

Archives
Closed
LD
175
.A40K
Th
484

PERSONALITY FACTORS OF STUDENTS IN OUTDOOR
" RELATED PHYSICAL EDUCATION COURSES

by

Thomas J. Smith

Approved by

Colette S. Garrison

Dr. Colette S. Garrison
Chairman, Thesis Committee

Judith A. Clarke

Dr. Judith A. Clarke
Professor of Health, Physical
Education and Recreation

William Steinbrecher

Dr. William Steinbrecher
Professor of Health, Physical
Education and Recreation

E. Ole Larson

Dr. E. Ole Larson, Acting
Chairman, Department of Health,
Physical Education and
Recreation

Richard H. Rupp

Dr. Richard H. Rupp
Dean of the Graduate School

VITA

Name: Thomas J. Smith

Permanent address: Route 1
Mouth of Wilson, Virginia

Degree and date to be conferred: M.A., 1978

Date of birth: July 14, 1954

Place of birth: Jefferson, North Carolina

Secondary education: Ashe Central High School
Jefferson, North Carolina, 1972

Collegiate institutions attended:

	Dates	Degree	Date of Degree
Guilford College	1972-73	Transferred	None
Appalachian State University	1974-76	B.S.	1976
Appalachian State University	1976-78	M.A.	1978

Major: Health and Physical Education

Minor: Junior College Education

PERSONALITY FACTORS OF STUDENTS IN OUTDOOR
RELATED PHYSICAL EDUCATION COURSES

Thesis
LD
175
A40K
Th
484

A Thesis

Submitted to the Graduate Faculty
of Appalachian State University
in Partial Fulfillment of the
Requirements for the degree Master
of Art
in
The Department of Health, Physical
Education and Recreation

by

Thomas J. Smith, B.S.
Appalachian State University

July 10, 1978

TABLE OF CONTENTS

	Page
VITA	ii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
ABSTRACT	viii
Chapter	
I. INTRODUCTION	1
STATEMENT OF THE PROBLEM	2
SUBPROBLEMS	3
HYPOTHESES	3
DEFINITION OF TERMS	5
16 PF	5
Hiking and Camping	5
Activity Control Group	5
Outdoorsmanship	5
Teacher Preparation Control Group	6
BASIC ASSUMPTIONS	6
Personality Measurement	6
Course Content	6
DELIMITATIONS	7
LIMITATIONS	7
Differences in Age	7
Differences in Academic Major	8

Chapter	Page
Instructional Differences	8
Climatic Differences	8
Nonrepresentative Sampling	9
II. REVIEW OF RELATED LITERATURE	10
III. PROCEDURES	25
ACQUIRING COOPERATION	25
ADMINISTRATION OF TESTS	25
ORGANIZATION AND ANALYSIS OF DATA	26
IV. RESULTS	28
PERSONALITY PROFILE DIFFERENCES	28
INDIVIDUAL PERSONALITY TRAIT DIFFERENCES	28
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDY	56
SUMMARY	56
CONCLUSIONS	58
RECOMMENDATIONS FOR FURTHER STUDY	58
BIBLIOGRAPHY	60
APPENDIX	
A. PERSONALITY TRAITS AS MEASURED BY THE 16 PF	67

LIST OF TABLES

Table	Page
1. Between Group Profile Statistics	29
2. <u>t</u> Tests on Group Mean Sten Pretest Scores on Individual Personality Factors for Groups A (Outdoor Activity) and B (Activity Control)	31
3. <u>t</u> Tests on Group Mean Pretest-Posttest Differences on Individual Personality Factors for Groups A (Outdoor Activity) and B (Activity Control)	35
4. <u>t</u> Tests on Group Mean Sten Pretest Scores on Individual Personality Factors for Groups C (Outdoor Teacher Preparation) and D (Teacher Preparation Control)	39
5. <u>t</u> Tests on Group Mean Pretest-Posttest Differences on Individual Personality Factors for Groups C (Outdoor Teacher Preparation) and D (Teacher Preparation Control)	43
6. <u>t</u> Tests on Group Mean Sten Pretest Scores on Individual Personality Factors for Groups A (Outdoor Activity) and C (Outdoor Teacher Preparation)	48
7. <u>t</u> Tests on Group Mean Pretest-Posttest Differences on Individual Personality Factors for Groups A (Outdoor Activity) and C (Outdoor Teacher Preparation)	52

ABSTRACT

Personality factors of outdoor related activity and teacher preparation courses were compared with control groups in order to determine differences between groups present at the beginning of the instructional term, and those resulting from course participation. An outdoor related activity group was similarly compared with an outdoor related teacher preparation group.

