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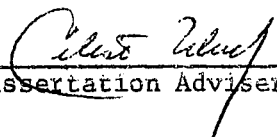
A STUDY OF THE EFFECT OF SELECTED BIOLOGICAL,
PSYCHOLOGICAL, AND SOCIOLOGICAL FACTORS
ON THE LEARNING RATE OF THE NEGRO
MALE BEGINNING SWIMMER

by
Annie A. Vanderstok

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The University of North Carolina at Greensboro
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of the Requirements for the Degree
Doctor of Education

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Approved by


Dissertation Adviser

This Dissertation is dedicated to
my Grandfather, Johannes Paulus van der Stok
1851-1934

APPROVAL SHEET

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VANDERSTOK, ANNIE ALETTA. A study of the Effect of Selected Biological, Psychological, and Sociological Factors on the Learning Rate of the Negro Male Beginning Swimmer. (1970) Directed by: Dr. C. Ulrich. pp. 138

This study, conducted at the University of North Carolina at Greensboro, during the spring of 1970, investigated selected biological, psychological, and sociological factors on the learning rate of the Negro male beginning swimmer.

Thirty-seven Negro male freshmen enrolled at North Carolina Agricultural and Technical State University, Greensboro, North Carolina, served as subjects for the study. The biological factor was limited to the floating ability of the subject as measured by the turtle-prone float combination. The sociological factors focused on the individual's level of aspiration and certain family and environmental background data. The psychological factor of general anxiety was measured by the IPAT-8-Parallel Form Anxiety Battery, and a ten point fear rating scale, developed by the investigator for this study.

An initial period was used for preliminary tests which included a questionnaire on previous swimming experience, family background, and swimming preference, as well as an initial measurement on the anxiety and level of aspiration of the subject. Following this initial meeting, there were five weeks of instruction during which the front crawl was taught according to the American National Red Cross Instructor's Manual. During the first period in the water, both the initial fear rating and the subject's floating potential were recorded. Classes met twice a week for thirty minutes each. Performance improvement was recorded at the end of the third, fourth, and fifth week by measuring the distance the

subject could swim the front crawl. Each time, just prior to the performance test, the subject stated his level of aspiration in the number of feet he thought he could swim. The expected goal was posted at that time, thirty-five feet for the third week, forty feet for the fourth week, and fifty feet for the fifth and final week. The anxiety measure was repeated at the beginning of the fourth week and again after the final performance, using different but parallel forms of the IPAT battery. During the entire five week instructional period a chart was kept indicating the number of times each subject practiced outside of class time. After the last performance, a final questionnaire was administered, attempting to evaluate the subject's reactions to an exploratory swimming course of this nature.

All statistical results were reported as to significance at the .05 level. Analyses of variance and correlation were the statistical techniques employed. All computations were made through the use of the computer center at the University of North Carolina at Greensboro, North Carolina.

A descriptive analysis was used to describe the sample in terms of sociological factors such as previous swimming experience, family background and desire to learn to swim. A graphic presentation was included to show the relationship between selected sociological factors, as well as a pictorial presentation of the swimming improvement over the five week period.

Conclusions

1. The majority of the subjects learned to swim the front crawl, fifty feet or more, in a five week period.

2. Floating ability did not seem to have an effect on the rate of learning the front crawl.
3. Differences in anxiety did not show a statistically significant effect upon the learning rate of the subject.
4. Fear seemed to be an important aspect of the learning rate. As fear diminished, the swimming performance improved.
5. Level of aspiration was found to be a highly significant indicator of future performance in swimming the front crawl.
6. The group that learned to swim the front crawl for a minimum of fifty feet, seemed to have more previous experience, were willing to practice, and showed a slight preference of swimming over other activities.
7. Other sociological factors such as family education, size of family, parents living at home, ability of family and friends to swim, and encouragement received, did not show any consistent pattern in regard to the learning rate of the beginning Negro male swimmer.

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Grateful acknowledgment is made to the many persons who made this study possible. The writer is especially indebted to Dr. Celeste Ulrich for her continued interest and support, as well as her excellent guidance during the conduct of the study.

The writer would like to express her sincere appreciation to the members of the doctoral committee, who have willingly given of their time and have made innumerable helpful suggestions.

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The freshman students at A & T State University were the subjects of this study, and the writer would like to especially thank this group of young men for their honest and wholehearted participation in the project.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
CHAPTER	
I INTRODUCTION.	1
Statement of the Problem	2
Statement of the Sub-Problems.	3
Definition of Terms.	4
Delimitations.	5
II REVIEW OF THE LITERATURE.	7
Aquatics	7
Anxiety.	16
Level of Aspiration.	27
Summary.	34
III PROCEDURES.	37
Preliminary.	37
Selection of Subjects.	38
Selection and Development of Tests	39
Two Pilot Studies.	43
Collection of Data	49
Statistical Design	54
IV ANALYSIS AND DISCUSSION OF DATA	59
Analysis	59
Biological	59

CHAPTER	Page
Psychological	62
Sociological.	84
Learning Rate in Swimming	99
V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.	106
Summary	106
Conclusions	110
Recommendations	111
BIBLIOGRAPHY	114
APPENDIXES	
Appendix A.	122
Appendix B.	127
Appendix C.	135
Appendix D.	137

LIST OF TABLES

TABLE	Page	
I	Means and Standard Deviations of Two Groups, Floaters, Sinkers, and the Total Group, Over Three Swimming Performances in Feet.	59
II	One-way Analysis of Variance on Three Swimming Performance Tests Comparing Floaters Versus Sinkers.	60
III	Two-way Analysis of Variance on Three Swimming Performance Tests, Comparing Floaters Versus Sinkers	61
IV	Low, Medium, and High Anxiety Rating Groupings in Number of Subjects Per Group.	63
V	Means and Standard Deviations of Three Groups, Low, Medium, and High Anxiety, Over Three Swimming Performances Measured in Feet for Floaters, Sinkers, and the Total Group.	64
VI	Two-way Analysis of Variance on Three Swimming Performance Tests, Comparing Low, Medium, and High Anxiety Groups. .	65
VII	Three-way Analysis of Variance on Three Swimming Performance Tests Comparing Low, Medium, and High Anxiety Groups, and Floaters and Sinkers.	66
VIII	High, Realistic, and Low Initial Level of Aspiration Groupings in Number of Subjects Per Group.	69
IX	Number of Subjects Per Group with High, Realistic and Low Level of Aspiration Corresponding to First, Second, and Third Swimming Performance Tests.	70
X	Means and Standard Deviations of Low, Realistic, and High Level of Aspiration on the Final Swimming Performance, Measured in Feet, for Floaters, Sinkers, and the Total Group.	71
XI	Means and Standard Deviations of Three Groups, Low, Realistic and High Level of Aspiration Over the Three Corresponding Swimming Performances, Measured in Feet, for Floaters, Sinkers, and the Total Group	72
XII	Analysis of Variance, Comparing Final Swimming Performance When Grouped According to Initial Level of Aspiration. . .	73

TABLE	Page	
XIII	Analysis of Variance on Three Swimming Performance Tests, Using First, Second, and Third Level of Aspiration Groups.	74
XIV	Three-way Analysis of Variance on Three Swimming Performance Tests Comparing Low, Realistic, and High Level of Aspiration Groups and Floaters and Sinkers	76
XV	Means and Standard Deviations on Front Crawl Swimming Performance, Elementary Back-Stroke, Anxiety, Observable Fear, Practice, Preference and Initial and Average Level of Aspiration.	80
XVI	Correlation Matrix for Twelve Variables Pearson-Product-Moment Correlation	82
XVII	Sociological Factors for the Total Group.	85

LIST OF FIGURES

Figure		Page
1	Sociological Factors Total Group	86
2	Sociological Factors Grouped According to Performance. . . .	88
3	Sociological Factors Grouped According to Anxiety.	92
4	Sociological Factors Grouped According to Initial Level of Aspiration	96
5	Swimming Improvement--Front Crawl for Individual Subjects According to Third Week Swimming Performance.	100
6	Swimming Improvement--Front Crawl for Individual Subjects According to Final Swimming Performance	101

CHAPTER I

INTRODUCTION

The techniques and skills used in teaching physical education involve a wide variety of activities, including sports, games, gymnastics, dance and aquatics.

Research regarding the effective ways to teach techniques and skills has been concentrated, to a large extent, in the concepts of mechanics and methodology. As a result, in the teaching-learning situation, there has been limited source material available. There has been a paucity of material on the effects of behavioral patterns on the teaching-learning experience. Not until recently has there been a renewed research interest in the behavioral bases of physical education.

We know a little about how man moves, but we do not know about why man moves, or why he does not move. This study proposes to look into some limited aspects of the question, "why man moves". The movement medium selected is the area of aquatics. The biological factor investigated will be concerned with floating ability. The socio-psychological factors studied will be concerned with the concepts of "level of aspiration", "anxiety", and "sociological background". The teaching-learning variable will be the learning rate. The population analyzed will be the Negro male beginning swimmer.

Some data are available on the analysis of swimming strokes, on what makes a "champion swimmer", and on the functional and structural components of the swimmer. Relatively little research has been reported in the area of beginning swimming, taking into account the total individual and the interrelationship of his physical, psychological and sociological selves. As more information regarding beginning swimming is amassed, additional insights into teaching methodology may develop, based on the socio-psychological aspects of the student, as well as his physical make-up.

Because the Negro subculture in the United States has provided limited opportunity to become exposed to the aquatic medium, it seems important to study an all-Negro population. If any inferences can be suggested from the findings of this study, it would be hoped that these inferences might be meaningful for the current Negro subculture which, at long last, is being provided with the opportunity to learn to swim.

With so much current emphasis on the "culturally deprived", it is hoped that this study will stimulate more research in the aquatic area for any student who, for various reasons, never has had the opportunity to develop his swimming potential.

Statement of the Problem

The purpose of this study is to discover the relative effects of anxiety, level of aspiration, and selected sociological background factors on the length of time it takes a Negro male beginning swimmer, with and without floating ability, to learn to swim.

Statement of the Sub-Problems

The sub-problems are divided into four areas.

- I. Biological--To differentiate between high floaters and low floaters with respect to their learning rate in swimming.
- II. Psychological--To investigate the effect anxiety has on the learning rate of the Negro male beginning swimmer, with and without initial floating ability.

To investigate the effect level of aspiration has on the learning rate of the Negro male beginning swimmer, with and without initial floating ability.

To investigate if there is a relationship between anxiety and level of aspiration in the Negro male beginning swimmer.

To gain insight into the possible relationship between general anxiety and specific fear of the water.
- III. Sociological--To gain insight with regard to selected sociological factors and the learning rate in the Negro male beginning swimmer.

To gain insight into the possible relationship among level of aspiration, willingness to practice, and preference of swimming as an activity in the light of the student's sociological background.

To gain insight into the possible relationship

between the sociological background and anxiety, as related to the learning rate in swimming, for the Negro male.

To gain insight into the relationship between the sociological background and level of aspiration as related to the learning rate in swimming, for the Negro male.

Definition of Terms

Anxiety--A construct indicating a predisposition to respond with apprehension in a variety of situations. (Levitt, 1967)

Beginning swimmer--A subject who cannot propel himself through the water for a distance of twenty feet without putting his feet on the bottom.

Buoyancy--The tendency of a subject to float, if the amount of water displaced by the subject while fully submerged is equal to the weight of the subject. (Broer, 1960)

Fear--Awareness of a threatening situation (in this case, water).

Floating ability--

High--Initial floating ability of a subject, as measured by the turtle float, where any part of the body shows above water.

Low--Initial floating ability of a subject, as measured by the turtle float, where no part of the body shows above water.

None--The subject who will not attempt the turtle float

position.

Learning rate--The increase in distance, measured in feet, the subject can swim the front crawl and the elementary backstroke over a period of five weeks.

Level of aspiration--The setting of a goal, in terms of distance in feet the subject can swim a particular stroke, given the expected distance he should be able to swim.

(Singer, 1968)

Practice--

High--Eight or more sessions of one-half hour each, over and above class time.

Low-- Seven or less sessions a week, of one-half hour each, over and above class time.

Preference--Swimming chosen as a first, second, or third choice from a list of available activities.

Sociological Background Factors--

Family: Family members living at home
Parents' occupation
Parents' education
Family swimming ability

Subject: Previous opportunity
Previous instruction
Encouragement received
Swimming ability of peer group
Boating experience
Subjective statement on "fear of water"

Delimitations

The main focus of this study is on the effect of anxiety and level of aspiration on the learning rate of the Negro male beginning

swimmer, with and without floating ability. A secondary focus of the study is on the relationship between selected sociological factors and the learning rate of the Negro male beginning swimmer.

The subjects are chosen from North Carolina Agricultural and Technical State University, Greensboro, North Carolina. Only Negro male beginning swimmers were included.

The learning rate was restricted to progress in two swimming strokes--the front crawl and the elementary backstroke. This progress was measured over a period of five weeks. Instruction was limited to two class sessions per week.

CHAPTER II

REVIEW OF LITERATURE

Aquatics

Swimming, as an activity, has long been recognized as having a variety of values to the individual participating in this sport. From the biological point of view, the survival and safety aspects are undeniable; from a specific physical fitness viewpoint, it is generally considered one of the best all around activities available (Cureton, 1940). The sociological proponents of swimming point toward the values to be derived from swimming as a leisure-time activity, advantages inherent in family or small-group participation, and the subsequent positive personal interrelations which may result from participation in a wholesome activity. The psychological point of view emphasizes the individual growth that may accompany the learning of a new skill, the greater self-esteem and enhanced self-concept that can come from the satisfaction of achievement and accomplishment of a goal.

A quick review of the necessity of swimming for the human being in the American culture may be in order. Gabrielson (1968, pp. 11-14) has summarized some facts and figures on drowning in the United States. The leading age groups in drowning in 1949 was from 15-24 years, with a total of 1,400; the second highest number of drownings

(1,215) occurred with the 5-14 year-old group. The number of males drowning was considerably higher than the females. A hopeful note can be detected in the data covering fifty years, where, percentage-wise, as well as in total numbers, there has been a steady decline in the number of drownings reported.

The most frequent locations of accidents are lakes and rivers. Causes of drowning (as far as are known) seem to indicate three major areas: (1) swimming alone, or with a friend who is unable to assist; (2) non-swimmers in a boat; and (3) children left unattended. Recreational swimming has the largest accident incidence. Gabrielson reported (1968, p. 15) that the ratio of white people drowning vs. non-white is 5.5 to 1. He made the additional comment that in Southern states, where the proportion of Negroes is high, the number of drownings is about even between white and non-white. He concluded that swimming instruction can prevent drownings.

"Public Recreation and the Negro," a 1968 study by Kraus, revealed some pertinent information on the Negro swimmer participation in urban areas, primarily New York, New Jersey and Connecticut. Swimming is reported seventh in percentage of activity participation, while boxing, track and field, and basketball all rate higher in attracting Negro participants.

The place of swimming near the top of those activities in which Negroes participate comes as a surprise to those who are familiar with the competitive aspects of this sport. There are few Negro competitive swimmers; college and other amateur swimming meets rarely have Negro participants. Why, then, is there such a high percentage of Negro involvement in swimming in public recreation? The answer, according to the recreation directors, is two-fold. Unlike white participants, who tend to have other opportunities for swimming (family mobility, private swimming club or pool, day

camp, etc.), the Negro child or youth must often depend on the use of a public pool or beach. By the same token, swimming tends to be the area of physical activity in which whites are most sensitive to Negro participation--as evidenced in many incidents of racial disturbance in the Southern and border states. Thus, in a number of communities examined in this study, the recreation director reported that whites, in effect, have abandoned the use of public swimming pools to Negroes. One recreation director commented that the public swimming pool in his community was known colloquially among many whites as 'the inkwell.' In other communities with fairly large numbers of Negro residents, where public swimming pools had not been built in the past, it became apparent in discussions with the recreation director that the reason for this situation was that the city or town board expected that a public pool would be used exclusively or heavily by Negroes (because of white withdrawal). The board thus was unwilling to finance the building of a public pool.

The pattern of whites 'abandoning' a public pool to Negroes once it becomes used by over a certain percentage of them is not an invariable reaction. Both in New York City and in suburban and nearby county park and recreation programs, there are examples of pools that continue to be used by substantial proportions of both whites and Negroes. At the same time, it is also apparent that some of the admissions policies restricting the use of a pool to residents, which are followed by some suburban departments, have come about as a consequence of protests by local residents against 'outsiders' using 'their' facilities. In some instances, at least, such policies appear to have had a racial basis. (p. 42)

On the negative side, the decade of the 1960's has seen considerable violence. On the positive side, however, some progress has been made. Today YMCA's and Boys' Clubs all over the country have integrated swimming programs for all youngsters. Many communities have made an honest effort to open their recreation centers regardless of race, creed, or religion. The Negro youngster today does have an equal opportunity to join the American National Red Cross swimming programs in almost all cities across the United States. In the long run this will produce results. If Negro youngsters learn to swim at an earlier age, many more will be able to advance to the point where they will qualify for life-guard and water safety instructor positions,

and if the present integration trend continues, they will be needed and employed in pools, beaches, and as waterfront counselors in the very near future. The catching-up progress is very much in evidence today.

In the area of physical education, most textbooks on kinesiology and related areas give an excellent picture of the laws inherent in movement in a medium different from the one we usually move in; i.e., water. Wells (1960) stated that water provides support for the body as well as the resistance necessary to propel the body forward. The support of the body in water depends on Archimedes' principle, in that a body submerged in water will be buoyed up by a force equal to the weight of the water it displaces. This fact has led to the term "specific gravity." Cooper-Glassow (1963) gave the formula for specific gravity in terms of the ratio between body weight and the weight of the equal amount of water displaced. Because of the density aspect (salt water having a heavier density than fresh water, and, therefore slightly heavier), the upward force experienced by a swimmer in the ocean is greater than the one in a swimming pool or a lake. The result is often that those who think they float easily, because they learned in the ocean, meet considerable trouble when they first swim in a pool.

Because the weight of the swimmer and the volume of water displaced by the swimmer play such an important role in the physical potential for buoyancy, much research is available on the "body-type" of the potential swimmer. Cureton has used the Sheldon somatotyping and has come to the conclusion that the mesomorphic bodybuild is the one most ideal for swimming. This difference in body-build and, thus,

in potential floating ability seems to have a significant effect on the ability to swim long distance according to Cureton (1930). However, research is not entirely in accord on this. Bloomfield and Sigerseth (1965) were unable to attribute the difference between sprinters and middle-distance swimmers to a difference in floating ability. Broer (1960) reported that males in general are less buoyant than females. Burdeshaw (1966) in her study at Texas found that the Negro female is less buoyant than the white female. Lane and Mitchem (1964) in a study with sixty-nine white and fifty-two Negro subjects (all male) came to the same conclusion. They suggested that different anthropometric measures influenced differences in floating ability. Whiting (1963; 1965) in two consecutive studies, one on females and one on males, concluded that floating ability changes with age. Females on the average are better floaters than males from age thirteen on up, with a peak in floating ability occurring between fifteen and seventeen years of age. This, again, would support the theory of bodybuild playing an important role in potential floating ability.

