	12.39-15.03	11.96-17.44
13-14 yrs	9.93-14.92	12.84-14.63	11.01-15.15	12.22-15.62	12.90-14.35	11.86-14.78
11-12 yrs		12.15-14.41	12.02-15.85		12.50-14.14	11.25-13.29
Specific Locus of Control						
18 & Over	16.88-18.46	15.97-18.77	13.99-19.81	14.69-16.38	12.56-18.70	14.67-17.85
15-17 yrs	16.38-18.39	15.33-17.14	14.64-18.12	16.23-17.70	14.12-16.74	12.99-17.41
13-14 yrs	10.87-17.41	15.15-16.70	14.59-18.24	15.08-17.80	15.25-16.57	13.79-15.99
11-12 yrs		13.93-16.19	13.36-16.37		13.58-15.49	13.87-15.65
Global Self-Esteem						
18 & Over	33.16-35.12	31.00-33.73	30.64-36.16	31.31-33.89	28.63-35.92	27.85-32.26
15-17 yrs	32.00-34.71	30.49-32.89	30.72-36.20	31.33-33.01	28.57-30.72	26.76-31.24
13-14 yrs	28.60-34.54	30.68-32.42	29.11-35.06	30.67-34.21	29.39-31.41	29.89-32.97
11-12 yrs		30.61-33.26	28.95-33.05		29.27-31.17	28.27-30.76
Specific Self-Esteem						
18 & Over	31.96-34.28	27.59-30.20	22.89-32.50	29.78-32.81	24.69-32.76	23.53-27.63
15-17 yrs	32.14-35.09	29.31-31.82	27.13-33.02	31.07-33.18	27.02-29.48	23.36-29.44
13-14 yrs	29.99-38.58	30.60-32.80	24.94-33.40	30.88-34.96	28.80-30.97	28.05-31.52
11-12 yrs		30.11-33.20	28.16-32.24		29.45-31.31	28.28-30.80
Faith in Others						
18 & Over	2.35-3.02	2.80-3.62	1.42-3.58	2.56-3.24	2.47-4.07	2.09-3.17
15-17 yrs	2.32-3.29	2.49-3.11	2.03-3.66	2.49-3.16	2.43-3.14	2.73-4.27
13-14 yrs	1.34-4.95	2.12-2.77	1.14-2.36	2.49-3.43	2.62-3.10	2.83-3.53
11-12 yrs		2.25-3.12	2.11-2.82		2.61-3.16	2.47-3.20

APPENDIX 9 (Cont.)

	MALES			FEMALES		
Faith in Coach	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY
18 & Over	3.75-4.38	4.00-4.71	3.71-4.89	4.32-4.47	3.83-5.08	3.99-4.86
15-17 yrs	4.12-4.85	3.89-4.48	4.62-5.07	4.13-4.68	3.97-4.74	3.71-5.09
13-14 yrs	3.24-4.75	3.78-4.37	4.16-5.00	3.67-4.49	4.31-4.71	4.32-4.98
11-12 yrs		3.90-4.66	3.47-4.93		4.08-4.63	4.22-4.75
Competitive Anxiety						
18 & Over	20.12-22.33	21.28-25.45	23.48-28.32	21.18-23.12	21.39-27.16	22.91-26.98
15-17 yrs	19.78-23.06	20.28-22.56	17.04-22.50	20.97-23.49	21.43-24.64	25.20-28.60
13-14 yrs	13.45-24.55	20.95-23.05	19.48-25.35	19.82-23.30	22.15-24.06	21.65-25.78
11-12 yrs		20.38-23.18	20.63-24.44		20.98-23.86	20.87-23.89
ME: AS A PERSON						
18 & Over	16.72-17.63	15.21-17.00	15.37-18.42	15.63-16.96	14.44-17.56	14.67-17.85
I 15-17 yrs	15.52-17.25	15.12-16.48	14.92-18.46	15.66-16.84	13.83-15.31	10.75-15.04
13-14 yrs	16.60-20.83	15.65-16.73	14.80-18.03	13.99-16.33	14.46-15.49	14.13-15.51
11-12 yrs		15.49-17.26	13.59-16.01		14.31-15.69	13.79-15.50
ME: AS A SWIMMER						
18 & Over	16.85-17.94	13.27-15.57	12.33-16.67	14.92-16.61	13.31-16.51	11.56-13.81
I 15-17 yrs	16.32-17.94	14.88-16.21	13.00-17.00	15.40-16.67	13.40-15.31	10.25-14.35
13-14 yrs	15.73-20.56	15.52-16.81	9.97-17.03	14.78-17.22	14.00-15.07	12.90-14.67
11-12 yrs		15.53-17.59	13.99-15.88		14.45-15.95	13.28-14.67
ME: AS A PERSON						
18 & Over	16.47-17.63	13.67-16.22	14.46-17.14	14.90-16.29	14.03-15.60	12.41-15.27
II 15-17 yrs	14.48-17.16	14.47-16.14	15.47-17.91	14.56-16.01	13.83-15.66	13.35-16.65
13-14 yrs	16.58-20.56	14.92-16.30	14.78-17.05	14.26-16.85	14.08-15.13	13.64-15.72
11-12 yrs		14.55-16.89	13.46-17.07		13.70-15.46	12.97-14.54