The study was conducted at Appalachian State University during the spring semester of 1978. Personality factors were measured using Cattell's 16 PF, Form A. Hotelling's T^2 test of significance revealed no significant profile differences between any of the groups tested. The t test of significance did indicate some significant between group differences on individual personality factors.

It was concluded that:

1. The outdoor activity students were more self-sufficient and less group dependent than the activity control group, before course participation.

2. The outdoor teacher preparation group grew more shy during the course of study, whereas the teacher preparation control group grew more venturesome.

3. The outdoor activity students were more imaginative and less practical than were the outdoor teacher preparation group, before course participation.

4. The outdoor activity students were more self-sufficient and less group dependent than the outdoor teacher preparation group, before course participation.

Chapter I

INTRODUCTION

Past theories have implied that sport exerts a positive influence upon the personality development of participating individuals. Blanchard concluded that classes in education activity desirably affected personality development in high school students (7:39). The American Physical Education Association suggested that attitude and personality development occurs through organized physical education and athletics, and that such development should be considered an education goal (1:58).

This theory, however, has undergone scrutiny from researchers in sport psychology. For example, Werner found that personality structure did not differ significantly between athletes and nonathletes (46:130).

Our culture has long been influenced by the opinion that understanding and enjoyment of the out-of-doors has a positive effect on the human personality. In 1798, William Wordsworth expounded, "To her fair works did nature link/
The human soul that through me ran" (50:78). These lines, as well as those of others, appear to be a part of our culture.

Many individuals and organizations oriented toward promotion of outdoor activities have suggested such

activities to be an enriching and viable alternative to crime and delinquency among our young people. Organizations such as Scouting International, the National Sierra Club and even the National Rifle Association were founded, wholly or partly on the belief that there is some intrinsic effect beneficial to the personality of those who engage in outdoor activity.

In 1975, the Department of Health, Physical Education and Recreation at Appalachian State University added to its curriculum a program in outdoor education. These courses were offered at both the activity and teacher preparation levels. Course content involved both classroom instruction and practical experience in the areas of archery, backpacking, survival and safety. Camping, orienteering, compass usage and equipment selection were also included.

Since implementation, these courses have met with phenomenal interest from students. In the spring semester of 1978 the combined sections of these two courses were able to accommodate 75 students. With such interest manifested in this part of the curriculum, research was justifiable to determine what connection outdoor activities might have on the personality of the participant.

STATEMENT OF THE PROBLEM

The following problem was defined for investigation:

1. This study investigated what effect instruction in outdoor activities might have on selected

personality factors of students enrolled in outdoor related courses.

2. This study attempted to discover whether there are any differences inherent in the personality factors of students registered for outdoor related courses and other activity or teacher preparation courses.

3. This research further attempted to discover any personality differences, inherent or acquired, in students enrolled in outdoor related courses at the activity level and also students enrolled in teacher preparation level outdoor related courses.

SUBPROBLEMS

The following subproblems were identified for solution:

1. Acquiring the cooperation of students and instructors in the sections involved.
2. Administration of tests.
3. Organization and analysis of data.

HYPOTHESES

The following hypotheses were defined for this investigation:

1. There will be no statistically significant inherent difference in the 16 personality factors of students enrolled in outdoor related activity courses and those enrolled in other activity courses.

2. There will be no statistically significant difference in the degree to which personality factors of students are modified as a result of course participation in outdoor related and non-outdoor related activity courses.

3. There will be no statistically significant inherent difference in the other 16 personality factors of students enrolled in outdoor related teacher preparation courses and those enrolled in other teacher preparation courses.

4. There will be no statistically significant difference in the degree to which personality factors of students are modified as a result of course participation in outdoor related and non-outdoor related teacher preparation courses.

5. There will be no statistically significant difference in inherent personality characteristics between students in the outdoor oriented activity courses and students in the outdoor oriented teacher preparation courses, prior to the participation in the courses themselves.

6. There will be no statistically significant difference in the degree to which personality factors of students are modified as a result of participation in outdoor oriented activity courses and participation in outdoor oriented teacher preparation courses.

DEFINITION OF TERMS

16 PF

This is a personality inventory developed by Raymond B. Cattell which examines 16 factors of human personality.