Because of the apparent influence of floating ability on the learning rate of a beginning swimmer, a number of studies have devised ingenious methods of calculating the upward buoyancy force. Originally the method consisted of simply placing a swimmer in a tank of water, submerging the subject, and measuring the volume of water displaced at full submersion. This amount of water was then weighed, the subject was weighed, and a ratio was calculated. With improvement in modern technology, a more sophisticated means of arriving at a better estimate has been found in the method of "hydrostatic weighing". Behnke, et. al.

(1942), have described this method, which involves the use of a harness which suspends the subject under water. A scale is attached, and while the subject is submerged, a reading can be taken from the scale on the loss of the weight in the water. A follow-up study on this method has been done by Katch (1968) on female college students. This study attempted to obtain a more accurate underwater weight, because the previous studies had some discrepancies in them, due to differences in the amount of air taken in, and relaxation factors. The uniqueness in Katch's study was in the use of a snorkel, so that the subject could maintain a normal rate of breathing. The results still showed fluctuations, but it was concluded that in nine out of ten trials the learning effect stabilized itself, and a true weight under water could be obtained by taking the average of the last three trials. For practical purposes, when exact underwater weight is not the main objective, several good estimates have been obtained of initial floating ability. Harris (1969) used the jelly float, the turtle float, the prone float and the backfloat. She found the turtle float to be a good indicator of potential floating ability. This has been supported by the American National Red Cross (1968) which teaches the turtle float early in the sequence in beginning swimming. Gabrielson and Spears (1968) have found the turtle float to be the best indicator to separate those students who will be sinkers from those who are floaters.

With floating playing such an important role in the future performance of the swimmer, much emphasis has been given to the actual floating position in the water. Differentiation is made among horizontal, vertical, and angled floaters. Cooper-Glassow (1963)

explained the difference in terms of the relative position of the center of buoyancy versus the center of gravity in the human body. If the subject is potentially capable of floating, several adjustments can be made. Raising the arms over head will move the center of gravity closer toward the center of buoyancy (presumed to be in the chest region), and a more horizontal float will result. Differences in the amount of air intake will also affect the position in the water. A greater amount of air intake in the lungs will expand the chest, thus displacing more water by the thorax and chest, making the upper trunk float high, and consequently, showing a tendency for the legs to sink. This results in a more nearly vertical float. The prime position for swimming is the horizontal-streamlined position, according to both Counsilman (1955) and Cureton (1930). In order to make forward progress, advantage should be taken of our present knowledge of mechanical principles. In the front crawl, water resistance is least when moving forward (head first), if the body is in a horizontal position. Speed can be increased, with a minimum amount of force if a streamlined position is maintained. These facts have logically developed out of the physical principles of application of force and the related concept of resistance.

Cooper and Glassow (1963) commented on the greater influence of the arms and hands as they are involved in producing forward propulsion, as compared with the action of the legs. In the case of the vertical floater, part of the forward force in propulsion is lost in the energy necessary to bring the legs up to the surface and assume

the horizontal position necessary for efficient movement through the water. Cureton (1930) originated this observation, and many calculations have been made since then as to the exact amount of force needed to bring and maintain the body in the most advantageous position for swimming (Broer, 1960). Burdeshaw (1968) stressed that with the mounting evidence suggesting that energy is necessary for the vertical floater and the sinker to maintain a horizontal position, that a different methodology in teaching may be warranted. She found a significant difference in the learning rate of the elementary backstroke. (The elementary backstroke is a resting stroke, where during the glide phase of the stroke, the poor floater had to expend energy in order to keep the legs at the surface of the water.) This difference was not observed in the crawl stroke, where a continuous action of the legs in the flutter kick, would keep the body in the required horizontal position. With the evidence available on the different bodybuild of the Negro subject, the problem of overcoming floating deficiencies is now thought to contribute, to some extent, to the slower rate of learning certain swimming strokes by the Negro subject (Burdeshaw, 1968).

A number of studies have been conducted, employing various flotation devices, in order to give the initially poor floater a better starting position in the water. The evidence in this area is conflicting, possibly due to the fact that a finding which holds true for a vertical floater may not have the same effect on an angled floater. Hodapp (1966) in a study with young girls found that

flotation devices produced better results, but not significantly better. McCatty (1968) in a Canadian study, obtained similar results, and did not feel that flotation devices were warranted in the teaching of beginning swimmers. Bruce (1961) in a study employing college women as subjects, found that the learning rate for those students taught without a flotation device was higher than the control group who used a standard flotation device. Kaye (1965), in using a waist-type flotation device and working with male college students, reported a significant difference in favor of the group who did have the benefit of a flotation device required for them to learn to swim. Those using the flotation device learned to swim faster as well as swam further after a certain period of time.

Other factors play a role in swimming knowledge such as the amount of muscular relaxation, the teaching method, as well as the kinds of flotation devices employed. Brown (1966) emphasized the many factors other than floating ability that influence the learning rate of swimming, such as physical and mental adjustment, fear factors, and relaxation aspects. His recommendation was the use of a flotation device, after the student had gone through a mental and physical adjustment period to the water.

Lanoue (1963) is the originator of the drownproofing method. This method is designed to keep oneself afloat in deep water, rather than teaching a specific swimming stroke. Drownproofing is defined as:

A set of simple skills and attitudes to keep yourself alive in deep water. (Lanoue, 1963, p. 13)

The drownproofing has been used equally successfully with nonfloaters

(sinkers) as well as with floaters. A large number of his non-floaters were Negroes. Lanoue's method emphasizes the importance of the body position under water, because the main purpose in drownproofing is to get back to the surface for air, rather than to make horizontal progress and swim for shore. He also denied any racial differences as a determining factor in potential floating ability. He did, however, suggest that the Negro subject floats less well. Lanoue attributed this factor to the environmental socio-economic factors, in that the white boys generally are softer and fatter than their Negro counterparts.

Anxiety

Anxiety is a Janus headed creature that can impel man to self improvement, achievement and competence, or can distort and impoverish his existence and that of his fellows. (Levitt, 1967, p. 200.)

The above quotation of Levitt indicates the complicated construct that anxiety represents in that it has psychological and sociological interpretations. Anxiety has a tremendous impact on learning and, therefore, on teaching. It is an important stimulant or depressant in the area of physical education.

As to what anxiety is, there are a variety of interpretations. Freud's anxiety starts at birth, is therefore instinctive, and as such, of course, cannot be tested experimentally. Because many of the theoretical aspects of Freud's interpretation cannot be subjected to experimental verification, many researchers, without completely refuting Freud, began modifying and/or elaborating on the original concept.

The Neo-Freudians added the socialization aspects of anxiety to the instinctive one. Levitt (1967) subscribed to this point of view when he called anxiety a by-product of the socialization process. Whiting and Child (1953) also leaned toward this terminology when they spoke of socialization anxiety.

A third group of investigators emphasized the learned aspects of anxiety. This group is represented by many experimental psychologists. They stress the belief that man has an innate tendency to avoid pain, and thus, they emphasize most all anxiety as learned behavior.

Over the last few decades, two theories regarding anxiety have become prominent. The Iowa Theory interprets anxiety as a general energizing drive. Spence (1960) called anxiety an acquired drive which can energize the organism. Dollard and Miller (1950) generally subscribed to this same point of view. If a simple stimulus-response situation is in question, this theory explains the nature of anxiety adequately. But, because the human organism is anything but a simple organism, The Iowa Theory has been extended to include complex situations. The more complex situations depend on a hierarchy of the initial strength of the drive. This view, then, emphasizes personal past experience, as well as a strong belief in innate drives. The Yale Theory departs from The Iowa Theory point of view, in that it focuses on the situation itself, as well as on interpersonal relationships. Proponents of this theory are Mandler and Sarason (1952) and Sarason (1960). The learned drive is situational, and thus depends on the task. If we assume that we live in an achievement-conscious

society, then we have to take the total situation in consideration. Atkinson and Litwin (1960) in a study on achievement motive and test anxiety reached the following conclusions: Persons who have a strong need for achievement ~~success~~ prefer a task of intermediate difficulty, show great persistency in working towards a goal, and show more efficiency over persons who have a strong motive to avoid failure. Green (1964) found that high anxious subjects learned faster than low anxious subjects, but the variable of difference in task seemed to play an important role. He warned strongly against the use of anxiety measures, by itself, as an indicator of achievement.

Green felt that tests of anxiety measure general drive and that this drive is primarily learned. Because it is learned, it is manipulable, and of tremendous interest and importance to the educator. Green, in addition, studied the effect of a structured vs. a non-structured situation, and came to the conclusion that high compulsive (or anxious) subjects generally do better in a structured situation. This point of view is accommodated by The Yale Theory in that it points out the importance of the situation, the task involved, as well as the person himself. Mednick (1964) called anxiety one of the most influential motives in a civilized society. The emphasis here is, again on the situational aspect, more complex as civilization, itself, gets more complex. Mednick's views are similar to the classical experiment with "Albert and the rat" done by Watson-Rayner. This experiment originally advanced the notion that drives can be learned. As anxiety is learned in this theory, it can also stimulate new learning, which, in turn, can be directed. Miller (Dollard-Miller, 1950) demonstrated

this in his experiments with rats. Mowrer (1939), also working with animals, showed a positive correlation between anxiety reduction and learning. Ullman (1965), in summing up the evidence, supported the viewpoint that anything which reduces fear will, in turn, reinforce the behavior leading to the reduction of the anxiety.

The famous Yerkes-Dodson law states that fear and learning have a curvilinear relationship (Levitt, 1965, p. 138). The best learning results from a moderate strength drive, and thus moderate level of anxiety. The interrelationship depends on the complexity of the task. The Yale Theory seems to embrace this law better than The Iowa Theory.

Levitt (1967, p. 166) concluded that: Most probably, there are several different "anxious personalities," each comprising different styles, depending largely on developmental influences.

A slightly different explanation of the relationship of anxiety to learning was given by Berelson and Steiner (1964), but arrived at the same conclusion--that a moderate amount of anxiety improves the chances of reaching a pre-set goal. For Berelson and Steiner, anxiety grows out of conflict, and thus, is not innate, but is seen as unavoidable in a modern complex society. When conflict presents itself, frustrations arise in the individual suggesting that a barrier must be overcome. There are three possibilities: (1) the individual can try to go around the barrier; (2) he can attempt to remove the barrier; or, (3) he can try to master it.

This theory has led to the triad of "approach-approach," "approach-avoidance," or "avoidance-avoidance" types of conflict. The goals can be positive or negative. If a choice between two positive

goals has to be made, the individual must make a choice between the two. If a positive and a negative goal are presented at the same time, the pull toward the positive goal increases as the individual gets closer to the goal. At the same time, however, the retreat tendency becomes stronger in avoiding the negative goal. An example would be in the learning of swimming. To an individual, swimming may present a positive goal for a variety of reasons such as self accomplishment, social approval, and status attainment; but, at the same time, it may be a fearful activity to be avoided at all costs, a situation where fear of drowning is paramount. The conflict here may be very real; and, obviously, a great deal depends on the understanding of the problem by both student and teacher. The avoidance-avoidance conflict presents less of an internal conflict. If both goals are negative, the individual simply will attempt to withdraw from the situation. This situation frequently occurs in swimming classes, when students are required to take a basic course in swimming.

Miller (Hunt, 1944) in an article "Experimental Studies of Conflict", supported the explanation of the approach-avoidance conflict, and concurred that the pull towards a positive goal increases as one approaches the realization of the goal. In the swimming example this means that if we can reduce the avoidance tendency and move towards a higher level of aspiration and towards a higher goal, we may be able to come to a point where approach and avoidance cross. This point would then represent the optimum environment for a fruitful learning situation.

With some notion as to what the concept of anxiety envelopes, there remains the problem of how to measure it. According to Levitt (1967), three different ways have come into existence.

(1) The physiological approach is an attempt to measure physiological changes within the body, which would indicate a stress or anxious situation. These studies have made and probably will continue to make a great contribution to the body of scientific knowledge in general. Highly sophisticated measures are possible today in the area of rate of heartbeat and measures of brain waves. The objection has been raised that these measures do indicate a change of a physiological nature, but do not indicate the nature of the anxiety that caused these changes, nor the intensity.

(2) A second measuring technique has employed the psychological projective tests, primarily Rorschach and the Thematic Apperception Test (TAT). The advantage of this methodology is that such tests indirectly measure various stages of anxiety, while the subject ordinarily is not aware of what is actually being measured. Difficulty does arise, however, in the interpretation, which is by no means always the same when interpreted by different psychologists or psychiatrists.

(3) The third, and most promising, device has been the use of an inventory. Examples of these are well known; i.e., the Taylor Manifest Anxiety Test, the Guilford-Martin Personality Inventory, the California Test of Personality, Edwards Personal Preference Schedule, the Minnesota Multiphasic Personality Inventory, and the California Psychological Inventory. Most of these tests attempt to measure personality traits in general, and include anxiety measures as a part

of the total aspect. Probably, specific to the anxiety aspect of personality, Cattell (1961) has compiled the most extensive research and for that reason, Cattell's material will be reviewed in some detail.

Tests coming from the Cattell laboratory are the product of a long-range research project, involving not only thousands of subjects, but also complete teams of researchers. The IPAT-8-Parallel-Form Anxiety Battery is a recent result (1960, and revised in 1962), to equate eight parallel forms of a questionnaire which purports to measure anxiety. The test consists of seven sub-tests attempting to elicit information on the anxiety status of the subject. Related concepts to anxiety, found in this inventory, are (1) susceptibility to annoyance; (2) lack of confidence in untried skills; (3) readiness to confess common faults; and (4) susceptibility to embarrassment. The test has been validated and has been used rather extensively in a variety of studies in the 1960's. However, the test is still on an experimental basis.

Cattell has a unique notation of organizing the various psychological concepts about which he is concerned. The anxiety factor in his notation appears under the index U.I. 24: Anxiety vs. Adjustment (Universal Index 24), which is the primary factor in this study. Cattell and Warburton (1967, pp. 200):

Theoretically, it is of considerable interest that a general anxiety factor has been established independently of the general neuroticism factor (low neural reserves, U.I. 23), permitting the measurement of anxiety level by an objective test battery.

The notion of anxiety is shown by high annoyability and irritability, high emotionality of comment, strong desire to do the right thing, uncertainty regarding untried performances, greater

fluency about self than others, greater decrement in performance through noise, lower basic metabolic rate, and greater restlessness on the fidgetometer.

Factor U.I. 24 was formerly labeled 'anxiety to achieve,' but later results show that anxiety to achieve is only one aspect of a general anxiety factor. Its identification with anxiety is made with some confidence on account of the evidence, first that it has a high correlation in five researches with the well-established second order anxiety factor found in questionnaire data. Second, in Scheier's study we have clear confirmation of its association with environmental situations of anxiety and with psychiatrists' ratings.

This factor corresponds closely with the second order factor of anxiety derived from questionnaire and real life data. Its opposite is called adjustment, on the theory that second order anxiety is the total expression of maladjustment.

According to Levitt (1967), trait anxiety is a predisposition to respond anxiously in general. State anxiety is a situational (transient) phenomena. There is as of today still no clear differentiation between the two. Cattell (1967) has taken the position that state anxiety is a function of trait anxiety. In other words, if a subject has a high trait anxiety score as measured by one of the IPAT test batteries, this would indicate a high predisposition to respond anxiously in general. The assumption is that the subject will react strongly in a particular given situation, that arouses specific fear emotions.

Fear and anxiety are closely related terms. In much of the literature the two terms, fear and anxiety, are used interchangeably; but here, the distinction is made between anxiety referring to a general state, and fear as applied to a specific situation. Both fear and anxiety have a number of sociological implications; and Cratty points out (1967) that we can distinguish on the basis of what he calls harm anxiety (physical threat) and failure anxiety

(failure to meet societal expectations). According to Cratty, the social component of failure to meet societal expectations is extremely high in our achievement-minded society. He further suggested that stress within the individual is affected by group attitudes. Cratty also distinguished between stress and tension which have a bearing on the learning of physical skills. Stress is thought of as an internal phenomena, while tension is observed by external muscular contractions. The two are closely related. He sees stress as a positive influence for simple learning; but as a negative contribution for complex learning. The relationship between group attitudes and subsequent stress on the individual has important implications for the present study, in that learning to swim in a class situation usually involves a group of students in the same situation. All are anxious, probably even actually afraid, but at least there is some comfort in the fact that they are going to go through these emotions together. This group effect may be positive or negative. Singer (1968) advocated that the social aspects involved in learning usually have a stimulating effect, except in initial stages. Singer (1965) found that the low anxious group performed better with an audience. But he also concluded on the basis of a study on varsity football players that there is little or no transference of this ability; i.e., in a new motor skill, where the low anxious football players (used to an audience, etc.) do not perform better than the high anxious group. More research in this area is needed to make any definite suggestions as to whether group influence and audience encourage or discourage better performance. Again, according to Cratty (1967) the importance of the nature of the

task, the general state of the individual, and prior practice are factors that have to be considered simultaneously with studies of anxiety.

Murray (1964) adds another social dimension to the concept of anxiety (he uses the term fear); it is seen to contribute to a possible distortion of perception. If serious enough, it may even lead to hallucinations. He sums up the kinds of fear into three areas: (1) personal threat; (2) disturbance of self-esteem; and (3) interference with social motivation.

Whiting and Stembridge (1965) supported the importance of the social impact on the individual in their study, using the Maudsley Personality Inventory. They reported a more introverted personality for the subject with a high fear score, a lack of self-confidence, and a lack of persistence. They suggested the possibility of grouping according to findings on a personality inventory for teaching purposes, depending on the nature of the task.

In the attempt to transfer anxiety and fear concepts to a specific task, swimming, there are some studies that throw some light on the question as to why some subjects learn to swim faster than others and suggestions as to the implications this may have for teaching swimming in the future.

Moran (1964, pp. 88-91) suggested that fear of the water is learned psychologically through basic childhood fears. She listed a variety of situational events that, equally important, will make the subject develop specific fear of the water. Fear of the water may have developed through accidental submerging as a baby; choking

experiences; personal near-drowning experiences; observation of an actual drowning; being pushed into deep water; or even fear taught by parents without an actual threatening event taking place in reality.

Torney (1950) placed heavy emphasis on fear and emotional stress, which he believed made it almost impossible for the subject to learn to swim. Metcalf (1964), while agreeing that fear is one of the most detrimental aspects of the learning-to-swim phase, suggested that this can be overcome in most instances through specific methodology. She separated the fear cases from the non-fear cases for instructional purposes.

Karbe (1966) in an experiment with college women, divided into three anxiety levels, using the IPAT Anxiety Scale (Cattell, and Scheier, 1963) reported that after eight lessons the high anxiety group did not perform well; but after sixteen lessons, their performance equaled that of the low anxiety group. This finding would indicate that, while more time is needed for the anxious group, separation or different methodology is not imperative. Behrman (1967), contrary to this, in using the Guilford Zimmerman Temperament scale, did find personality differences between swimmers and non-swimmers, and believed that fear cases can and should be separated before instruction. Daugert (1966) investigated the anxiety factor, using the Mandler-Sarason Test Anxiety Questionnaire and the need for achievement in a beginning learning swimming situation. A number of conclusions came out of this study. The need for achievement was significantly related to the final performance in swimming. Anxiety scores decreased during the course of instruction. Burdeshaw (1966), in an extensive study of

swimming, including Negro and Caucasian women subjects, related strength, buoyancy, motor ability, and body measurements to the learning rate in swimming. The results were that buoyancy and body measurements influenced the learning rate in swimming more than the strength and motor ability. The Negro subjects had great difficulty in the resting strokes, and this difficulty was attributed to the low buoyancy factor of the Negro female. Previous instruction for the two races seemed to make little difference in the final performance. Burdeshaw raised the question not so much as to how to teach the fearful subject, but how to develop better methods for the non-buoyant subject.