APPENDIX 9 (Cont.)

	MALES			FEMALES		
ME: AS A SWIMMER	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY	NATIONAL ABILITY	PROVINCIAL ABILITY	CLUB ABILITY
18 & Over	16.85-17.94	13.57-15.69	11.33-15.67	14.44-16.11	12.12-15.70	11.36-13.48
II 15-17 yrs	15.07-17.57	14.51-15.89	13.76-17.01	14.45-15.97	12.87-15.13	11.98-15.82
13-14 yrs	17.22-20.50	15.35-16.80	11.22-16.94	14.19-16.93	13.87-15.05	12.83-15.25
11-12 yrs		15.54-17.59	13.18-17.22		13.96-15.42	13.12-14.82
ME: AS A PERSON						
18&Over	14.15-15.27	13.35-15.28	14.59-17.01	13.88-15.36	12.71-17.11	12.18-14.76
III 15-17yrs	13.42-15.22	13.07-14.56	12.17-14.90	13.99-15.16	13.01-14.70	12.75-15.85
13-14yrs	12.58-16.56	14.48-15.73	11.96-15.37	13.60-15.20	14.32-15.37	14.53-15.83
11-12yrs		14.34-16.41	13.38-15.95		13.51-14.66	13.37-14.84
ME: AS A SWIMMER						
18&Over	14.46-15.61	13.55-15.71	11.84-15.16	14.17-15.70	12.05-16.68	11.52-14.26
III 15-17yrs	14.59-15.92	13.39-14.86	12.31-14.31	14.57-15.78	13.67-15.33	11.94-15.26
13-14yrs	13.58-17.56	15.30-16.67	10.59-14.24	14.87-16.57	14.25-15.34	14.31-15.98
11-12yrs		14.79-16.90	13.59-17.08		14.17-15.47	13.03-14.91

APPENDIX 10 PRINCIPAL-FACTOR MATRIX UNROTATED ALONG WITH THE APPROPRIATE EIGENVALUES

		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	COMMUNALITY
SEX		-0.275	0.063	0.121	0.061	-0.123	0.113
ABILITY		-0.366	0.124	0.027	0.337	0.204	0.305
AGE		-0.207	0.398	-0.047	0.773	0.074	0.808
GENERAL LOCUS		0.296	-0.354	0.423	0.131	0.281	0.489
GLOBAL SELF-ESTEEM		0.668	-0.198	0.085	0.091	-0.189	0.537
FAITH IN OTHERS		0.039	-0.112	0.272	0.095	-0.124	0.112
COMPETITIVE ANXIETY		-0.240	0.284	-0.244	-0.220	0.168	0.274
FAITH IN COACH		0.002	-0.149	0.313	0.162	-0.102	0.157
SPECIFIC SELF-ESTEEM		0.730	-0.047	0.080	0.242	-0.368	0.737
SPECIFIC LOCUS		0.405	-0.422	0.400	0.058	0.280	0.584
SELF AS PERSON	I	0.724	-0.011	-0.053	-0.030	0.031	0.529
	II	0.675	0.073	-0.300	-0.033	[illegible]	0.647
	III	0.283	0.524	0.297	-0.130	[illegible]	0.460
SELF AS SWIMMER	I	0.815	0.088	-0.103	0.034	[illegible]	0.695
	II	0.767	0.134	-0.320	0.074	[illegible]	0.755
	III	0.424	0.701	0.388	-0.141	[illegible]	0.842
EIGENVALUES		4.038	1.435	1.047	0.931	0.[illegible]	