Hiking and Camping

Physical Education 1048, sections 101, 102 and 103 were the course numbers designated for Hiking and Camping as the outdoor oriented course at the activity level. This course was allocated .5 semester hours credit, fulfilling general education requirements for physical education. Statistically, these combined sections were labeled as A.

Activity Control Group

A group of students who had not been involved in any aspect of the outdoor curriculum was used as a basis of comparison for the Hiking and Camping sections. This group was comprised of a class of students in another activity course. Statistically, this group was labeled as B.

Outdoorsmanship

Physical Education 3091, sections 101 and 102 were the course numbers designated as teacher preparation courses in the various areas of outdoor education. Statistically, these combined sections were labeled as C.

Teacher Preparation
Control Group

A group of students who have not been involved in any facet of the outdoor curriculum were used as a basis of comparison for the Outdoorsmanship sections. This group was comprised of a class of students in another physical education teacher preparation course. Statistically, this group was labeled as D.

BASIC ASSUMPTIONS

Personality Measurement

The 16 PF has been one of the most widely known and used personality inventory techniques known to psychologists at this time. "It is perhaps the most comprehensive system in the field of factor analytically derived tests for measuring and describing normal personality functions" (15:57). Thus, this test was deemed feasible and appropriate for this study. The 16 PF Personality Profile Sheet is included in Appendix A, page 67.

Course Content

Due to course content, material presentation and field experience, the outdoor related courses studied were designed to encourage development and appreciation for various aspects of outdoor activities. These experiences may have affected personality development.

DELIMITATIONS

This study involved 173 students. Twenty-one subjects were Hiking and Camping students, with 18 students enrolled in Outdoorsmanship. The activity and teacher preparation control groups were comprised of 17 students. All groups were exposed to the prescribed course of study and experience in the respective courses as determined by the assigned instructor. The course of study took place during the spring semester of 1978.

Personality was measured by the 16 PF near the beginning and again near the end of the semester. The posttest was not administered until all class outings had taken place. Specific information relating to this study was not provided to the subjects. Therefore, knowledge of the purpose did not influence test responses.

Data were analyzed in accordance with previously stated hypotheses by between group comparison of mean sten scores on each personality trait. Significant differences of each trait were determined by using t tests. Total personality profile differences were determined by using Hotelling's T^2 test of significance.

LIMITATIONS

Differences in Age

There were some differences in age between the Hiking and Camping sections and Outdoorsmanship sections.

It is possible that this may have resulted in significant personality differences not related to the variables of this study.

Differences in Academic Major

There may have been some differences in academic majors between the Hiking and Camping sections and Outdoorsmanship sections. The activity course meets general education requirements, and these sections may have been comprised primarily of non-physical education majors. The skills and techniques course is primarily oriented toward teacher preparation, and may have been composed primarily of physical education and recreation majors. This difference could result in significant personality differences not related to the variables of this study.

Instructional Differences

Differences in instructor personality and teaching methods among the sections studied may have caused differences in personality change resulting from the courses. These circumstances could not feasibly be controlled in this situation, and were related to the variables of this study.

Climatic Differences

Weather is a strong factor affecting the enjoyment of outdoor activities. Differences in weather conditions experienced by different classes during class outings could

have affected the attitude of the participant. This may have caused differences in personality change among the test groups not related to the variables of this study.

Nonrepresentative
Sampling

It is possible that one or more of the sections studied may not have been representative of the entire population in all personality factors studied.

Chapter II

REVIEW OF RELATED LITERATURE

By necessity, a large amount of man's time has been spent in work, or in some activity directly or indirectly connected with the satisfaction of his own needs, or the needs of others. Through his own ingenuity, however, man has constantly created quicker, more efficient means of meeting these needs. As the world's population has increased, more and more skilled occupations have been replaced by automation. According to Strom, ". . . in the leisure society that some futurists foresee, 15% of the population will be able to provide all necessary goods and services." It is furthermore stated that man will have to look elsewhere for the dignity and self-satisfaction formerly derived from gainful employment (42:93). Neulinger and Bereit suggested that leisure must replace work as the primary source of self-definition (30:114).

In light of this possibility, the controversial issue of whether physical education and leisure activities do in fact benefit psychological maturation or personality development has become more and more of interest. This is not a new controversy, however, and in years past a considerable amount of literature on this issue has been compiled.