Level of Aspiration

According to Travers (1963) the concept of level of aspiration was developed by Kurt Lewin in Germany. There is general agreement on the meaning of the term, which is, psychologically as well as sociologically, related to the subject's expectations of a future performance. There also is agreement on the way the level of aspiration of a subject can be measured. The relevant literature reveals that in measuring a subject's level of aspiration he is asked to predict his performance on a specific (or general) task, which then is compared with his subsequent actual performance of that task.

Scholarly agreement on what level of aspiration is and how it can be measured, however, is where similarities stop. Some scientists take a primarily psychological point of view, and, thus, emphasize the relationship between level of aspiration and "need achievement", "success and failure", "individual differences", and other personality traits. Educators and learning theorists also place heavy emphasis on

the "success and failure" relationship with level of aspiration. In addition, this group of researchers is apt to stress the importance of motivational aspects inherent in the concept of level of aspiration. Still another group of researchers takes a primarily sociological point of view, and emphasizes such factors as the importance of the group influence on the individual performing (such as spectators present, group encouragement or ridicule during performance). The effect of socio-economic class has been investigated by this group of researchers and produced some interesting results of special importance to this study.

Looking at some of the psychological findings first, the classical study in the field is probably done by Atkinson and Litwin (1960). The basis for their experiment is found in the statement by Berelson and Steiner (1964), that the closer one gets to the realization of a goal, the greater the pull, or motivation. The reverse is also true, in that a tendency to give up on an undesirable goal increases as that goal seems more and more removed. This construct is called approach-avoidance and is closely related to achievement motive and anxiety. The Atkinson-Litwin study was concerned with a ring tossing test, where the student could choose his own distance, predicted his success, and actually performed. The results showed that those students high in achievement motivation, but low in anxiety scores, were apt to choose a challenging distance, and had a realistic prediction of their own performance. The students with a low achievement motivation and high anxiety had a tendency to choose an easy distance, so that some success could be achieved. On the average

their prediction of their level of aspiration was less accurate.

Frank (1941) made an attempt to relate the level of aspiration to personality traits within the individual. Frank's concern was centered around whether the level of aspiration should be considered "specific" or "general" in nature. In other words, does a person have a certain level of aspiration for a specific task and another aspiration for a task of a different nature? Frank came to the conclusion that level of aspiration is of a "general" nature, based on high correlations found between measures of self-esteem and a variety of different motor tasks. On the other hand, Gould (1939), interested in the same question, reported evidence that seems to support the "specific" nature of the concept of level of aspiration. The controversy has by no means been settled. It seems to focus on the problem of similarities and variations between the tasks. Frank's study was concerned with motor tasks, while Gould attempted to look at relationships involving intellectual and creative, as well as simple manipulating tasks. Even though different conjectures were advanced, there is general agreement on some closely related aspects of the question, such as the importance of past experience, the maturity of the subject, and the fact that the relationship the subject sees between the various tasks has a bearing on the specificity or the generality of the basic concept.

Cratty (1967) added another important determinant to the above; namely, that it will make a difference to the subject whether there is a "ceiling" or not. In some sports such as running or jumping, performance can always be improved upon. It is conceivable

and even very likely that the present record of the 100-yard dash will be broken again during the next Olympic Games. Running events do not have a known "ceiling". Other sports do have a "ceiling", in that the very best is a known, absolute score. In archery, a bull's eye is the very best that can be achieved. If this is not achieved, a feeling of failure may result, while if the perfect score is not known or has not been reached, a good score becomes a more relative concept and is more apt to produce feelings of success. Cratty concluded that the important aspect centers around the way a subject feels about his score, how close he is to reach a norm he has set for himself, rather than the actual score, itself.

Much research is available from the psychological point of view on level of aspiration and success or failure. Many of these studies center around the prediction of academic success. Worell (1959) reports on the correlation between grade averages and measures of aspiration in college students. The closer the students predicted their actual scores and the closer they felt they performed up to their capacity, the higher their actual grades were. Past experience was found to be an influential factor. This was supported by Sears (1940) in a study on reading and arithmetic tasks for children. Atkinson (1957) found that the best performance resulted from a moderately accurate prediction. In other words, some success would be achieved, but a challenge had to be present. While this seems a reasonable supposition, not all research is in agreement on this. Locke (1966) supported a linear relationship between the level of aspiration and actual performance; in other words, the higher the prediction of the

student, the better he performed.

Child and Whiting (1949) have summarized some of the findings and report general agreement on the following facts:

1. Success will increase the level of aspiration and failure will decrease the aspiration.
2. The magnitude of the success has a direct relationship with the rise or decline of the aspiration.
3. The relative influence of success on aspiration is greater as well as more stable than the influence of failure.

Another psychological aspect of the level of aspiration concept has been concerned with the degree of adjustment of the individual. Gruen (1945) reports that maladjusted children have a tendency either to grossly underestimate or overestimate their actual performance. The stress factor seems an obvious and important ingredient of this approach. Murray (1964) is in agreement with this statement and explained this in terms of fear of failure, which results in lowering the level of aspiration or in overcompensation and setting the level of aspiration at a level that is clearly out of reach. The basis for this, according to Murray, is an attempt at preservation of the student's self-esteem. While some trends seem indicated by the research available and particularly in some areas, more evidence is needed. According to Wylie (1961) achievement and need and level of aspiration cannot yet be fitted together in a meaningful way.

In spite of our inability to see the total picture, educators and learning theorists have taken much of this information and formulated suggestions for the teacher, based on those findings where at

least some consensus of opinion has occurred. Skinner (1953) in developing the teaching machine has made use of the importance of immediate knowledge of results (success). The subsequent development of programmed teaching is partially based upon the relationship between the level of aspiration and the actual performance, and the related concepts of past experience, failure-success, individual differences, and the nature of the task.

In physical education, the motor learning specialists all have made use of the implications of the level of aspiration in relationship to the learning of physical skills. Lawther (1966) emphasized the knowledge of results rather than using the concept of level of aspiration. Singer (1968) devoted a specific section under "Individual Differences in Skill" to the findings on level of aspiration. He pointed out the relativity of the term success, so often associated with level of aspiration. The example of setting an aspired golf score at 100 might well mean success for one, and a drastic failure for another. Three additional points are listed by Singer: (1) The reflection of optimism when faced with a challenge; (2) The degree of reality; and (3) The potential for improved performance. The relationship of these three factors with the level of aspiration of the student has important implications for the physical educator. Singer pointed out the dynamic nature of the concept in that levels of aspiration continuously change, depending on the amount of success achieved. Some contradictory evidence is pointed out in a study done by Smith (1949), where football players display a large discrepancy between level of aspiration and actual performance in the game. Even in the face of

repeated failure, levels of aspiration apparently stayed high. This probably just emphasizes the enormous complexity of the concept and the many different factors that may play a role.

Cratty (1967) devoted an entire chapter to the various influences level of aspiration has specifically on physical education. In addition to pointing out the importance of success as a motivating factor in reaching higher levels, Cratty stressed the effect parental training has on the situation. The family, as the first social grouping the child encounters in his life, will set the stage for many of his subsequent aspirations. In general, Cratty supported the finding that the higher the aspiration of the parents, the more likely it is that the youngster will strive to reach this standard. Gould (1941) also supported this and produced some evidence, in addition, that the low socio-economic groups seem to have a lower level of aspiration than the subjects from higher socio-economic groups. No specific evidence on the level of aspiration of all Negro samples in relationship to swimming has been found by the investigator.

Shaw (1958) reported evidence on the influence a group has on the individual when competing and cooperating in small groups toward the same goal. Cratty (1967) noted the influence of competition on level of aspiration, and pointed out the difficulty in assessing the positive or negative values that may arise, depending on the level and the intensity of the competition. In connection with this, he reported some evidence of the higher fluctuating levels of aspiration among men than among women.

There seems to be little scientific evidence on the effect preference for an activity has on the level of aspiration. The investigator has found no studies in the area of physical education that specifically relate the two. The effects of practice on the level of aspiration have been emphasized considerably by Lawther (1968) as well as Singer (1968). Lawther took the general approach and discussed aspects of practice such as length of practice periods, distribution of practice periods, only indirectly indicating the changes these factors may bring about in the level of aspiration of the individual student. Singer pointed out that "attention paid" is an important aspect in the learning of a physical skill. If the learner pays attention, the intent and purpose may become clearer, and, consequently, a higher level of aspiration may be set for the individual. Motivational factors imply the liking of an activity (preference) and the willingness to work for desired results (practice), and in this fashion the influence of both practice and preference can be used to great advantage in the learning of a motor skill.

SUMMARY

Swimming has long been recognized as an activity that has many values inherent in the activity itself. In the American culture, swimming rates high on the list of participation by the people. It was pointed out that in the Negro-subculture, swimming rates fairly high in participation by members of the Negro race. However, it has been noted that few Negroes have reached the high-level competition in the area of aquatics. The question that subsequently has been raised

has been: "Do racial differences have any implication for the potential swimming skills of Negro males?"

The review of literature has attempted to look at this problem from a bio-socio-psychological point of view.

With respect to biology, the research has pointed in the direction that the Negro has less natural floating ability compared to the Caucasian. While this appears to be an inherent, racial difference, the research does not indicate that this would necessarily deter the Negro from reaching a high-level competitive swimming status. It seems to be generally agreed upon that low floating ability has a detrimental effect only on the so called "resting strokes".

From a psychological point of view, in the learning of any sport anxiety and fear play important roles. This may even be highlighted in swimming because of the difference in the medium, water vs. land. Man is by nature a land-animal and has to learn to adjust and to cope with the water. Past experience and motivation are of prime importance in relation to anxiety and fear in so far as they are learned drives. Two theories are related to anxiety and drive: The Iowa Theory emphasizing anxiety as a general energizing drive; The Yale Theory stressing the situational aspects of anxiety. The latter theory has been used as the starting point for some explanations of fear as a specific aspect of general anxiety. The research, in general, has supported the view that while anxiety may be a general trait, fear usually develops in regard to a specific situation, or is specific to

the nature of the task. The IPAT-8-Parallel Form Anxiety Battery appears to be the most appropriate test for purposes of this study. Fear of the water seems to play a dominant role in the learning of swimming. Three aspects of fear are: fear as a personal threat; fear as a disturbance of self-esteem; and fear as it interferes with social motivation.

The sociological aspects of the study focus on the concept of level of aspiration. The literature points to agreement on what the concept is and how it can be measured, but is in disagreement on the role it plays in the learning of a new skill. The trend today is concerned with the role level of aspiration plays in learning. The findings seem to support the notion that raising a student's level of aspiration will increase his motivation and produce better performance.

From the research available in the area of sociology it may be concluded that the Negro has had less opportunity to participate in aquatic events, fewer facilities have been available to the Negro, and in general the Negro has had less encouragement to learn to swim.

In conclusion, it is felt that the answer to the question on why the Negro does not excel in the competitive swimming field, is to be found in causes other than racial differences. The primary contributing factors are probably to be found in the socio-psychological disadvantages to which the Negro has traditionally been subjected. In the last decade, much has been done and continues to be done, to remedy this situation.

CHAPTER III

PROCEDURES

The procedure of this study is reported in six sections: (1) preliminary; (2) the selection of subjects; (3) the selection and development of the tests; (4) two pilot studies; (5) the collection of data; and (6) statistical design.

Preliminary

This study is concerned with biological, psychological, and sociological aspects of the learning rate of the Negro male beginning swimmer. In order to investigate these various aspects, permission was obtained from Dr. Roy Moore, Chairman of the Department of Health and Physical Education at North Carolina Agricultural and Technical State University, Greensboro, North Carolina (hereafter abbreviated A & T) to conduct the study.

In the fall of 1969-70, A & T started an experimental program for all entering freshmen. The program consisted of a one-year requirement in physical education, on a rotation basis in the following four areas: dance, individual and dual sports, aquatics and gymnastics. During the fall semester the student went through an initial testing program and took five weeks each of two of the above areas. During the spring semester the student enrolled in the remaining two areas for

five weeks each and spent the last four weeks of the semester in a class which emphasized general introduction to team sports.

Selection of Subjects

A & T University was selected because it is a predominantly Negro university, has a required physical education program, and has many non-swimming Negro male freshman students. Six classes, with an enrollment of thirty students each, materialized in each of the four areas, so that a total of 180 students was available for five weeks in the area of aquatics. Because this included male and female students, as well as some students who already knew how to swim in deep water, this total of available subjects was greatly reduced in the actual study. Only those Negro male students who could not propel themselves through the water over a distance of twenty feet, without touching the bottom, were asked to participate in the study. Of the 41 students who qualified as "non-swimmers", 37 completed all the requirements during the five-week instruction period. Because these subjects were divided over five of the six sections offered, and different instructors were in charge of the aquatic program, the investigator taught the five experimental sections. This excluded any potential differences due to a different instructor, differences in methodology, and kept the environmental differential effects to a practical minimum.

The classes met twice a week for one-half hour, (actual time in the water) with the opportunity to stay after class for an additional one-half hour of practice. The pool was open afternoons from 4:00-5:00

P.M., Monday through Friday, which provided an additional five hours of practice time on a voluntary basis. The maximum time any student could spend in the water per week was one hour of instruction, and six hours of practice. Because the investigator taught only those subjects who participated in the study, while the regular A & T instructor taught the remainder of the class, classes were small. The five sections had the following enrollment:

M-W	2:00	8
M-W	3:00	10
T-T	11:00	7
T-T	2:00	6
T-T	3:00	<u>6</u>
Total		37

Ten actual one-half hour periods of instruction were held in the water.

All sections were taught by the investigator according to the American National Red Cross program for beginning swimmers. Two qualified water safety instructors assisted in the teaching and served as lifeguards for all deep water work.

All preliminary information, pencil and paper tests and initial questionnaires were administered before the first time in the water.

Selection and Development of Tests

Swimming Background Questionnaire

A questionnaire was developed (Appendix A) in order to determine the previous experience of the subject in the area of aquatics. In addition to actual swimming experience and swimming instruction, information was obtained about the swimming ability of the immediate family,

close friends, boating experience, and a subjective statement by the subject on his feelings towards swimming with regard to its importance for him, as well as his present apprehensions towards swimming.

A second questionnaire (Appendix A) designed to secure selected socio-cultural background factors was concerned with the subjects' family background. This questionnaire provided information on the number of family members living at home, and the occupation and education status of both parents. A third questionnaire (Appendix A) concerned with a preference of activity, listed all activities offered at A & T University. This form gave the subject the opportunity to express his preference for swimming compared to other activities, on a first, second, or third choice basis.

The above questionnaires were administered to all subjects prior to the first time in the water, during an initial organizational meeting of all sections.

Anxiety

The anxiety measure (Appendix B) used was the IPAT-8-Parallel Form Anxiety Battery, developed by Cattell (Cattell and Scheier, 1960). This test was chosen in preference over some other anxiety measures because of several important factors. First, the proposed study was interested in a "repeated" anxiety measure to look at the potential change in anxiety over a period of time. The 8-Parallel Form is one test available to date, which has validated parallel forms. Forms A, B, and D were used. The respective construct validity coefficients are +.56, +.54, and +.64. The inter-form reliability

coefficients respectively are +.46, +.53, and +.50. Second, the test can be scored objectively and efficiently, in less than fifteen minutes. Third, the test has been widely used since 1960 and norms are available for all forms. Fourth, the test, like all tests coming from the Institute for Personality and Ability Testing, has an impressive research background. Finally, the time intervals between forms as they are administered may vary anywhere from one-half day to several weeks, depending on the need.

The tests were administered as follows:

Form A - Initial, before actual swimming started.

Form B - Fourth week, before the first time in deep water.

Form D - Sixth week, after the last time in the pool.

Level of Aspiration

The level of aspiration was felt to be an important aspect of the proposed study. The expected achievement for the five-week course was stated at the initial meeting. The subjects, at this time, were asked to estimate their performance after five weeks of instruction in terms of the length in feet they thought they could swim the front crawl. The level of aspiration was checked again just prior to each performance test, in the third, fourth, and fifth week. The student was reminded of the expected distance as set by the investigator, but in expressing his level of aspiration, was allowed to set his own goal in aspired length he thought he would swim.

Observable Fear

A check-list of fourteen common "fear symptoms" was composed by

the investigator (Appendix C) including such elements as hesitancy to enter the water, afraid to put the face in the water, excessive drying of face and inability to open eyes under water. During two pilot studies, administered in the fall of 1969, the original "observable fear" check-list was cut down to ten common fear symptoms. It was felt that the following four elements were redundant: "Clutching the wall, refusal to join a circle, refusal to put face in the water, and refusal to attempt a turtle float".

Floating Ability

Three floating positions were observed and recorded, the turtle float, the jellyfish float, and the prone float. All three floating positions are executed with the face down and the subject holding his breath. In the turtle float the subject brings his knees to his chest and clasps his arms around his knees; in the jellyfish float the subject does not bend his knees, but merely reaches down and grasps his ankles; in the prone float the subject extends his arms over his head and attempts to assume a horizontal floating position. The third week, a floating test was administered, which consisted of a combination of the turtle float and the prone float. The subject was asked to take a deep breath, assume the turtle float, without touching the bottom stretch into a prone float, hold this position for ten seconds, and recover. If during the ten-second prone position any part of the subject's body showed above water, he was considered a floater; if the subject's body stayed completely submerged during the ten-second period, he was designated a sinker.

Swimming Performance

Based on previous experience, and the results of the two pilot studies, the following goals were selected by the instructor as being "reasonable" for a five-week swimming instruction course:

The end of the third week - 35 feet Front Crawl (shallow water)

The end of the fourth week - 40 feet Front Crawl (deep water)

The end of the fifth week - 50 feet Front Crawl (deep water)
35 feet Elementary Back Stroke
(shallow water)

Final Questionnaire

It was felt that a follow-up questionnaire (Appendix D) at the end of the five-week instructional period, would provide additional attitudinal information. This questionnaire was developed in such a way that the subject had the opportunity to express his feelings of satisfaction and disappointment; could make a judgment on the benefits of a course of this nature for future students; and express his desire to continue or discontinue further swimming instruction or swimming on a recreational basis.

Two Pilot Studies

Two pilot studies were designed during the fall semester of 1969, in order to look at the feasibility of the experimental instruments and plan. The first pilot study involved careful observation over a five-week period of two of the six aquatic sections. It was noted that many of the students indeed were non-swimmers. The fear level seemed relatively low from a subjective

point of view, although some extreme fear cases seem to be present in both sections. There were sufficient non-swimmers in both sections to make a study of this kind feasible at A & T University. As judged subjectively, many of the students in these swimming sections seemed to be sinkers.

The second pilot study involved the study of five students over a five-week period, in order to actually try out the proposed measurements. The following tests were administered to the five students chosen:

1. Observable fear check-list, consisting of fourteen possible points.
2. Floating ability, as measured by the turtle float.
3. Level of aspiration, during the first and the final week.
4. Preference of activity.
5. Anxiety measure, Form A of the 8-Parallel Form Anxiety Battery - IPAT.
6. Swimming performance, the front crawl was measured at the end of the fourth and the end of the fifth week, for distance. The elementary backstroke was measured at the end of the fifth week, for distance.

For this second pilot study, the assistance of one qualified water safety instructor was solicited. The assistant was enrolled at A & T University.

Observable Fear. The check-list of fourteen common "fear symptoms" was composed and administered. The five subjects were taken in the shallow end of the pool, and asked to perform each task listed.

The subjects showed little fear of water, and only one student actually got one point on the tentative observable fear check-list. However, other students in the class, seemed much more fearful than the five subjects who were arbitrarily selected for the pilot study. On the basis of the first pilot study (observation) and the second pilot study, the following observable fear check-list was decided upon:

	<u>Points</u>
1. Refuse to enter the water	1
2. Hesitate to enter the water	1
3. Hesitate to let go of the wall	1
4. Hesitate to submerge face	1
5. Hunch shoulders	1
6. Unable to hold breath (under water) 20 sec.	1
7. Unable to blow bubbles	1
8. Dry off face excessively	1
9. Unable to open eyes under water	1
10. Unable to take feet off the bottom (while holding on to side)	1
Total	10

Eliminated from the original fourteen-point scale were those elements that seemed to be redundant, in that they measured the same observable element. These four were, clutching the wall, refusal to join the circle, refusal to put face in the water, refusal to attempt the turtle float.

Floating ability. The five students were asked to attempt a turtle float. A demonstration was given by the investigator, and students were stabilized, while they attempted the float individually. A combined rating was given by the assistant and the investigator. The student was designated as a "high floater" if while suspended, any part of his body showed above water; he was designated as a "low floater"

(or sinker) if no part of his body showed above water, while he was suspended in the turtle float position. Of the five students in the pilot study, the rating of the assistant and the investigator was in agreement on four of the students. It was decided that for the actual study, three floating positions should be administered, the turtle float, the jellyfish float, and the prone float. In addition, a second student assistant who also was a qualified American National Red Cross water safety instructor, would be used so that three ratings would be obtained on each subject. It was decided to accept the rating of floater or sinker, if two out of the three raters agreed.

Level of Aspiration. During the second pilot study, the five subjects were told that the distance to be accomplished, swimming the front crawl, after five weeks of instruction, was fifty feet. This distance was arrived at on the basis of the average performance of the students in the first pilot study. They were asked whether they thought they could, after five weeks, swim more than fifty feet, just fifty feet, or less than fifty feet. The results were: one student predicted that he would swim more than fifty feet, and on his final performance actually did swim the length of the pool (75 feet). Two students thought they could swim just fifty feet by the end of the session; one of these actually swam the length of the pool, the other one, as predicted, swam just the fifty feet. The two students who did not think they could swim that far by the end of the course, in actuality did not swim fifty feet. The level of aspiration check was made again at the last swimming session, to see if after some experience, the students would predict their final performance better

than originally. This was not the case. The student who originally predicted that he would swim more than fifty feet seemed to lose some confidence, and predicted that he would swim just the fifty feet. The two students who originally predicted realistically, both gained in confidence, and thought they could swim further. The two students who predicted a low distance, still predicted low, on the last session. Because of the possible implications, it was decided to administer the level of aspiration check on a repeated measure basis, once initially, and again during the third, fourth and fifth weeks. On the basis of the two pilot studies, the distance for the front crawl was set at: (1) thirty-five feet by the end of the third week; (2) forty feet by the end of the fourth week; and (3) fifty feet by the end of the fifth week.

Preference of Activity. A list was obtained from the Department of Physical Education, indicating the activities presently taught at A & T University. (See Appendix A) The five students indicated their preference of activity, if they had a complete free choice. If swimming was listed as first, second or third choice, they were considered to have a "high preference" for swimming. If they did not check swimming, it was interpreted as a "low preference" for swimming. Of the five subjects tested, two preferred swimming, three did not. Of the two students who preferred swimming, one of them swam the final distance, one did not.

Anxiety - Form A. The measure of anxiety was administered only once, in order to check the feasibility, the length of time it would take to administer it, and to get a general indication. The five

students ranged in scores from 5.2 - 6.8. This represents the middle range (mean 6.7, standard deviation 1.1) and indicates that four of the five were slightly less anxious than the average. Because one of the purposes of the study was to measure the change in anxiety as measured over a five-week period of time, while learning to swim, the anxiety would be administered three times. Once initially, once just prior to the first deep water experience, and once after the end of the fifth and final week.

Swimming performance. The total class was screened for initial swimming performance, before the actual five-week rotation session began. All students reported to the swimming pool. Those students who believed that they could swim the width of the pool (thirty-five feet) reported in bathing suit; the others did not. A test was administered, and those students who demonstrated their ability to swim across the pool, were excused from taking the swimming rotation section, and assigned to one of the other three activity sections. The students who stayed in the swimming section were, through this elimination process, those students who were beginners in the strictest sense of the word. They had no swimming ability whatsoever. This fact was reconfirmed during the first actual session in the water. They followed the regular instruction of the class, except for the initial "adjustment to the water" which was administered and taught by the investigator and the student assistant. The intent was to measure progress, by the end of the third, fourth, and fifth week. However, the third week fell just before Christmas vacation and class was cancelled. The students' progress was measured the last two weeks

of the semester, which was actually their seventh and ninth time in the water. One student swam the length of the pool on both occasions. Two students swam just the required length on the seventh time, but improved considerably by the last class period. Of the two students who did not make the suggested distance, one was well on his way to becoming a swimmer, the other one had not made much progress. The student who made the least progress had missed one class period of instruction, was a floater, had a low level of aspiration, low preference and an average anxiety score. It was decided that the tentative distances of thirty-five, forty and fifty feet respectively were an adequate indication of performance improvement, and in addition, were a reasonable level of performance to expect from the student in a five-week period of instruction. Because of the very limited time of instruction the students had, the elementary backstroke was only taught for one period. None of the five students could swim the proposed thirty-five feet of the elementary backstroke. On the basis of past experience, it was decided that this was partially due to a lack of instruction, and could be accomplished if the stroke was taught early in the session, so students could practice on their own. Therefore it was decided to take the third period in the water, and introduce the elementary backstroke to all the subjects.

Collection of Data

The data for the study were collected beginning the first day of the second semester, 1969-70. During the initial meeting, the

following data were collected on forty-three Negro male subjects, all enrolled in five aquatic sections of the experimental program at A & T University.

1. Swimming Background Questionnaire
Family Background Questionnaire
Preference of Activity (Appendix A)
2. Form A of the IPAT-8-Parallel Form Anxiety Battery
(Appendix B)
3. Level of Aspiration

The students were told that they were expected to be able to swim fifty feet of the front crawl, after a five-week instructional period. They were then asked to state their level of aspiration, in terms of

- a. Would swim more than fifty feet.
- b. Would swim just fifty feet.
- c. Would swim less than fifty feet.

The information obtained, as listed above, was administered in the gymnasium, before the students had been in the pool.

Two qualified American National Red Cross water safety instructors were hired for the duration of the study to assist in administering tests, to serve as lifeguard during deep water work, and to judge initial floating ability and fear symptoms. Both students were enrolled at A & T University.

The first actual instructional period in the water consisted of "adjustment to the water" as suggested by the American National Red Cross instruction manual. During this time all students were checked on their fear rating by the investigator and the two assistants. An average of the three ratings was taken for the final fear rating, and

rounded off to whole numbers. For example, if a student received ratings of 4, 5 and 7 points respectively, his fear rating was recorded as 5.

The three floating positions, turtle float, jellyfish float, and prone float were taught during this initial period, and an initial judgment was made on the subject's potential floating ability. The final floating test was administered during the third week of instruction. The subject was instructed to assume the turtle float, stretch out into the prone float, without touching the bottom, hold this position for ten seconds, and recover. If during the ten-second period, any part of the subject's body showed above water, he was designated a floater. If no part of the subject's body showed above water, he was designated a sinker. During this initial adjustment to the water, it was suspected that two of the subjects had considerable experience in the water. Even though they classified themselves as non-swimmers, they could get across the width of the pool (thirty-five feet), without their feet touching the bottom. They were eliminated from the study, even though they stayed for the benefit of the small group instruction since they felt they could learn about swimming from participating in such a class.

Five weeks, consisting of ten one-half hour periods of instruction were subsequently taught. The regular American National Red Cross procedures were followed. The third week, the final floating ability was determined, and the first thirty-five foot performance test of the front crawl (shallow water) was recorded. A sign was posted indicating that the expected goal for the test was to swim the

front crawl, thirty-five feet. The subject was asked to state his level of aspiration just prior to swimming the thirty-five feet. The pool was marked off in five-foot intervals, and the nearest five-foot estimate was recorded. No particular emphasis as to form was enforced, other than that the specified stroke was the front crawl, with a recognizable flutter kick and recovery of the arms out of the water. The elementary back-stroke was introduced to the subjects at this time.

At the beginning of the fourth week, the subjects had been asked to come to class early, in order to fill out the second anxiety inventory, so that no time in actual swimming instruction would be lost. It was announced that they were going to be introduced to deep water as soon as they finished filling out the anxiety statement. The first deep water lesson was taught during this period with the assistance of the two water safety instructors--one in the water and one with a pole in hand on the deck. This procedure was followed throughout all subsequent deep water work. At the end of the fourth week, the forty-foot performance test in deep water on the front crawl was administered, and the level of aspiration and actual distance performed were recorded. At the end of the fifth week the same procedure was followed again, with the exception that the expected distance had increased to fifty feet in deep water. During all three performance tests, the expected distance was posted and pointed out to the subject. The subject performed individually, one at the time, and indicated his level of aspiration to the investigator only.

During the last period in the water, the elementary back-stroke was administered in shallow water. The subject again stated his level

of aspiration, and attempted to perform the required stroke for a distance of thirty-five feet. Similar to the results obtained in the pilot study, it proved that not enough instruction time had been available to teach the elementary back-stroke. The results are reported in the next chapter, but will have to be very carefully interpreted as the investigator feels that these results are not reliable. Even though some subjects did swim the distance of thirty-five feet on their back, the stroke used was not uniformly the elementary back-stroke, but rather a finning-scuttling motion with a variety of different kicks being used.

During the initial meeting, and the five weeks' instruction, four subjects dropped out of the study, due to illness, death in the family and unexplained absences. Any student who had two or more absences that were not made up in the two make-up sessions that were offered, was excluded from the final results.

The pool was open five days a week from 4:00-5:00 P.M. for practice, in addition to the possibility of staying one-half hour after class on the days of instruction. The possible amount of practice time thus was six hours a week for five weeks, or a total of thirty hours. A chart was posted in the pool, and students were reminded frequently to post their practice time accurately. At the end of each week a check was made, the practice time totaled, and encouragement given to practice more.

The third anxiety inventory, Form D, was administered after the last performance test, and away from the pool in the next rotation station. At this time, the subjects also were asked to fill out the

final questionnaire, stating their evaluation of the five-week instruction period and their intentions for the future as far as swimming instruction or recreational swimming was concerned.

Statistical Design

The purpose of this study was to discover the relative effects of anxiety, level of aspiration, and selected sociological background factors on the length of time it takes the Negro male beginning swimmer, with and without floating ability, to learn to swim.

Because of the magnitude of the computations involved, use was made of the computer Terminal IBM 1050 at the University of North Carolina, Greensboro. The University of North Carolina employs the services of The Triangle Universities Computation Center (T.U.C.C.) which uses the IBM 360 systems, Model 75.

The TSAR library program was used in all computational work.

The sub-problems were divided into three general areas, biological, psychological, and sociological aspects.

I. Biological

- A. To differentiate between high floaters and low floaters with respect to their learning rate in swimming.

The high and low floaters were separated by means of the turtle float-prone float combination, and accordingly designated as floaters or sinkers. Three one-way analyses of variance were performed to indicate any differences between floaters and sinkers on the first performance, on the second performance, and on the final performance. A

two-way analysis of variance was calculated in order to detect any over-all differences.

II. Psychological

- A. To investigate the effect anxiety has on the learning rate of the Negro male beginning swimmer, with and without initial floating ability.

The average anxiety rating of the subject was computed and a high, medium, or low anxiety grouping established, based on the mean and the standard deviation of the thirty-seven subjects. Three two-way analyses of variances were computed to indicate any differences between high, medium, and low anxiety subjects with regard to their scores on the three performance tests. A three-way analysis of variance was computed to indicate differences between floaters and sinkers, who have either a high, medium, or low anxiety score, with regard to their score on the three performance tests.

- B. To investigate the effect level of aspiration has on the learning rate of the Negro male beginning swimmer, with and without floating ability.

The level of aspiration was recorded four times, initially and prior to each performance test. Four two-way analyses of variance were computed, combining the initial level of aspiration with the final performance, because the initial aspiration was based on what the student thought he could accomplish by the end of the five-week instruction period, and the respective levels of aspiration with the appropriate performance (L.O.A. 1 with Performance 1;

- L.O.A. 2 with Performance 2; and L. O. A. 3 with Performance 3).
- 3). A three-way analysis of variance was computed, adding the floating or sinking variable to the previous computation.
- C. To investigate if there is a relationship between anxiety and level of aspiration in the Negro male beginning swimmer.

The relationship between anxiety and level of aspiration was computed through the use of a 12-12 correlation matrix. Because the anxiety measures and the stated level of aspiration by the subject were not taken at the same time, it did not seem necessary to compare the first level of aspiration with the first anxiety test. Rather, the correlations were based on initial level of aspiration with each of the three anxiety scores, and the average of a score of over-achievement, realistic achievement, or under-achievement, compared to the three anxiety tests. The student in stating his level of aspiration for each performance, subsequently over-estimated, was realistic, or under-estimated himself. An average of these three judgments produced a student who generally over the five-week period, either over-estimated, was realistic, or under-estimated himself.

- D. To gain insight into the possible relationship between general anxiety and specific fear of the water.

The fear rating was obtained during the first adjustment period in the water, and the student received a rating from 0 (no fear) to 10 (high fear). The 12-12

correlation matrix mentioned above indicated a possible relationship between the student's fear of the water and each of the three anxiety tests.

III. Sociological

- A. To gain insight with regard to selected sociological factors and the learning rate in the Negro male beginning swimmer.
- B. To gain insight into the possible relationship among level of aspiration, willingness to practice, and preference of swimming as an activity in the light of the student's sociological background.
- C. To gain insight into the possible relationship between the sociological background and anxiety, as related to the learning rate of swimming, for the Negro male.
- D. To gain insight into the relationship between the sociological background and level of aspiration as related to the learning rate in swimming, for the Negro male.

The sociological aspects of the study were analyzed descriptively, with the use of a chart indicating the performance, level of aspiration, and anxiety, representing the three main aspects of the study. The performance was reported in two groups, those who did learn to swim fifty feet or better, vs. those subjects who did not swim fifty feet at the end of five weeks. The description of sociological aspects with regard to level of aspiration was again reported in three groups, those who had a high level of aspiration, those who were realistic, and those who had a low level of aspiration. The anxiety groups were again in three levels, high, medium, and low anxious on the average as taken over the three anxiety tests.

The sociological aspects listed under III-B, insight into possible relationships between level of aspiration, willingness to practice, and preference of swimming, is to be found in the correlation matrix.

In addition to the above statistical analyses and descriptions, two graphic presentations were included, indicating the progress made over five weeks by the thirty-seven subjects. One graph indicated the rate of progression according to the third week improvement. The other graph indicated the progression if the last performance was taken as the basis of progression.

All statistical results were reported as to significance at the .05 level.

CHAPTER IV

ANALYSIS AND DISCUSSION OF DATA

Analysis

- I. Biological--To differentiate between high floaters and low floaters with respect to their learning rate in swimming.

Separation of the group by means of the combined turtle-prone float produced twenty-one floaters and sixteen sinkers. The means and standard deviations of swimming distance were computed separately for the two groups--floaters and sinkers--as well as for the total group (see Table I).

TABLE I

Means and Standard Deviations of Two Groups, Floaters, Sinkers, and the Total Group, Over Three Swimming Performances in Feet

		1st Performance	2nd Performance	3rd Performance
Floaters N-21	Mean	23.8	38.6	53.1
	S.D.	9.7	14.8	17.7
Sinkers N-16	Mean	24.1	35.0	54.1
	S.D.	11.1	15.8	18.3
Total N-37	Mean	23.9	37.0	53.5
	S.D.	10.2	15.1	17.7

Three one-way analyses of variance were performed, one on each of the three performance tests, administered respectively on the third, fourth, and fifth week, on the front crawl (see Table II).

TABLE II

One-way Analysis of Variance on Three Swimming
Performance Tests Comparing Floaters
Versus Sinkers

Source of Variation	D.F.	S.S.	M.S.	F
First Performance				
Between	1	.58	.58	.01
Within	35	3756.18	107.32	
Second Performance				
Between	1	115.83	115.83	.50
Within	35	8107.14	231.63	
Third Performance				
Between	1	8.50	8.50	.03
Within	35	11284.75	322.42	

No significant differences were found. Both groups, floaters and sinkers, improved at about the same rate.

One two-way analysis of variance was performed, comparing the floaters with the sinkers on swimming performance, in order to detect possible interaction effects (see Table III).

TABLE III

Two-way Analysis of Variance on Three
Swimming Performance Tests, Com-
paring Floaters Versus Sinkers

Source of Variation	D.F.	S.S.	M.S.	F
Columns (Performance)	2	16053.22	8026.61	36.41*
Rows (Floaters-Sinkers)	1	16.73	16.73	.08
Interaction	2	108.17	54.09	.25
Error	105	23148.07	220.46	

*Significant at the .05 level

A significant difference was found between the three performance tests, which indicated improvement over the total five-week instruction program, but no differences were found between the rate of improvement of the floaters versus the rate of improvement of the sinkers. The interaction effect also was non-significant.

Discussion

An attempt was made to differentiate between the high and low floaters with respect to their learning rate in swimming the front crawl.

This study, using thirty-seven Negro male students, supported the findings that whether or not the subject can or cannot float made no difference in learning to swim the front crawl. The goals for the group had been set at, respectively, thirty-five, forty, and fifty feet. Overall, the group did not reach these goals until the last

performance when the average performance of 53.5 feet slightly surpassed the fifty foot goal.

The standard deviation increased from 10.2-17.7 feet over the three performances, indicating that there was greater diversity in the ability of the group as the subjects progressed in their swimming ability; i.e., some subjects learned fast and swam considerably beyond the fifty foot goal; others did not progress as fast, and stayed well below the fifty foot goal.

Of the twenty-five subjects who passed the final test, eight subjects were able to swim the length of the pool. Of this group, four subjects were able to pass the American National Red Cross Beginners' Test, which included a reversal of direction and a fifteen-second back float, both in deep water. Of the twelve subjects who did not swim the required fifty feet, six subjects swam forty feet, appeared to be improving fast, and undoubtedly would have been able to pass the test if one or two more weeks would have been available for continued instruction.

II. Psychological--To investigate the effect anxiety has on the learning rate of the Negro male beginning swimmer, with and without initial floating ability.

The average anxiety rating of the total group was computed, and on the basis of the mean and the standard deviation the group was divided into three levels, representing low, medium, and high anxiety ratings respectively. A further classification was made on the basis of floaters and sinkers (see Table IV).