According to a 1937 article by the American Physical Education Association, ". . . the teaching relationship affects the whole personality of the girl being taught" (1:59). In an early study of personality variables of athletes and nonathletes, Carter and Shannon shed some doubt upon this statement. The personalities of a group of athletes and a nonathletic control group were rated by the school athletic coach, the principal, and two teachers. Subjects were also administered the Symonds Adjustment Questionnaire, as a measure of social adjustment. No significant differences in personality or social adjustment were discovered between the two groups (10:130). Later, in a study incorporating the Sportsmanship Preference Record, McAfee found that the attitudes of 857 boys enrolled in physical education deteriorated significantly from the sixth to the seventh grade, and again from the seventh to the eighth grade (29:120). Results of this nature cast doubt upon the supposition that present physical education teaching methodology is conducive to better emotional and psychological development. Hellison found the relationship between self-attitude and physical education to be questionable, stating that there are too many outside variables to determine whether physical education, by itself produces any definite effect on the personality (19:44). Hellison further stated only a pre-post test design could effectively isolate the effects of a particular program;

however, ". . . the available pre-post test data do not form a sound basis for program implementation" (19:43).

Conversely, Baley suggested that recreational activities, such as fishing, aid in reducing emotional stress and tension which could cause psychosomatic ailments (2:2). Furthermore, in a later article, Scott claimed that psychosomatic relief, as well as attitude change, self-concept improvement, and social skill acquisition are all benefited by physical activity (41:308).

In an attempt to determine the effects of athletic participation and motor ability on the personality, Keogh administered the Larson Test of Motor Ability to 167 college students in varying degrees of athletic participation. Participation was categorized by intercollegiate, interscholastic, intramural and nonathletic. Personality was then measured by the California Psychological Inventory. Although some relationship was found between athletic participation and motor ability, one way analysis of variance revealed no relationship between either of these factors and the 18 separate personality scales employed (27:444).

In a study conducted by Wilson, 154 male high school students were tested to determine the relationship between personality and motor achievement. Motor achievement was measured by the McCloy General Motor Ability Test and the McCloy Motor Capacity Test. Certain components of the 16 PF and the Guilford-Zimmerman Temperament Survey were used

as measures of personality. The study was conducted at University High School, Normal, Illinois in the autumn semester of 1967. It was concluded that group dependence and motor achievement were related in high school boys. "Level of motor achievement was predictable with the use of grouped measured personality characteristics" (49:841).

A study of the relationship of attitudes of middle-aged men and their personal histories of physical activity was conducted by Harris. The Physical Activity History Questionnaire and Physical Activity Attitude Inventory were administered to active and sedentary middle-aged men. Chi square analysis revealed that the active men enjoyed competition and formed positive attitudes toward physical activity (18:203). "Without exception, the men who exercised regularly said they 'felt better' as a result of their participation" (18:208).

In a study involving 92 mature males, Keith used the Physical Activity Questionnaire and the Motivational Analysis Test to determine the motivational differences between the active and inactive groups. It was discovered that the sedentary group had a greater fear drive and a greater realization of conscience. The active men had a greater mating drive as well as a greater need for pleasurable sensation (26:222).

Research by Ismail and Trachtman involved physically fit and unfit males. Testing involved using the 16 PF in a pre- posttest design. The pretest indicated

that the high fitness group tended to be more emotionally stable and imaginative. By comparison of pretest and post-test scores, it was found that emotional stability was significantly increased by physical activity. Also, imaginativeness and self-sufficiency were increased by exercise (21:82).

Using the 16 PF, Kroll and Carlson tested Karate participants at three different levels of expertise to determine differences in personality. "Multiple discriminant analysis revealed no significant profile differences between the advanced, intermediate and novice classifications" (25:411).

In a study conceived for the purpose of validation and improvement of the Physical Activity Attitude Inventory, Sonstroem tested 710 high school boys from a variety of backgrounds. It was discovered that no significant relationship between self-acceptance and physical fitness existed (39:102).

Rohrbacher conducted a study of the relationship of body image and self-concept to weight loss in obese boys. A total of 204 obese and overweight boys were placed in an eight-week special camp experience. The weight loss experienced during the camp caused no change in either of the measured personality components (35:153).

In an attempt to isolate motivating factors of vigorous exercise, Brunner exposed adults to the Adjective Check List and a personality questionnaire. It was

suggested that there were several personality factors present in persons who engaged in vigorous physical activity which were at least partially responsible for that participation.

Participants scored significantly higher on intraception, number of favorable adjectives checked, defensiveness, achievement, dominance, and self confidence, whereas nonparticipants were superior in succorance and counseling readiness (9:464).