TABLE IV
 Low, Medium, and High Anxiety Rating
 Groupings in Number of Subjects
 Per Group

Anxiety Scale - Range 4.2 - 8.8 Mean 6.0 S.D. .75			
	Low Anxiety 4.2 - 5.1	Medium Anxiety 5.2 - 6.7	High Anxiety 6.8 - 8.8
Floater's N=21	5	12	4
Sinker's N=16	3	9	4
Total N=37	8	21	8

In addition the means and standard deviations were computed for twenty-one groups, separately. Floater's with low, medium, or high anxiety, on the first, second and third performance; sinker's with low, medium, or high anxiety on the first, second and third performances; and the grand mean and standard deviation for each of the three performances (see Table V).

TABLE V

Means and Standard Deviations of Three Groups,
Low, Medium, and High Anxiety, Over Three
Swimming Performances Measured in Feet for
Floaters, Sinkers, and the Total Group

			1st Performance	2nd Performance	3rd Performance
Floaters	Low Anx. N=5	Mean	23.0	37.0	51.0
		S.D.	11.5	16.0	23.8
	Med. Anx. N=12	Mean	24.6	39.6	53.8
		S.D.	10.1	15.9	18.1
	High Anx. N=4	Mean	22.5	37.5	53.8
		S.D.	8.7	13.2	11.1
Sinkers	Low Anx. N=3	Mean	28.3	46.7	68.3
		S.D.	11.5	23.7	11.5
	Med. Anx. N=9	Mean	23.9	33.9	55.0
		S.D.	10.8	13.9	17.1
	High Anx. N=4	Mean	21.3	28.8	41.3
		S.D.	13.8	13.1	19.3
Total	Low Anx. N=8	Mean	25.0	40.6	57.5
		S.D.	11.0	18.2	21.0
	Med. Anx. N=21	Mean	24.3	37.1	54.3
		S.D.	10.2	15.0	17.3
	High Anx. N=8	Mean	21.9	33.1	47.5
		S.D.	10.7	13.0	16.0

Three two-way analyses of variance were computed on the three performances, comparing floaters and sinkers with the three anxiety ratings (see Table VI).

TABLE VI

Two-Way Analysis of Variance on Three Swimming Performance Tests, Comparing Low, Medium, and High Anxiety Groups

	First Performance			
Source of Variation	D.F.	S.S.	M.S.	F
Columns (Anxiety)	2	71.67	35.83	.30
Rows (Floaters-Sinkers)	1	9.35	9.35	.08
Interaction	2	65.14	32.57	.28
Error	31	3652.22	117.81	
	Second Performance			
Columns	2	374.19	187.10	.77
Rows	1	18.59	18.59	.08
Interaction	2	476.04	238.02	.98
Error	31	7502.22	242.01	
	Third Performance			
Columns	2	727.48	363.74	1.13
Rows	1	30.14	30.14	.09
Interaction	2	1089.58	544.79	1.69
Error	31	9980.42	321.95	

No significant differences were found, indicating that the subject's feelings of anxiety or the absence of those feelings did not affect his swimming performance on any of the three performance tests. This same no-difference held true for floaters as well as for sinkers, and for all interaction effects.

One three-way analysis of variance was performed comparing the floaters versus the sinkers, their respective anxiety ratings, and their improvement over three performance tests at the same time (see Table VII).

TABLE VII

Three-way Analysis of Variance on Three Swimming Performance Tests Comparing Low, Medium, and High Anxiety Groups, and Floaters and Sinkers

Source of Variation	D.F.	S.S.	M.S.	F
Columns (Performance)	2	13179.0	6589.5	24.6*
Rows (Low, Medium, High Anxiety)	2	991.7	495.9	2.2
Layers (Floaters-Sinkers)	1	6.0	6.0	.0
Interaction Anxiety-Performance	4	181.6	45.4	.2
Interaction Anxiety-Floaters-Sinkers	2	1279.3	639.7	2.8
Interaction Performance Floaters-Sinkers	2	52.1	26.1	.0
Interaction Performance-Anxiety-Floaters-Sinkers	4	351.4	87.6	.4
Within	93	21134.9	227.3	

*Significant at the .05 level

The performance showed a significant difference, reaffirming that all subjects improved over the five-week instruction period. Neither their anxiety rating nor their floating ability showed any significant effects, indicating that all subjects improved at about the same rate. There were no significant interaction effects.

Discussion

It was thought that a difference in anxiety rating possibly could affect the learning rate of the beginning swimmer. This was not confirmed with the thirty-seven Negro male subjects of this study.

The overall anxiety rating of the group of 6.0 was slightly below the norm given by Cattell (Cattell and Scheier, 1960) of 6.4 over the three tests administered--Forms A, B, and D. The standard deviation of the Negro male group was .75, as compared to the Cattell norm of 1.2. This indicated that the present sample was slightly less anxious than the norm, and as a group scored somewhat closer together, than the norm as calculated by Cattell.

Even though none of the F-ratios were found to be significant, it was interesting to note that the low anxiety group, on the average, performed better than the medium group, and the latter in turn swam further than the high anxious group on all three performances (see Table V). This same difference was found for the sinkers as a group, but not for the floaters. In the floating group the medium anxious subjects performed best on the first two tests and their mean score was equalled by the high anxious group on the last performance.

The standard deviation showed the same pattern as noted before, the group seemed to become more diverse on the final performance with one exception. The standard deviation of the low anxious, sinking group showed a considerable decline from 23.7 feet on the second performance to 11.5 feet on the third performance. This indicated that this group of low anxious sinkers in the long run improved at about the same rate, in contrast to having some individuals improving a great deal while others stayed far behind during the last week.

About two-thirds of the low and medium anxious groups did pass the final test, while only one-half of the high anxious group swam the final fifty feet. While this may be interpreted as a possible directional sign, the difference was not statistically significant. A further interpretation probably has to be made in the light of the corresponding observable fear rating of the subjects. The sample contained four extreme high fear cases with ratings of five or above on the ten-point scale. These four subjects swam, respectively, fifteen, thirty-five, forty and forty-five feet on the final performance, and thus none of them passed the final test. The corresponding anxiety ratings for the four subjects were, 7.1, 5.7, 7.6, and 5.8. This finding may be interpreted to indicate that anxiety traits and fear traits do not necessarily go together and that anxiety by itself therefore does not necessarily indicate a slower learning rate of swimming. The correlation coefficient between anxiety and observable fear as reported and discussed later on was positive, but extremely low.

B. Psychological

To investigate the effect level of aspiration has on the learning rate of the Negro male beginning swimmer, with and without floating ability.

The level of aspiration was measured four times during the study. Initially the subjects were asked to state how far they thought they could swim the front crawl after five weeks of instruction. The subject stated this level of aspiration in terms of: would swim more than fifty feet, just fifty feet, or less than fifty feet. The announced goal had been set at fifty feet. The results of this measure were tabulated (see Table VIII).

TABLE VIII

High, Realistic, and Low Initial Level of Aspiration Groupings in Number of Subjects Per Group

	High L.o.A. Swim more than fifty feet	Realistic L.o.A. Swim just fifty feet	Low L.o.A. Swim less than fifty feet
Floaters N=21	12	6	3
Sinkers N=16	9	5	2
Total N=37	21	11	5

Subsequently the level of aspiration was stated again, just prior to the first, second, and third performance tests. In each case the goal was announced, respectively,

thirty-five, forty, and fifty feet. The subject would state his level of aspiration in terms of the number of feet he thought he could swim the front crawl. For example, if on the first performance test, the student would announce his level of aspiration at thirty feet, he was recorded as having a "low" level of aspiration; i.e., his level was below the stated class goal.

This type of level of aspiration has been tabulated (see Table IX).

TABLE IX

Number of Subjects Per Group with High, Realistic and Low Level of Aspiration Corresponding to First, Second, Third Swimming Performance Tests

		High L.o.A.	Realistic L.o.A.	Low L.o.A.
Floaters N=21	1st Performance	0	5	16
	2nd Performance	2	7	12
	3rd Performance	4	8	9
Sinkers N=16	1st Performance	0	3	13
	2nd Performance	1	3	12
	3rd Performance	3	6	7
Total N=37	1st Performance	0	8	29
	2nd Performance	3	10	24
	3rd Performance	7	14	16

The means and standard deviations of the final performance were computed for each of the nine groups. Floaters with high, realistic, or low initial level of aspiration, sinkers with high, realistic, or low initial level of aspiration, and the total group with the same three levels of aspiration (see Table X).

TABLE X

Means and Standard Deviations of Low, Realistic, and High Level of Aspiration on the Final Swimming Performance, Measured in Feet, for Floaters, Sinkers, and the Total Group

		Final Performance	
		Mean	Standard Deviation
Floaters N=21	High L.o.A. N=12	57.5	19.9
	Realistic L.o.A. N= 6	50.0	15.5
	Low L.o.A. N=3	41.7	2.9
Sinkers N=16	High L.o.A. N=9	62.8	13.3
	Realistic L.o.A. N=5	52.0	11.5
	Low L.o.A. N=2	20.0	7.1
Total N=37	High L.o.A. N=21	59.8	17.2
	Realistic L.o.A. N=11	50.9	13.2
	Low L.o.A. N=5	33.0	12.5

As can be seen from Table X, in all three groupings, the high level of aspiration subjects did indeed swim further than the realistic level of aspiration subjects, who in turn had a higher average than the low aspiration subjects.

The means and standard deviations were computed for the three performance tests, when the groups were divided according to their corresponding level of aspiration; i.e., the first level of aspiration, taken just prior to the first performance level (see Table XI).

TABLE XI

Means and Standard Deviations of Three Groups,
Low, Realistic and High Level of Aspiration
Over the Three Corresponding Swimming
Performances, Measured in Feet, for
Floaters, Sinkers, and
the Total Group

		1st Performance		2nd Performance		3rd Performance	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Floaters N=21	High L.o.A.	--	--	67.5	10.6	75.0	0.0
	Realistic	35.0	0.0	45.0	7.1	58.8	9.5
	Low	20.3	8.5	30.0	10.0	38.3	13.7
Sinkers N=16	High L.o.A.	--	--	65.0	0.0	75.0	0.0
	Realistic	35.0	0.0	50.0	8.7	58.3	6.1
	Low	21.5	10.9	28.8	11.9	41.4	19.5
Total N=37	High L.o.A.	--	--	66.7	7.6	75.0	0.0
	Realistic	35.0	0.0	46.5	7.5	58.6	8.0
	Low	20.9	9.5	29.4	10.8	39.7	16.0

On the basis of these different groupings, four two-way analyses of variance were performed. A comparison was made between the means on the final performance when the subjects were divided according to their initial level of aspiration (see Table XII).

TABLE XII

Analysis of Variance, Comparing Final Swimming Performance
When Grouped According to Initial Level of
Aspiration

Source of Variation	D.F.	S.S.	M.S.	F
Columns (L.o.A.)	2	3869.7	1934.9	7.92*
Rows (Floaters-Sinkers)	1	148.5	148.5	.61
Col.-Rows	2	930.0	465.0	1.90
Error	31	7577.2	244.4	

* Significant at the .05 level

A significant F at the .05 level was found for the difference in performance, when viewed with regard to initial level of aspiration. As noted before, students with a high level of aspiration, initially, did indeed perform better than the students who initially were realistic. This latter group performed better than the students who started with a low level of aspiration.

Three two-way analyses of variance were computed, for the first, second and third swimming performances and their respective corresponding levels of aspiration (see Table XIII).

TABLE XIII

Analysis of Variance on Three Swimming Performance Tests,
Using First, Second, and Third Level
of Aspiration Groups

Source of Variation	D.F.	S.S.	M.S.	F
1st Performance (See note at end of Table)				
Columns (L.o.A.)	1	1246.6	1246.6	16.51*
Rows (Floaters-Sinkers)	1	.9	.9	.01
Interaction	1	6.3	6.3	.08
Error	33	2492.6	75.5	
2nd Performance				
Columns (L.o.A.)	2	3807.7	1903.9	18.34*
Rows (Floaters-Sinkers)	1	.7	.7	.01
Interaction	2	45.2	22.6	.22
Error	31	3218.8	103.8	

TABLE XIII--Continued

3rd Performance

Source of Variation	D.F.	S.S.	M.S.	F
Columns (L.o.A.)	2	6563.3	3281.7	22.08*
Rows (Floaters-Sinkers)	1	6.4	6.4	.04
Interaction	2	19.6	9.8	.07
Error	31	4606.5	148.6	

* Significant at the .05 level

The analysis of variance on the first performance was computed on only two levels of aspiration, realistic and low; no subject estimated high on the first test.

In all three analyses, the F for the columns was found to be significant at the .05 level, indicating that the level of aspiration as announced immediately before a performance, was a significant indicator as to the performance of that subject. None of the four analyses showed a statistical significant difference between floaters and sinkers, or for any of the interaction effects. In other words floating or sinking ability does not seem to have any significant influence on the student's level of aspiration and in predicting his future performance. It would seem that the subject does not relate his floating ability to his aspirations for swimming.

A three-way analysis of variance was computed,

combining the effects of floaters versus sinkers, the initial level of aspiration grouping, and the three performance tests (see Table XIV).

TABLE XIV

Three-way Analysis of Variance on Three Swimming Performance Tests Comparing Low, Realistic, and High Level of Aspiration Groups and Floaters and Sinkers

Source of Variation	D.F.	S.S.	M.S.	F
Columns (Performance)	2	9801.8	4900.9	30.11*
Rows (L.o.A.)	2	7871.1	3935.6	24.10*
Layers (Floaters-Sinkers)	1	266.9	266.9	1.63
Performance (L.o.A.)	4	284.6	71.2	.43
Level of Aspiration (Floaters-Sinkers)	2	555.4	277.7	1.68
Performance (Floaters-Sinkers)	2	83.0	41.5	.25
Performance (L.o.A. Floaters-Sinkers)	4	476.3	119.1	.73
Within	93	15190.7	163.3	

*Significant at the .05 level

Confirming what had been previously found, both the performance and the level of aspiration effects were significant. Subjects improved over the three tests, and

subjects with a high level of aspiration performed better than those with a lower level of aspiration. In addition it was noted that the interaction among the factors of performance, level of aspiration, and floaters-sinkers were not significant.

Discussion

It was thought possible that the level of aspiration could affect the learning rate of the beginning swimmer. This was confirmed in the present study.

Initially, before the instruction period started, twenty-one subjects stated a high level of aspiration (fifty feet or better), eleven subjects were realistic (fifty feet) and five subjects lacked faith in their own potential, and stated that they did not aspire to swim the fifty feet by the end of the instruction period. The subjects proved to be accurate in their predictive judgments; only four students out of the first group did not reach their goal, three subjects in the realistic group were just short, and the five subjects in the low aspiration level group all were accurate in their predictions, in that none of them swam the fifty feet on the final performance.

After three weeks of instruction, the subjects restated their level of aspiration (see Table IX).

As may be seen from this table, on the first swimming performance test, no subject thought he could swim more than thirty-five feet. As the class progressed the confidence in their own ability

seemed to rise, in that on the second and third performance tests the stated levels of aspiration continued to increase for the high and realistic levels, while they decreased in number of subjects who were in the low level of aspiration group. A pattern thus emerged in general, the group expressed a high level of aspiration, before entering the pool; a sharp decline occurred when they restated their level of aspiration in the pool environment, just prior to actually taking the first performance test; a slow building up of confidence occurred over the next two performances, with increasingly more subjects stating high or realistic levels of aspiration.

In looking at means and standard deviations (Table X), the accuracy of the subjects' own estimation was again confirmed. This was true for the floaters as well as for the sinkers. Generally the standard deviations were high, indicating large individual differences, with one exception. The three low level of aspiration subjects in the floating group had a standard deviation of 2.9, or almost three feet. This indicated that these subjects had a similar starting point and on the final performance, swam almost the same distance.

The means and standard deviations for each level of aspiration grouping, taken just prior to each corresponding performance test were shown (see Table XI). Some interesting observations were made based on these averages. The high level of aspiration subjects not only swam better than the forty foot goal set for that test, but on the average, swam better than fifty feet. As a group they passed the final test one week ahead of the scheduled instruction period. This phenomena was observed in both the floaters and the sinkers. The

realistic level of aspiration group was divided in this aspect. The floaters on the second test performed better than the forty foot goal, but did not reach the next goal of fifty feet. The sinkers did, like the high level group, reach that fifty foot goal one week ahead of schedule. The low level aspiration group on the average reached the thirty-five foot goal (first test) at the end of the five-week instruction period, and almost accomplished the forty-foot goal.

As expected the analyses of variance showed statistically significant differences for the differences in performances, when based on level of aspiration groupings. This difference was significant for the initial level of aspiration measurement, as well as for the three level of aspiration groups as expressed just prior to each corresponding performance.

C. Psychological

To investigate if there is a relationship between anxiety and level of aspiration in the Negro male beginning swimmer.

As a group, the thirty-seven subjects tended slightly to underestimate their performance. Over the three performances, each time the subject overestimated his own level of aspiration (stated that he would swim thirty-five feet, but only performed twenty-five feet) he would receive a 1. For a realistic estimate he scored a 2, if underestimated, his score would be 3. The mean estimated computed on this basis was 2.3 (see Table XV), indicating that the group was quite realistic over the three

performances but with a slight tendency to underestimate themselves.

The anxiety of the group as a whole was consistent. The means computed for the three administrations of the test were 6.0 (initially), 5.9 (just prior to entering deep water the first time) and 6.0 (after the five-week instruction period was over--see Table XV).

TABLE XV

Means and Standard Deviations on Front Crawl Swimming Performance, Elementary Back-Stroke, Anxiety, Observable Fear, Practice, Preference, and Initial and Average Level of Aspiration

	Means	S.D.
Performance 1	23.9	10.2
Performance 2	37.0	15.1
Performance 3	53.5	17.7
Elementary Back-Stroke	13.8	11.6
Anxiety 1	6.0	1.3
Anxiety 2	5.9	1.1
Anxiety 3	6.0	1.1
Observable Fear	1.4	2.5
Practice	7.5	3.6
Preference	2.7	1.2
Initial Level of Aspiration	1.6	.7
Average Level of Aspiration	2.3	.3

A correlation matrix was computed in order to show the possible relationship among variables, not analyzed in the previous analyses of variance.

This correlation matrix Table XV shows the Pearson Product-Moment correlations computed for twelve variables.

Discussion

Anxiety and level of aspiration were thought to be possibly related. Both measures were used as dependent variables and therefore could not be analyzed in one analysis of variance simultaneously. The Pearson Product-Moment correlation therefore was computed. Anxiety compared to the average level of aspiration, as computed above, showed a very slight positive correlation, significant only for the third anxiety test. The correlation coefficient was .28 (.275 was considered significant). This may be interpreted as follows. A slight rising in anxiety test scores is significantly related to a tendency to underestimate future performance. The correlation however is low, which diminishes the importance which can be attached to this finding.

D. Psychological

To gain insight into the possible relationship between general anxiety and specific fear of the water.

The relationship between general anxiety and specific fear of the water was analyzed by the use of the Pearson Product-Moment coefficient of correlation (see Table XVI).

TABLE XVI

Correlation Matrix for Twelve Variables
Pearson-Product-Moment Correlation

	Perf. 2	Perf. 3	El. Back	Anx. 1	Anx. 2	Anx. 3	Fear	Pract.	Pref.	I. L.o.A.	A. L.o.A.
Perf. 1	.83*	.77*	.68*	.14	.10	.18	.63*	.19	.33*	.61*	.52*
Perf. 2		.79*	.63*	.07	.10	.19	.50*	.12	.39*	.56*	.35*
Perf. 3			.59*	.12	.17	.04	.53*	.20	.35*	.50*	.42*
El. Back				.17	.22	.04	.44*	.21	.13	.46*	.31*
Anx. 1					.56*	.46*	.32*	.10	.28*	.20	.15
Anx. 2						.66*	.15	.08	.11	.25	.16
Anx. 3							.03	.01	.32*	.15	.28*
Fear								.20	.27	.61*	.32*
Pract.									.11	.01	.11
Pref.										.27	.15
I. L.o.A.											.28*
A. L.o.A.											

*.275 Significant

Discussion

The correlation between the three anxiety tests and the average fear rating on the basis of the ten point scale, was positive for all three anxiety ratings, but significant only for the first administration of the test. It would appear that a slight tendency exists for those subjects who have a high anxiety rating, to have also a more intense fear of the water. Because the next two anxiety measures did not support this tendency, little importance can be attached to this finding.

It was interesting to note that the four extreme fear cases, as reported earlier, had slightly higher anxiety ratings than the rest of the group and none of the four fell in the low anxiety classification. The two subjects with a ten point fear rating, obtained anxiety scores of 7.6 and 7.1. But the subject with the 7.6 rating did learn to swim 45 feet and overcame part of his fear, while the subject with the 7.1 rating only learned to swim fifteen feet, and subjectively judged, still seemed very much afraid of the water. The two subjects with fear ratings of 6 and 5, respectively, had anxiety ratings of 5.8 and 5.7. Of these two subjects the first learned to swim forty-five feet, the other thirty-five feet. Both seemed to have mostly overcome their original fear, and performed in deep water, on the second and third tests.

The three anxiety forms that were administered, Forms A, B, and D, had an intercorrelation of .56 between A and B, .46 between A and D, and .66 between B and D. In comparison, the correlations as reported by Cattell were respectively, .46, .53, and .50 on the

average. The Cattell norms were based on approximately 160 subjects.

III. Sociological--To gain insight with regard to selected sociological factors and the learning rate in the Negro male beginning swimmer.

A. Sociological

A descriptive analysis was made of the various sociological factors that were thought perhaps to have an influence on the subjects' potential to learn to swim. A table was constructed (see Table XVII) showing the factors considered as well as the division of number of subjects in each of the major groupings. These groupings included fast versus slow learners; high, realistic, and low levels of aspiration; low, medium, and high anxiety ratings. These three divisions represented the major focus of this study. A graphic representation of each group was made, with a discussion following each specific aspect.

Table XVII was also graphically presented--Figure 1--to show the sociological factors considered for the total group.

TABLE XVII

Sociological Factors for the Total Group

				Perf.		Anxiety			L.o.A.		
				H.	L.	L.	M.	H.	H.	R.	L.
				(25)	(12)	(8)	(21)	(8)	(21)	(11)	(5)
Preference	(22)	High	17	5	3	13	6	14	6	2	
	(15)	Low	8	7	5	8	2	7	5	3	
Practice	(20)	High	16	4	3	12	5	11	5	4	
	(17)	Low	9	8	5	9	3	10	6	1	
Previous experience	(26)	Yes	19	7	7	15	4	18	7	1	
	(11)	No	6	5	1	6	4	3	4	4	
Previous instruction	(7)	Yes	5	2	2	4	1	6	1	0	
	(30)	No	20	10	6	17	7	15	10	5	
Encouragement	(24)	Yes	17	7	4	14	6	15	6	3	
	(13)	No	8	5	4	7	2	6	5	2	
Friends swim	(20)	Yes	13	7	2	12	6	12	4	4	
	(17)	No	12	5	6	9	2	9	7	1	
Family swims	(15)	Yes	9	6	3	8	4	8	4	3	
	(22)	No	16	6	5	13	4	13	7	2	
Boating	(10)	Yes	8	2	3	4	3	8	2	0	
	(27)	No	17	10	5	17	5	13	9	5	
Family Size	(10)	Large	5	5	2	7	1	6	2	2	
	(14)	Medium	11	3	4	6	4	7	6	1	
	(13)	Small	9	4	2	8	3	8	3	2	
Parents live home	(26)	Yes	15	11	5	15	6	16	5	5	
	(11)	No	10	1	3	6	2	5	6	0	
Parents Education	(7)	College	4	3	2	3	2	1	4	2	
	(24)	High School	17	7	5	13	6	17	4	3	
	(6)	Grade School	4	2	1	5	0	3	3	0	

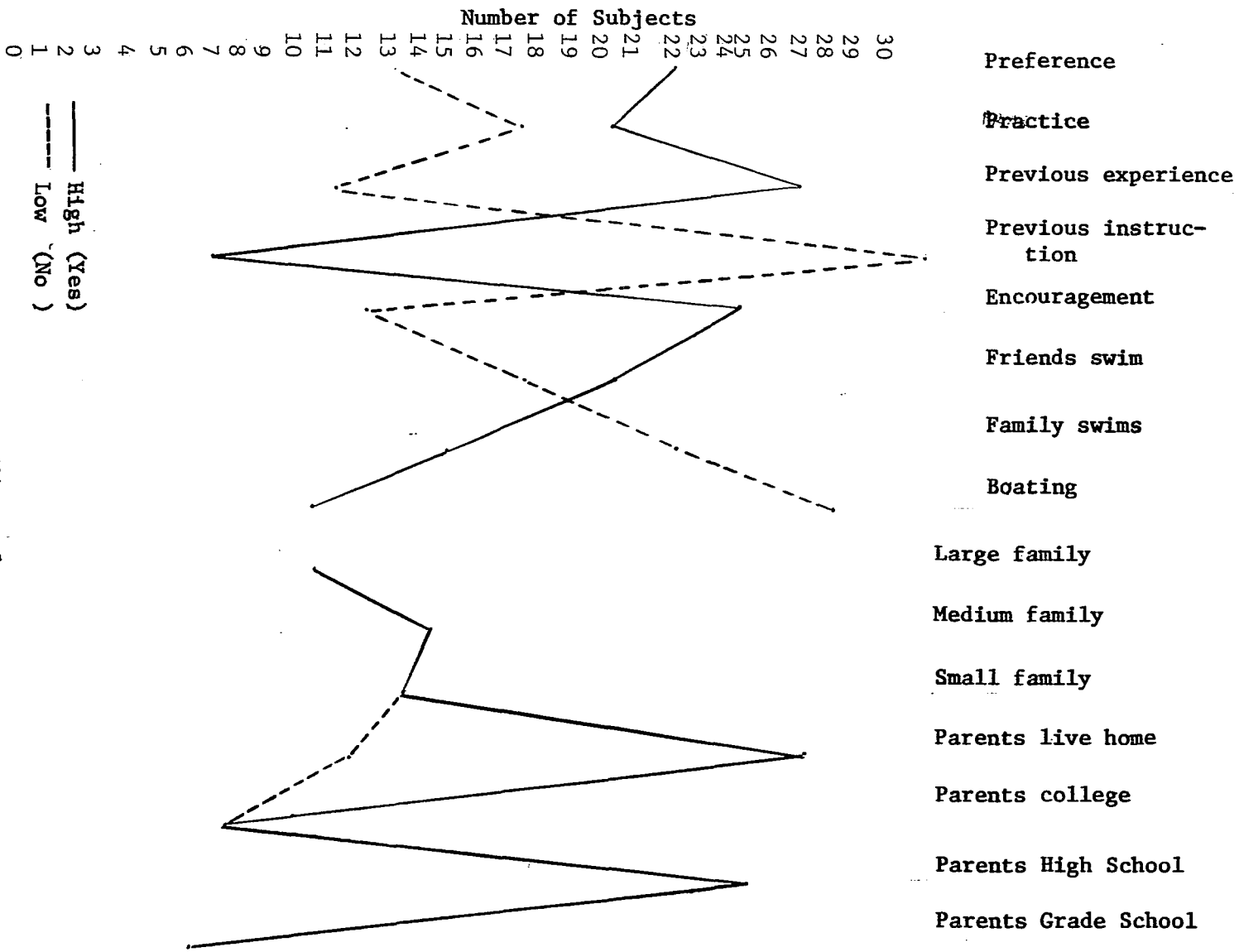


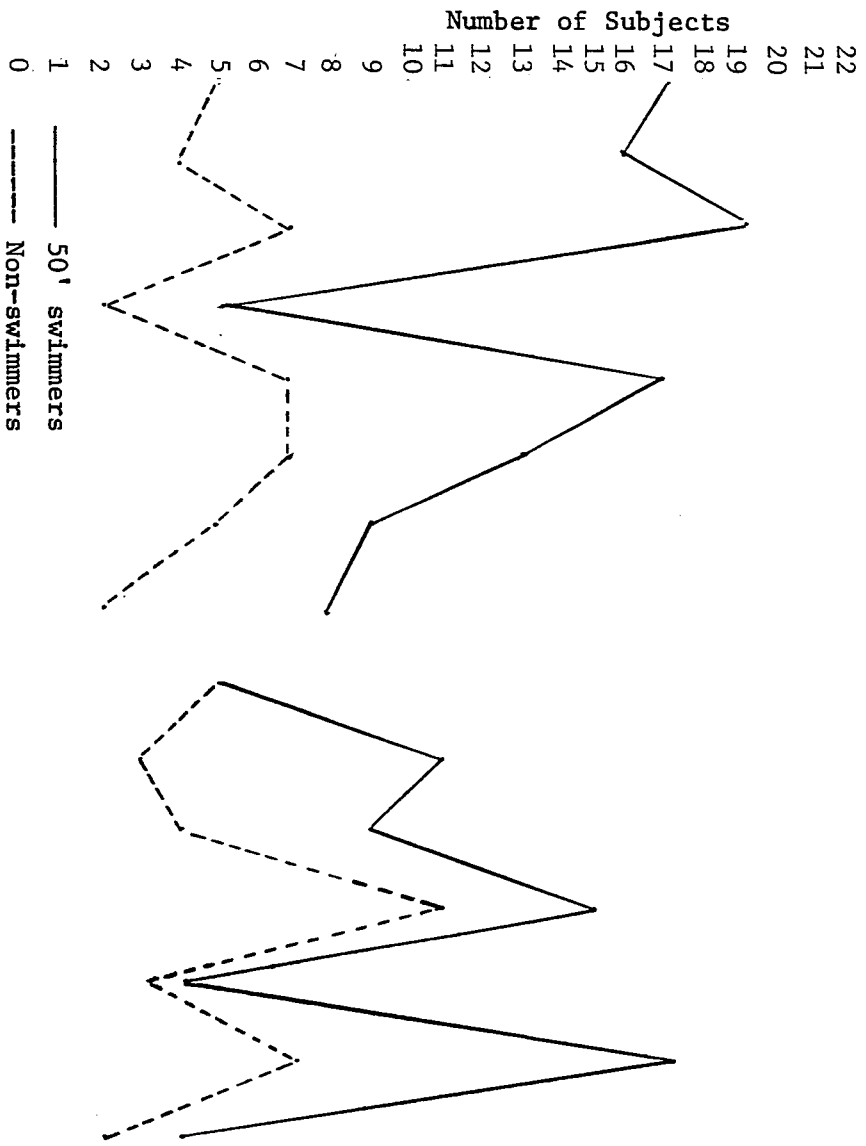
Figure 1

Sociological Factors Total Group

Discussion

The total group was divided according to the final performance, those who learned to swim fifty feet of the front crawl versus those who did not swim fifty feet. A description of the findings is presented in the second graph--Figure 2.

1. Preference and Practice. The pattern in measures of preference and practice seems to be similar. In the fast learning group, seventeen and sixteen subjects preferred swimming and practiced eight or more times over the five-week period. This represents about two-thirds of the group of twenty-five. In the slow learning group, five and four subjects liked swimming and practiced eight or more times. This, too, represented about two-thirds of the group.
2. Previous Experience and Instruction. Among the fast learners, nineteen out of the twenty-five had been swimming before, and five of these had some instruction. The slow learning group consisted of seven subjects with some previous experience and two of these with some actual instruction. It will be remembered that none of the total thirty-seven subjects could swim twenty feet, even in shallow water. Previous experience was reported by subjects as having been in the water included, beach, waterhole, or pool. Instruction, if received, consisted of a friend showing the subject once or twice how to kick, or how to move the arms. None of the subjects reported any formal



Sociological Factors Grouped According to Performance

Figure 2

- Preference
- Practice
- Previous experience
- Previous instruction
- Encouragement
- Friends swim
- Family swims
- Boating
- Large family
- Medium family
- Small family
- Parents live home
- Parents college
- Parents high school
- Parents grade school

instruction by qualified personnel.

3. Encouragement: Approximately two-thirds of both groups reported that they had been encouraged by friends, parents and in some instances teachers, to learn to swim. In the fast learning group, seventeen subjects, and in the slow learning group, seven subjects had received such encouragement.
4. Friends and Family Swimming Ability: About half of the fast group had friends who could swim in deep water, while nine out of the twenty-five stated that somebody in the family could swim. In the slow group seven out of the twelve had friends who swam, and half of them had somebody in the family who was a deep-water swimmer.
5. Boating Experience: Boating experience of some kind was reported by eight subjects in the fast learning group and only two in the slow learning group. Boating was reported if the subject had ever been in a canoe, rowboat, sailboat, or motorboat, even once.
6. Family Size: The group was divided into subjects belonging to a large family (five or more siblings), a medium-size family (three-four siblings), or a small family (one-two siblings). In the fast group, out of twenty-five subjects, five came from large, eleven from medium, and nine from small families. In the slow learning group, the division was five from large, three from medium, and four from small families.

7. Parents Living at Home. No apparent difference was detected in both fast and slow learning groups with respect to parents living at home. Approximately two-thirds of the groups reported both parents living at home.
8. Family Education. The group was also divided into those subjects who came from a family where either one or both parents had some college education; subjects whose parents had high school attendance; and a group of subjects whose parents had not gone beyond the eighth grade. Both the fast and slow learning groups showed a similar division, in that the majority of the subjects' family education fell in the middle group, with high school education, and a smaller number of subjects on either of the extremes, college or grade school. Comparing the fast and slow learning groups on the basis of the educational background of the parents, showed a high similarity. In both fast and slow learning groups, about 75% of the subjects came from a family where parents had attended high school, and an equally low percentage came from the other two educational groupings of parents with college, or parents with grade school attendance only.

B. Sociological

To gain insight into the possible relationship among level of aspiration, willingness to practice, and preference of swimming as an activity in the light of the student's sociological background.

The relationship among level of aspiration, willingness to practice, and preference of swimming can, again, be found in the correlation matrix--Table XVI (page 82). Positive low correlations were found, but none of them significant.

Discussion

The subject who had practiced seven or less times (one-half hour periods) over the five-week period was considered in the "low practice" group; eight or more times put the subject into the "high practice" group. The subject who had checked the preference of activity check-list and chosen swimming as first, second, or third choice was put into the "high preference" group, if swimming was checked fourth or lower, he was designated as being in the "low preference" group.

The results were that neither preference nor practice were correlated with initial level of aspiration, or the average rating of the subject in relationship to his estimate of performance.

C. Sociological

To gain insight into the possible relationship between the sociological background and anxiety, as related to the learning rate of swimming, for the Negro male.

The division of the total group according to the three anxiety levels is graphically presented in Figure 3.

Discussion

1. Preference and Practice. Those subjects who preferred

- Preference
- Practice
- Previous experience
- Previous instruction
- Encouragement
- Friends swim
- Family swims
- Boating
- Large family
- Medium family
- Small family
- Parents live home
- Parents college
- Parents high school
- Parents grade school

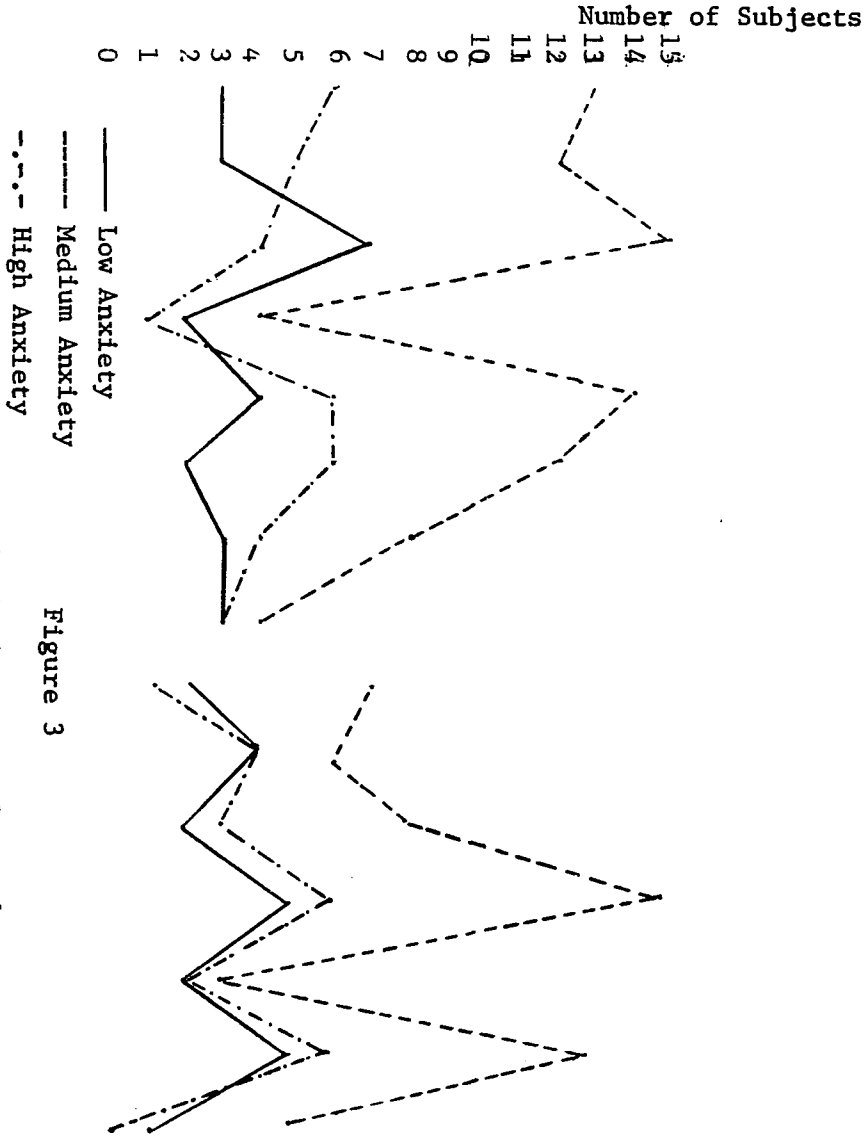


Figure 3
Sociological Factors Grouped
According to Anxiety

swimming as an activity also practiced. This phenomena occurred at about the same proportion in all three anxiety groups.

2. Previous Experience and Instruction. Previous experience in the water for the high anxious subjects showed a decided difference compared to the medium and low anxiety groups. The high anxious group had a proportionately low number of subjects with previous experience of being in the water. Four out of eight subjects had had experience. The other two groups--low and medium anxious subjects--showed a similar pattern in that the majority of the subjects had been in the water before. Seven out of eight subjects in the low anxious group had some experience, and fifteen out of twenty-one had had experience in the medium anxious group. The three groups showed a similar pattern in the proportionate amount of previous instruction. All three groups reported very little previous instruction.
3. Encouragement. No differences were detected, proportionately in the amount of encouragement the subjects had received at home or from friends. All three groups apparently were encouraged, with the low anxious group reporting a slightly lesser amount of encouragement.
4. Friends and Family Swimming Ability. The high anxious groups reported proportionally more friends who knew how to swim in deep water. The low anxious group apparently had relatively more family members who knew how to swim

in deep water. The overall pattern was remarkably similar in the low and medium groups.