Behrman, using the Guilford-Zimmerman Temperament Survey found that nonswimmers exhibited restrained temperament, which caused them to be shy and overcautious. "Nonswimmers lack the necessary impulsiveness generally demanded in learning to swim" (3:169).

In a study of self-concept change conducted in a physical development clinic, Johnson, Fretz and Johnson discovered several significant differences during a pretest-posttest comparison. Results showed increases in willingness to be with clinicians, the father and larger groups of children. There was also a decrease in the discrepancy between actual and self-ideal height. These results indicated the probability of an improvement in self-concept and ". . . strongly suggest that an individualized physical development program can be of significant value in the total functioning of the child" (22:565).

Sperling conducted research involving varsity athletes, intramural athletes, and nonathletes. Results indicated that personality adjustment scores were

significantly higher for both groups of athletes than for the nonparticipants.

In interests or motivational values, the varsity and intramural groups were shown to be more significantly motivated by a desire for power and to a lesser extent by a social love for people. The nonathletic group was indicated to be more aesthetic and theoretically minded (40:362).

In 1965 Tillman studied the relationship between personality traits and physical fitness. The research involved examining a high fit group and a low fit group using the 16 PF and the Kuder preference record. The high fitness group was more extroverted and less tense than the unfit group according to data results. Also, the Kuder preference record revealed that the high fitness group tended to prefer accuracy and precision in its activities, and an interest in the out-of-doors and outdoor activities (44:488).

Athletes as well as exercising and nonexercising middle-aged men were tested by Pilch and Zelhart in an effort to determine motivational factors of exercise. The test device was the Motivational Analysis Test. Results indicated that university athletes exhibited significantly less fear of death, illness, accident, or loss of financial security than the middle-aged exercising group who, in turn, exhibited less fear than a middle-aged group of nonexercisers (33:232).

In a study using the 16 PF, the Eysenck Personality Inventory, and the Anxiety scale of the Multiple Affect Adjective Checklist, Young and Ismail examined adult men

before and after a physical fitness program. Groups were divided into high fit young, high fit old, low fit young, and low fit old categories.

Regardless of age, the high fit group was more intellectually inclined, emotionally stable, composed, self confident, easy going, relaxed, less ambitious, and unconventional than the low fit group (52:513).

This study, however, was conducted using only seven subjects in each group.

An earlier study by Whittle used 12-year-old boys in good and poor physical education programs in an attempt to relate physical, motor and personality development to elementary school physical education. Tests used were the Rogers Physical Fitness Index, the Methany-Johnson Test of Motor Educability, the Indiana Motor Fitness Test, the Vertical Jump Test and the California Psychological Inventory. No significant evidence to demonstrate social or personal adjustment resulting from improved physical activity was established (47:260).

Widdop and Widdop conducted research involving teacher education and physical education students. Results indicated these two groups differed on several personality traits.

Separate personality components revealed the student classroom teachers to be high on order affiliation, and patience, and the student physical education teachers to be high on warmheartedness, mental capacity, enthusiasm, perseverance, venturesomeness, imagination, shrewdness, self sufficiency, self image, exhibitionism, dominance and social presence (48:274).

Research conducted by Richard, Felker and Varoz in 1972 found that the self-concept of the child was affected by shared interests between parent and child, and also by the degree to which the child was interested in sports in general (34:214). Earlier work by Biddulph also suggested that personal and social adjustment was positively related to athletic achievement at the high school level (6:5).

In a study of the personality factors of weightlifters, Harlow subjected two groups of twenty subjects to the Thematic Completion Test and the Sentence Completion Test. It was discovered that weightlifters differed from the total population in several areas. Weight men had increased masculine inadequacy, dependency, frustration and narcissism (17:322). In another study of weightlifters, Thune discovered that the weightlifter was often excessively shy and low in self-confidence. The weightlifter would probably let someone else take full responsibility for a hiking party (43:303).

Darden found that weightlifters and bodybuilders tended to be "introspective, self opinionated and poor team members," although not sufficiently so to be regarded as abnormal (14:145). "Apparently, weight training can serve a specific function in the personality adjustment process of many males in our society" (14:146).

In a 1963 study by Cassell and Childers, scores on a battery of psychological tests were used to compare psychological components of 45 football team members to

national norms. No significant differences were found between the football players and the normal population (11:67). In a similar study by Bentson and Summerskill, personal adjustment factors were compared to levels of success in college athletics. Data were obtained through interviews as well as record search on 59 lettermen and 59 non-lettermen. No effect was found on personal adjustment resulting from success or participation in intercollegiate athletics; however, the athletes felt they had developed character (4:14).