5. Boating Experience. All three groups reported low experience in boating experience of any kind. Respectively in the low, medium, and high anxiety groups, three out of eight, four out of twenty-one, and three out of eight subjects had been in a boat of any kind. Proportionally the medium anxious group had the least experience in boating.
6. Family Size. It appeared that the medium anxious group came from either a large or a small family. The low and high anxious groups were very similar, in that the majority of these two groups came from medium sized families. In the high anxious group, one out of eight came from a large family, and three out of eight from a small family. In the low anxious group, two out of eight came from a large family, and two from a small family.
7. Parents Living at Home. In this category, the three groups showed no difference at all: all three groups had about two-thirds of the subjects where both parents lived at home.
8. Family Education. A consistent pattern was detected with regard to family education: few parents in either of the three groups had attended college; most parents had a high school education; and very few had not continued beyond grade school. The medium anxiety group had proportionally the highest number of parents with a high school education,

and fewer in either extreme. The high anxious group came from parents with either college or high school experience.

D. Sociological

To gain insight into the relationship between the sociological background and level of aspiration as related to the learning rate in swimming, for the Negro male.

The group was once more divided according to their initial level of aspiration and the results graphically presented in Figure 4.

Discussion

1. Preference and Practice. The pattern is not consistent with regard to preference and practice in that the high and realistic levels of aspiration chose swimming as a preferred sport. This was not the case in the low level of aspiration group, where only two out of the five subjects indicated a preference. However, with regard to practice the situation was reversed, and the low level of aspiration group practiced more, proportionally than either of the other two groups.
2. Previous Experience and Instruction. The realistic and high level of aspiration groups showed a similarity in that both had a very high count of subjects who had had some swimming experience before, while in the low level of aspiration only one subject out of five had ever been in the water before. The high level group showed the highest proportion; eighteen out of twenty-one had done

- Preference
- Practice
- Previous experience
- Previous instruction
- Encouragement
- Friends swim
- Family swims
- Boating
- Large family
- Medium family
- Small family
- Parents live home
- Parents college
- Parents high school
- Parents grade school

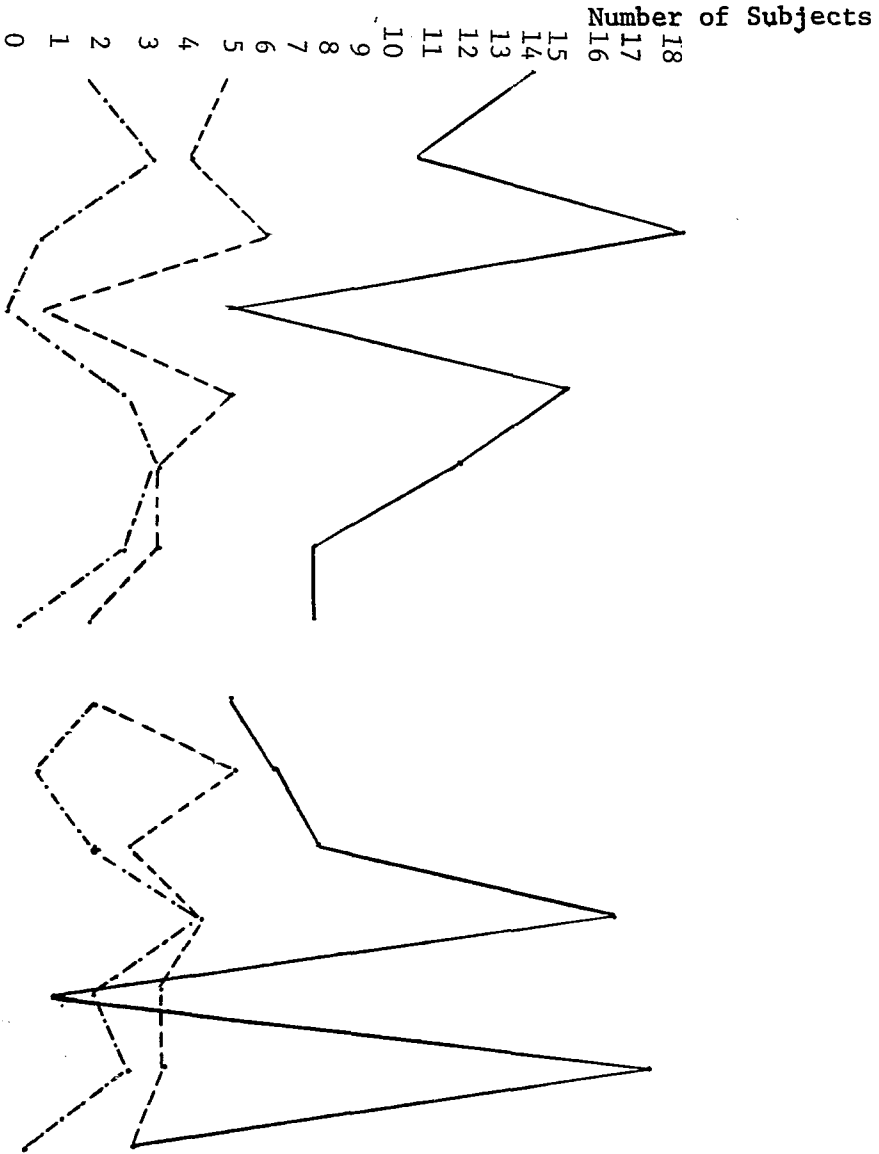


Figure 4
 Sociological Factors Grouped
 According to Initial
 Level of Aspiration

some swimming before. With regard to previous instruction the three groups were similar: very few had any instruction before. The high level of aspiration showed that six out of twenty-one had received some help, once or twice.

3. Encouragement. The pattern with regard to encouragement was very similar once more in the three groups. In all three groups the majority of the subjects had received some encouragement from either friends or family, the proportion being largest in the high level group, where fifteen out of twenty-one subjects reported some encouragement, compared to, respectively, six out of eleven, and three out of five in the realistic and low levels of aspiration groups.
4. Friends and Family Swimming Ability. The low level of aspiration group indicated the greatest proportional number of friends who could swim in deep water. Both the other groups indicated fewer numbers of friends who could swim; but in the high level of aspiration group the subjects reporting that they did have friends swimming still outnumbered those who did not. In the realistic level of aspiration group there were actually fewer subjects who had friends who could swim in deep water compared to subjects who did not have friends swimming. With respect to somebody in the family who was able to swim, the same trend continued; the low level of aspiration group had proportionally the highest number of subjects who had

somebody in the family who could swim. The high aspiration group dropped even lower, where only eight out of twenty-one subjects apparently had a member of the family who was confident in deep water.

5. Boating. All three groups had very low boating experience. The high level of aspiration group proportionally had the highest number; eight out of twenty-one had at some time been in a boat, and in low level of aspiration no subject had ever been in a boat.
6. Family Size. The realistic level of aspiration group had a slightly different pattern from the other two groups with regard to the size of the subjects' family. Proportionally, most of the realistic level of aspiration subjects came from a medium sized family. Contrary to this, the high as well as the low level groups had an almost equal number of subjects coming from large, medium, or small families.
7. Parents Living at Home. Again the realistic level of aspiration group showed a different pattern; an equal number of subjects had parents living at home, or not living at home. In contrast, the high level group had a ratio of sixteen out of twenty-one with parents living at home, and in the case of the low group, all five reported that their parents were living at home.
8. Family Education. The high level of aspiration subjects

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8. Family Education. The high level of aspiration subjects

came almost exclusively from families where the parents had attended high school. The realistic group had an even division, where four subjects had parents with a college background, four had parents with a high school background, and three had parents who had attended grade school. The low level of aspiration subjects all had parents with high school or college experience.

Learning Rate in Swimming

Two graphs are included, depicting the improvement of the group as a whole based on the initial improvement--Figure 5--and based on the final performance--Figure 6.

Out of the thirty-seven subjects, twenty-five learned to swim the front crawl for fifty feet; twelve did not achieve the fifty foot goal. In general, the subjects who performed well on the first performance test of thirty-five feet also performed well on the final test. All of them reached the goal. Those subjects who swam twenty-five feet or better on the first test also reached the final goal on the last test. In addition, some subjects with a real slow start seemed to suddenly improve during the second, or even for the last performance only. Three subjects who only managed fifteen feet on the first performance reached the goal in the final week, and three subjects who swam twenty feet on the first trial eventually swam the required fifty feet on the last test.

Of the two subjects who on the first test, after three weeks' instruction, only accomplished five feet of forward progression, one

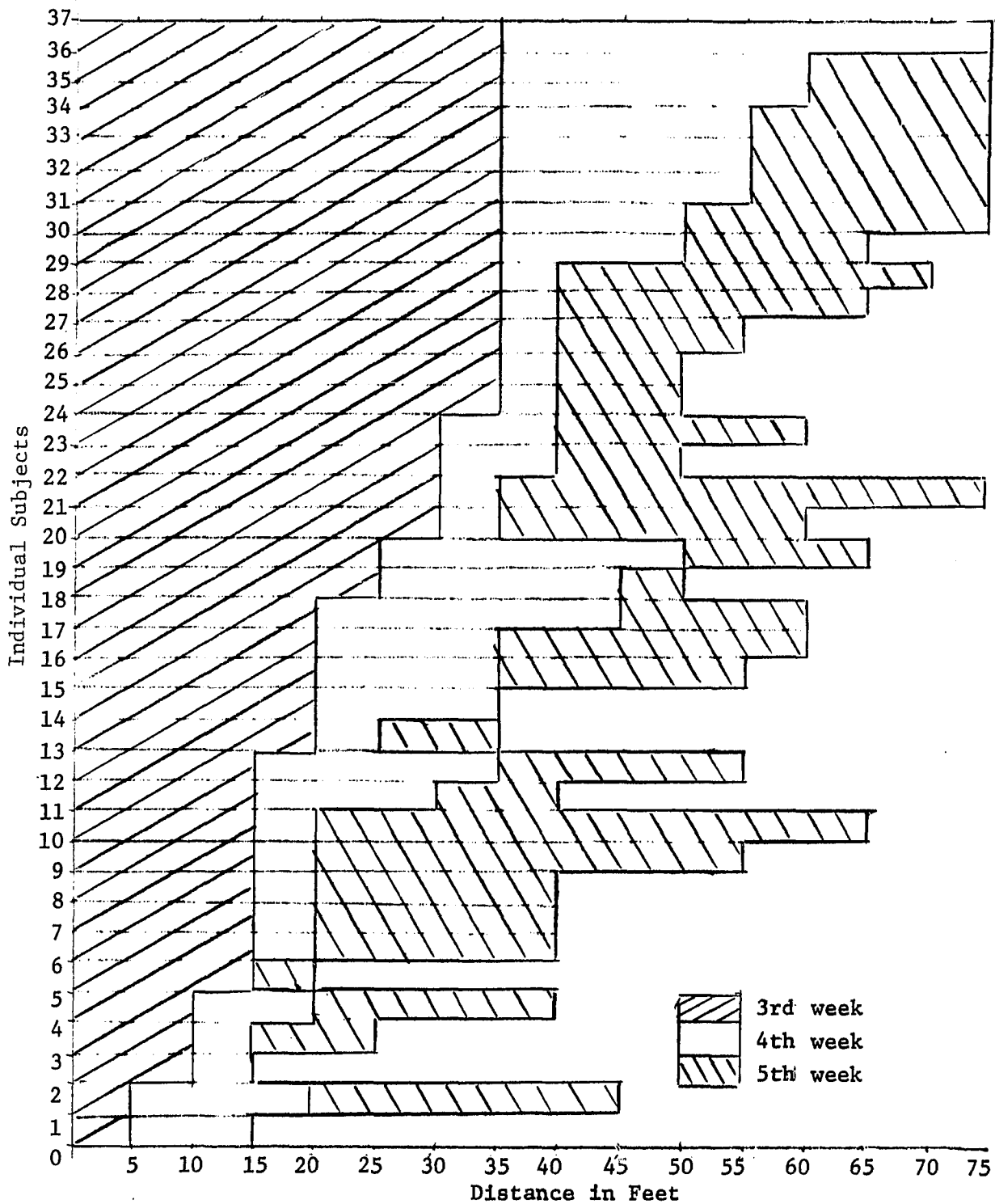


Figure 5

Swimming Improvement--Front Crawl for Individual Subjects According to Third Week Swimming Performance

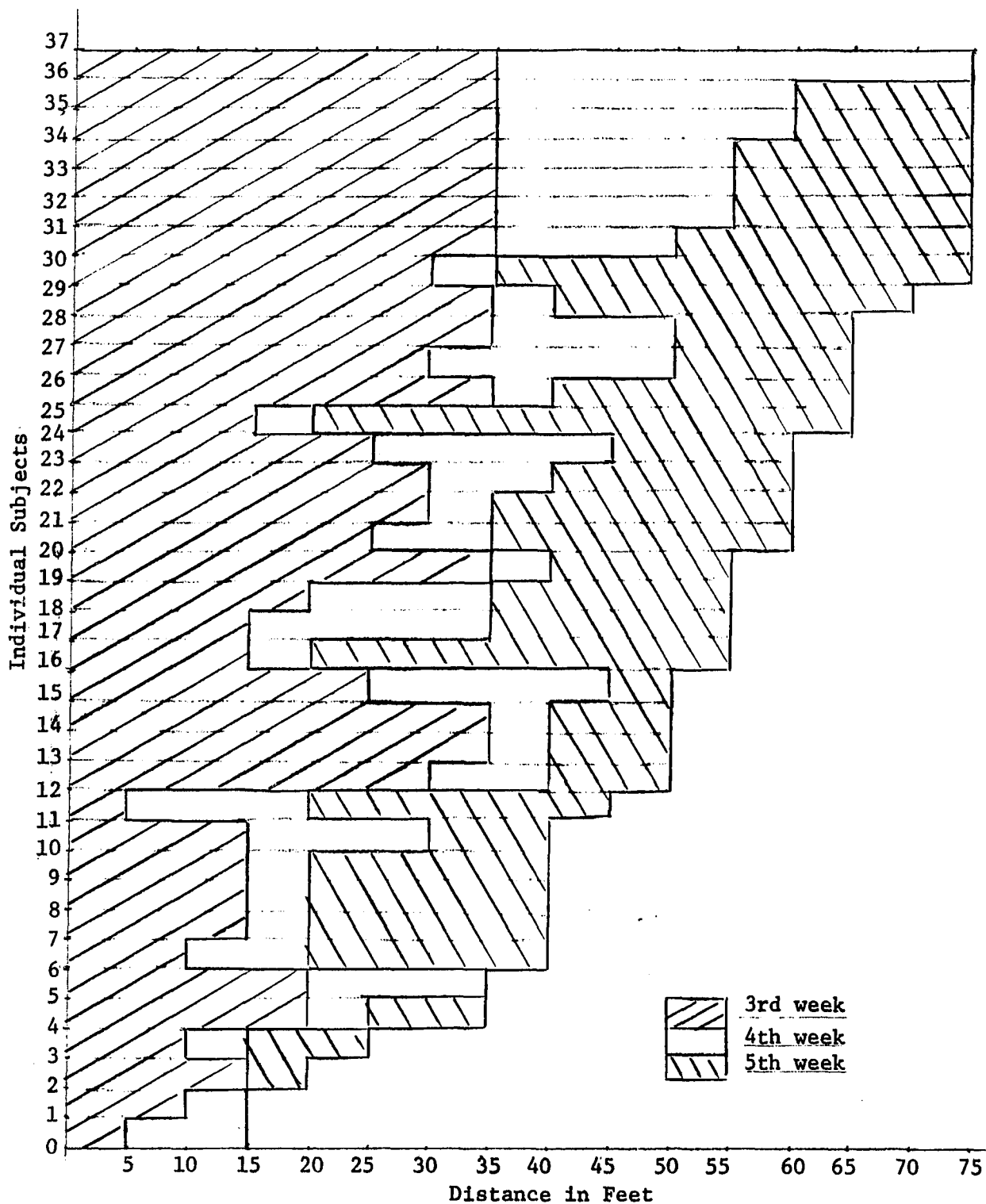


Figure 6

Swimming Improvement--Front Crawl for Individual Subjects According to Final Swimming Performance

subject subsequently swam twenty-five feet on the second test, and forty-five feet on the third and final test, falling just short of the goal of fifty feet. The other subject never progressed beyond fifteen feet over the five-week period.

Even though practice and preference were not highly correlated with the level of aspiration of the subject, preference was positively correlated with the three performances. This would indicate that those subjects who preferred swimming did seem to improve more. The correlations were, respectively, .33, .39, and .35 with the three performances. The fear factor also played a significant role, with correlations between the three swimming performances and fear rating, respectively, .63, .50, and .53, indicating that those subjects with a low fear rating did learn a little faster. All correlations between initial, as well as average level of aspiration, correlated positively with the three performances. For the initial level of aspiration the coefficients were .61, .56, and .50; for the average level of aspiration, the correlations were .52, .35, and .42.

Anxiety and practice were both positively related to performance, but with such low correlation coefficients, that no conclusions can be drawn from this finding.

The three performances had intercorrelations of .83 between the first two tests, .77 between the first and the second test, and .79 between the last two tests.

The elementary back-stroke as may be remembered was introduced to the subjects at the beginning of the second week. It was expected that the sinkers would have more difficulty in learning the elementary

back-stroke, because of the glide involved in the stroke. At the final performance only four subjects out of the total group of thirty-seven could swim thirty-five feet of the elementary back-stroke. This poor result was attributed to the fact that not enough instruction time could be allocated to this phase of the study in the five weeks' instruction program. The four subjects who did learn the elementary back-stroke belonged in the floating group; none of the sinkers learned the stroke. The correlations show a similar pattern to the front crawl performance tests, but it was felt that the results are unreliable in that most of the subjects did swim on their backs and thus achieved some distance, but did not perform an acceptable, or even recognizable form of the elementary back-stroke.

It was interesting to note that the four subjects who improved most, and actually accomplished the American National Red Cross beginner's test, had the following factors as possible contributors to their accomplishment: Two were floaters, two were sinkers; all four had a high level of aspiration; their average anxiety score was 5.9, with three of them in the medium anxiety group and one in the low group; their preference record showed two on the high and two on the low preference end of the scale, with practice in a similar pattern; two practiced a lot, and two did not; none of the four showed any observable fear signs; the sociological background factors did not show a consistent pattern, except for some water experience before, encouragement, and friends who swim, which all four reported to have had.

The questionnaire administered after the five week instructional period (Appendix D), showed the following results:

1. Seventeen subjects intended to continue instruction in swimming. Twenty subjects planned to continue swimming on a recreational basis only.
2. All thirty-seven subjects stated that a course of this nature would be beneficial for future students; the majority of the group made comments indicating that they thought an extension of the five-week period would have been beneficial.
3. About two-thirds of the group found the greatest satisfaction in the fact that they did reach their goal in that they could swim some distance in deep water. The other third seemed to find satisfaction in that they had lost some of their original fear of water.
4. Disappointments for all seemed to indicate a lack of being able to swim on their back, and in some cases a disappointment of not having learned to swim better.

Summary

Biological, psychological, and sociological aspects of the learning rate in swimming were examined for the Negro male subject.

The biological differences among the subjects with respect to their initial floating ability, did not affect their learning rate in swimming the front crawl.

Psychological aspects as measured by the Cattell anxiety

battery did not seem to have a measurable effect on the learning rate of the subject; however, specific fear of the water, as measured by an observable fear rating, did support the hypothesis that the subject with specific fear of the water, does have a slower rate of learning than the subject who has no apprehensions with respect to aquatic activities.

The level of aspiration of the Negro male subject as expressed initially, as well as prior to each performance test, proved to be highly significant. Overall, the subjects seemed to be accurate in predicting their own performance in terms of a teacher set goal, as well as in terms of their own future goal.

The general implications of sociological factors that were thought to have an influence on the Negro male beginning swimmer with regard to his learning rate in swimming showed the following patterns. The subjects who had some previous experience in the water, preferred swimming as an activity, and practiced, did learn to swim faster. Encouragement by friends and the ability of friends or family to be able to swim, did not show a consistent pattern with respect to the subjects' learning rate in swimming. The family background in terms of the size of the family, the educational level of the parents, and whether or not one or both parents lived at home, did not seem to produce any consistent pattern in the learning rate of the subject.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to discover the relative effects of anxiety, level of aspiration, and selected sociological background factors on the length of time it takes a Negro male beginning swimmer, with and without floating ability, to learn to swim.

The existing literature was reviewed from a bio-socio-psychological point of view. The biological aspects were limited to initial floating ability. The sociological factors focused on the concept of level of aspiration, and certain family and environmental background factors that were thought to influence the subjects' subsequent aspiration and desire to learn to swim. The psychological aspects concentrated on general anxiety and specific fear of the water.

Two pilot studies were conducted at A & T State University, in Greensboro, North Carolina, during the fall of 1969, in order to determine the feasibility of the proposed study. The actual study was conducted in the spring of 1970 with an all Negro male sample of thirty-seven freshmen, who were enrolled in a required aquatic section of the physical education program at A & T. The investigator taught the thirty-seven beginning swimmers, for a period of five weeks,

twice a week. All instruction conformed to the American National Red Cross instructional manual.

Prior to the actual instruction in the water, a questionnaire was administered to all subjects obtaining information on the subjects' previous swimming experience, family background, and preference for swimming.

Anxiety was measured by the use of the IPAT-8-Parallel-Form Anxiety Battery. This test was administered three times, once prior to the instructional program, the second time at the pool side, just before the first deep water experience, and the last one after the final performance test. The first time in the water, an observable fear check-list was administered, and the subjects were classified according to three groups: no fear, some apprehension, and extreme fear cases.

Level of aspiration was measured four times, by asking the subject to state the distance he thought he could swim, providing the subject with knowledge about the distance he was expected to swim. The aspiration level was initially recorded before instruction in the pool began. The second, third, and fourth times the level of aspiration was stated just prior to the three performance tests, administered in the third, fourth and final weeks of the study.

Floating ability was measured twice: the first time in the pool and again at the beginning of the third week. A classification of floaters versus sinkers was made on the basis of the turtle-prone float combination the second time. The swimming performance was

measured three times on the front crawl, and a record kept of the progress made. The goals for the three swimming tests had been set at, respectively, thirty-five, forty, and fifty feet. During the five-week period a record was kept of the subjects' practice outside of class time.

The statistical design was divided into three areas: biological, psychological, and sociological. All analyses of variance and a correlation matrix were computed through the services of the computer center at the University of North Carolina at Greensboro, North Carolina.

Biological

Four analyses of variance were computed to discover possible differences between floaters and sinkers with respect to their learning rate in swimming. No differences were found. All subjects improved at about the same rate.

Psychological

Four analyses of variance were performed in an attempt to discover differences between low, medium, and high anxious subjects, with regard to their learning rate in swimming, as well as their initial floating ability. Again, no differences were found on this basis.

Five analyses of variance were performed in order to detect any differences in the learning rate, dependent on the subjects' level of aspiration and his initial floating ability. It was found that the subjects with a high level of aspiration did improve significantly

over the subjects with a realistic level, who in turn, performed better than the subjects in the low level of aspiration group.

A 12-12 correlation matrix was computed, using the Pearson-Product-Moment correlation technique, in order to determine various relationships between selected psychological factors. A very low, positive relationship was found between anxiety and level of aspiration, but the statistic was not significant, except for the third anxiety test as compared with the average level of aspiration. Anxiety in general and specific fear of the water also showed a very low, positive correlation, significant only for the first anxiety test.

Sociological

Four graphs were constructed to show the relationship between selected sociological factors and the learning rate of the subject. The correlation matrix provided additional insight into the relationships between anxiety, level of aspiration, preference, practice, and the learning rate in swimming.

An attempt was made to look for similarities in background factors for those subjects who learned to swim faster, had a high level of aspiration, and a low or medium anxiety score.

The results indicated that level of aspiration was a highly significant factor with regard to the learning of swimming, but anxiety scores were not. In learning the front crawl, floating or sinking ability did not play a significant role. The elementary back-stroke results were judged unreliable, because of the poor performance in the form of the stroke. Overall, those students who

had some experience in the water before, preferred swimming, had a high practice record, and did learn a little faster. Encouragement, and the swimming ability of friends and family did not seem to show a consistent pattern. Whether the subject came from a small, medium, or large family, whether parents lived at home, and the educational level of the parents, also showed no consistency; no pattern emerged out of the graphic and descriptive analysis.

Conclusions

Originally it was stated that few, if any, Negro male subjects excel in swimming or aquatic activities, as evidenced through the review of the literature. This study attempted to find out some of the biological, sociological, and psychological factors that may contribute to this seeming lack of swimming ability in the Negro male. The following conclusions may be drawn:

1. The majority of subjects did learn to swim the front crawl, fifty feet or more, in a five-week period.
2. Whether the assumption that the Negro male does not float as well as his white counterpart is true or not is unimportant as far as his learning to swim the front crawl is concerned.
3. The Negro male sample was found to be slightly less anxious than the norm, but this fact did not help or hinder subsequent swimming performance.
4. Fear is an important aspect of the rate of learning in

swimming; as fear declines, the learning rate improves.

5. Level of aspiration was found to be the most influential aspect of the learning rate in the Negro male. The higher the level of aspiration, the better the performance of the subject.
6. Some previous experience, willingness to practice, and in general a preference for swimming were dominant traits in the faster learning group.
7. Encouragement to learn to swim by friends or family, or the ability of friends and family as deep water swimmers, did not make an appreciable difference with regard to swimming-learning ability.
8. Family background factors such as size of the family, parents living at home, or the educational level attained by the parents did not affect the subjects' rate of learning in swimming.

On the basis of the above-mentioned conclusions, it seems reasonable to contribute the lack of "excellent" Negro male swimmers primarily to the behavioral implications. A lack of high aspirations, little or no previous experience in or even around the water, a low preference for swimming compared to other activities, and less opportunity to practice, may be the basis for the apparent lack of large numbers of Negro male swimmers.

Recommendations

Based on the analyses and discussion of the data in Chapter IV

and the conclusions drawn from the analyses, recommendations seem to be in order.

1. If this study is repeated, it is suggested that an eight-week instructional period be used instead of five weeks. Even though the front crawl was learned by the majority of the subjects, the elementary back-stroke was not accomplished, nor was there enough time to teach any reversal of direction in deep water for the majority of the group.
2. A follow-up study seems to be indicated to look into methodological differences, for those students who learn fast versus those students who are slow learners. It is suggested that for the original instruction, beginners can and should be taken as a group, but that individual differences show up early in the instruction period; and after four or five weeks, differentiation in methodology could benefit both groups.
3. A follow-up study with the major focus on the concept of level of aspiration would be highly recommended. If level of aspiration does indeed influence the learning rate of the potential swimmer, as was found in this study, it seems important to find out more why some subjects aspire higher than others, and what, if anything, can be done to raise the level of aspiration of potential swimmers.
4. With previous experience and willingness to practice

playing such an important role in the learning rate of swimming, a study in the area of available facilities for predominantly Negro areas may prove beneficial, to bring the lack of facilities to the attention of the public for hopeful remedy.

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APPENDIX A

SWIMMING BACKGROUND QUESTIONNAIRE

FAMILY BACKGROUND QUESTIONNAIRE

PREFERENCE OF ACTIVITY

North Carolina State Agricultural
and Technical University
Greensboro, North Carolina

SWIMMING BACKGROUND QUESTIONNAIRE

Name _____ Age _____

Address _____ Phone _____

Check "yes" or "no" in the space provided at the end of each question.

1. Have you ever had the opportunity to swim before? Yes _____

No _____

If "yes", where? a. At the beach _____
b. Waterhole _____
c. Lake _____
d. Pool _____
e. Other _____

2. Have you ever had instruction in swimming? Yes _____

No _____

If "yes", where and by whom taught?

3. Has anybody ever encouraged you to learn to swim? Yes _____

No _____

If "yes", explain who. a. Father _____
b. Mother _____
c. Friends _____
d. Teacher _____
e. Other _____

4. Do most of your friends swim in deep water? Yes _____

No _____

5. Does your family own a boat or canoe? Yes _____

No _____

6. Have you ever been boating, sailing, or canoeing? Yes _____

No _____

If "yes", explain what kind of boat, and how often.

7. Is it important to you to learn how to swim? Yes _____

No _____

If "yes", briefly indicate why.

8. To the best of your ability, describe if you have any apprehensions regarding swimming, and if so, why. (One paragraph)

FAMILY BACKGROUND QUESTIONNAIRE

1. The following persons in my family live at home: (answer "yes" or "no")

- a. Father _____
- b. Stepfather _____
- c. Mother _____
- d. Stepmother _____
- e. Brothers _____ (how many?) _____
- f. Sisters _____ (how many?) _____
- g. Other _____ (who?) _____

If married:

- a. Wife _____
- b. Children _____ (how many?) _____

2. From the list above, who can swim in deep water?

3. My father's occupation is _____

My mother's occupation is _____

4. Highest grade completed by my father is: (indicate grade finished)

- a. Grade school _____
- b. High school _____
- c. Technical _____
- d. Business _____
- e. College _____

5. Highest grade completed by my mother is: (indicate grade finished)

- a. Grade school _____
- b. High school _____
- c. Technical _____
- d. Business _____
- e. College _____

All information on the above questionnaires will be used for the purposes of the proposed study only.

PREFERENCE OF ACTIVITY

The Department of Physical Education offers the following activities listed below. Please indicate your first three choices, IN ORDER OF PREFERENCE, by number.

1. for first choice
2. for second choice
3. for third choice

_____ Track-Field

_____ Tennis-Badminton

_____ Bowling

_____ Swimming

_____ Recreational Games (archery, deck tennis, etc.)

_____ Golf

_____ Softball-Baseball

_____ Soccer-Speedball

_____ Touch Football

_____ Other: List the activity (activities) you would like to see added to the present curriculum.

APPENDIX B

FORM A

8-IPAT-PARALLEL FORM ANXIETY BATTERY

FORM A

Answer each of the following questions according to what is true of you at this moment (not last week, or usually). Try not to use the middle or uncertain response any oftener than you have to, perhaps once every three or four questions. Remember, answer what is true for you now, at this moment.

1. Often I get angry with people too quickly.

A. True	B. In between	C. False
---------	---------------	----------
2. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests.

A. True	B. Uncertain	C. False
---------	--------------	----------
3. I need my friends more than they seem to need me.

A. Rarely	B. Sometimes	C. Often
-----------	--------------	----------
4. I am brought almost to tears by having things go wrong.

A. Never	B. Very rarely	C. Sometimes
----------	----------------	--------------
5. I find that my interests, in people and amusements, tend to change fairly rapidly.

A. True	B. In between	C. False
---------	---------------	----------
6. I have periods when I cannot refrain from a mood of self pity.

A. Yes	B. In between	C. No
--------	---------------	-------
7. If I had my life to live over again I would:

A. plan very differently	B. In between	C. want it the same
--------------------------	---------------	---------------------
8. I prefer to marry someone who:

A. commands general admiration	B. In between	C. has artistic and literary gifts
--------------------------------	---------------	------------------------------------
9. I am always glad to join a large gathering, e.g., a party, dance, or public meeting.

A. Yes	B. In between	C. No
--------	---------------	-------
10. I can generally put up with conceited people, even though they brag or show they think too well of themselves.

A. Yes	B. In between	C. No
--------	---------------	-------

FORM A

Everyone knows that some things irritate him more than others, that is, rub him the wrong way. You will be given a list of such happenings that annoy some people. For each happening, tell us whether you find it very annoying, somewhat annoying, or not annoying.

	<u>Very</u> <u>Annoying</u>	<u>Somewhat</u> <u>Annoying</u>	<u>Not</u> <u>Annoying</u>
1. A button that comes off when you are ready to go out.	_____	_____	_____
2. Electric appliances that go out of order.	_____	_____	_____
3. Being asked to repeat something you just said.	_____	_____	_____
4. Stopping for red lights or stop signs while driving.	_____	_____	_____
5. People who keep their radios loud.	_____	_____	_____
6. Library books that have been defaced or from which a page has been torn.	_____	_____	_____
7. Highly seasoned foods.	_____	_____	_____

Answer each of these questions by choosing the response that is closest to right for you.

1. How often have you been very close to large wild animals that were not in cages?

A. Often B. Several times C. Once D. Never

If this were to happen now, I think I would

- A. Handle the situation very well
 B. Handle the situation satisfactorily
 C. Handle the situation poorly.
 D. Just go to pieces

2. How much ice skating have you had?

A. 0 hours B. 10 hours C. 50 hours D. 200 hours

With a little practice I think I would be

A. Very good B. Good C. Average D. Fair

3. How much typing experience have you had?

A. 0 hours B. 25 hours C. 50 hours D. 100 hours

With a little practice at typing I think I could become

A. Fair B. Average C. Good D. Very good

4. How much have you studied foreign languages?

A. Very thoroughly C. A little bit
 B. Fairly thoroughly D. Not at all

I think that with about three months' practice studying a foreign language, I could be

A. Excellent B. Good C. Fair D. Poor

5. Have you ever tried to cut people's hair?

A. Never B. Rarely C. Occasionally D. Often

With some practice at cutting hair I could be

A. Excellent B. Good C. Fair D. Poor

6. Have you ever tried to breed cats or dogs?

A. Repeatedly B. Rather often C. Sometimes D. Never

I think I should be successful at breeding dogs and cats.

A. Not at all B. Possibly C. Probably D. Certainly

7. Have you ever played the drums?

- A. Yes, often B. Once in a while C. Rarely D. Never

With some lessons, what kind of a drummer would you be?

- A. Excellent B. Pretty good C. Fair D. Poor

Sometimes we do things that perhaps we should not do and sometimes we fail to do things that we should do. No one acts all the time in an ideal way, but it is often hard to be honest and admit our actual behavior. Please try to answer these questions in the way which you believe is true for you. Answer only Yes or No. Answer each question.

	Yes	No
1. At times, I have been more afraid than I would dare admit.	_____	_____
2. I never let my friends down.	_____	_____
3. I sometimes lose my temper over things that I eventually realize are quite trivial.	_____	_____
4. I have always obeyed the law.	_____	_____
5. I am always careful with the property of others, even if it belongs to someone I dislike very much.	_____	_____
6. I sometimes think of things that are too bad or dirty to talk about.	_____	_____
7. I have sometimes been quite mean to animals.	_____	_____

Here are some statements about some past events and some events which could possibly happen in the future. It's the kind of thing you'd read about in the newspaper. There are three possible comments given on each "news item." Choose the one that comes closest to being how you'd react to this news item.

- 1. "Movies are getting better and better."
 - a. Ad-men's lies are getting bigger and bigger. _____
 - b. No-hum. _____
 - c. I wonder what a panel of dramatic experts would say to that. _____

- 2. Smith won the mile race in record time.
 - a. Hurray! That's a terrific honor for the school. _____
 - b. His past record showed that that was likely. _____
 - c. I would not like to train as hard as he had to. _____

- 3. A novel has recently appeared dealing with a free-love theme.
 - a. Even a poor novel often sells with such a theme. _____
 - b. I suppose some narrow-minded person will want to censor it. _____
 - c. It's a wicked thing to stir up the imagination of the young people with filth. _____

- 4. Another Political Conference between nations is being scheduled.
 - a. There'll be enough hot air to raise the temperature all over the world. _____
 - b. It will be interesting to follow the results in the newspapers. _____
 - c. I hope something comes out of this one. _____

Each of the characteristics in the list below are things some people have more than others. For each characteristic, let us know how you stand on this characteristic. If you have it, do it, or experience it more than most people your age and sex, check "more than most." If you're average in this respect, check "average"; if below average (compared to others your age and sex), check "less than most." Don't spend a lot of time thinking about each one. The first answer that comes to mind is usually the best and most natural for you.

	<u>Less than most</u>	<u>Average</u>	<u>More than most</u>
1. Moody.	_____	_____	_____
2. Have nervous movements.	_____	_____	_____
3. Blush or flush.	_____	_____	_____
4. Get drowsy.	_____	_____	_____
5. Have indigestion.	_____	_____	_____
6. Dramatize life (act a lot).	_____	_____	_____
7. Have headaches.	_____	_____	_____
8. Feel like crying.	_____	_____	_____

Everyone knows that some things embarrass him more than others, that is, make him blush or be uncomfortable. Here below is a list of some happenings. For each one tell us whether you would find it not embarrassing, somewhat embarrassing, or very embarrassing.

	<u>Not</u> <u>Embarrassing</u>	<u>Somewhat</u> <u>Embarrassing</u>	<u>Very</u> <u>Embarrassing</u>
1. At work, your boss asks you a question you can't answer.	_____	_____	_____
2. Being the butt of a practical joke, for example, getting a "hot foot."	_____	_____	_____
3. Purchasing a sexy magazine in a crowded store.	_____	_____	_____
4. Forgetting your own address or telephone number.	_____	_____	_____
5. Accidentally spraying saliva (spit) when talking.	_____	_____	_____
6. Forgetting yourself and swearing in front of a member of the opposite sex.	_____	_____	_____
7. Leaving a small tip when you're short of money.	_____	_____	_____

APPENDIX C

OBSERVABLE FEAR CHECK-LIST

Observable Fear Check-list

1. Refusal to enter the water	1
2. Hesitation to enter the water	1
3. Hesitation to let go of the wall	1
4. Hesitation to submerge face	1
5. Hunching of shoulders	1
6. Unable to hold breath (under water) 20 sec.	1
7. Unable to blow bubbles	1
8. Dry off face excessively	1
9. Unable to open eyes under water	1
10. Unable to take feet off the bottom, while holding on to the side	1
	<hr/>
Total	10

APPENDIX D

FINAL QUESTIONNAIRE

Final Questionnaire

Name _____

1. In your swimming course of the last five weeks:

(a) What offered you the greatest satisfaction? _____

_____(b) What was your major disappointment? _____

2. Do you think a course like this would be beneficial to another student who had the same swimming problems you had?

(a) Yes _____ Why? _____
_____(b) No _____ Why? _____

3. In the future, do you intend to:

(a) Sign up for a regular semester "swimming course"? Yes _____

No _____

(b) Continue swimming on a recreational basis only? Yes _____

No _____

(c) Not take any more swimming? Yes _____

No _____