In a test involving collegiate wrestlers, Kroll found no personality differences between superior, excellent and average criterion groups (24:52). In the same study it was concluded, however, that wrestlers did differ from the population norm toward toughmindedness, self-reliance and masculinity (24:54).

In a 1969 study by Berger and Littlefield, testing 30 outstanding football athletes, 30 nonoutstanding football athletes, and 30 nonathletes using the California Psychological Inventory, analysis of variance revealed no profile differences between any of the two groups. "These scores indicated that participation in varsity football may not develop more favorable characteristics of social interaction than nonparticipants (5:665).

A test by Singer utilized the Edwards Personal Preference Schedule, given to 69 baseball and tennis players, who were ranked high to low in level of performance:

Using multiple discriminant analysis, no significant differences in personality profiles were observed between the tennis and baseball groups, or between the highest 20 and lowest 20 ranked baseball players. When making between- and within-athletic group comparisons, a few traits, such as achievement Interception and Dominance emerged as significant (37:582).

As early as 1938, it was suggested by Watson that athletics is an important vehicle for personality development. "No one can guide physical education activities without at the same time guiding personality adjustment" (45:408). Collaborating research by Newman in 1968 indicated that faster swimmers in the 100 yard freestyle event accept leadership roles whereas faster swimmers in the 100 yard breaststroke were less impulsive and dominant (31:1052). In an earlier review of literature, Cooper stated that several differences between athletes and nonathletes existed. According to this research, athletes tended to be more socially aggressive, less anxious, more self-confident and more emotionally stable. Athletes also are higher in leadership and social adjustment (13:19).

Through use of the California Psychological Inventory, Schendel discovered several profile differences between athletes and nonathletes at three different scholastic levels. Ninth graders demonstrated higher sociability, initiative, leadership and sense of personal worth than nonathletes. Twelfth grade athletes were found to have almost identical differences as these, compared to nonathletes (36:66). Similar results were obtained at the

college level (36:67). In an earlier study involving the Minnesota Multiphasic Personality Inventory, Booth discovered that scores on the interest variable were significantly higher in nonathletes than in athletes. Also, freshman athletes and nonathletes scored significantly higher in anxiety than did varsity athletes (8:136).

In a study by Peterson, Weber and Tousdale, 38 female individual sports participants and 59 female team sports participants were tested, using the 16 PF. Comparisons were made in personality traits of the team and individual competitors. Using t tests, results revealed some differences between individual and team sports participants. The individual sports participants ". . . rated higher on the personality factors of dominance, adventurousness, sensitivity, introversion, radicalism and self sufficiency and lower on the factor of sophistication" (32:686).

Earlier research by Husman found that boxers were less aggressive than wrestlers or cross country runners. According to this study, boxers tended toward self direction of their aggression (20:423). "Cross country runners were more extrapunitive than control subjects" (20:425). This research indicated differences between the groups studied in outward manifestations of aggression, as well as intensity of aggression (20:423). Johnson, Hutton and Johnson concluded that a group of champion athletes in various sports were very self assured, aggressive, anxious, and emotionally unstable. It was also noted that the group

generally lacked emotional control. It was suggested that this group possessed ". . . a strong need for competitive achievement" (23:485).

La Place studied the relationship of success in professional baseball to personality by testing 49 major league players from the American and National leagues, and 64 minor league players from the Class D Coastal Plains League. The major league (success) group and the minor league (nonsuccess) group were tested using the Minnesota Multiphasic Personality Inventory. The t tests revealed that major league players were better able to channel their "drive" toward the desired goal, and adjust better to meet the rigors of high levels of notability and competition (28:318).

In 1940 Faquier stated that competitive sports are more often undertaken by boys with aggressive behavior tendencies, with these behaviors being manifested in the style of play. This was determined by subjecting aggressive and submissive boys to an activity preference rating scale. It was also discovered that hiking was preferred significantly more often by the submissive group. The aggressive group rated hiking 8th overall in preference, while this activity was rated 5th by the submissive boys (16:124). Slusher, in 1964, discovered that high school athletes were significantly lower in femininity than nonathletes (38:544).

Cavanaugh discovered a relationship between personality adjustment and recreation.

Emotionally well adjusted students tend to participate in more recreational activities than their less well adjusted fellow students. The distribution of the scores suggests the existence of a linear relationship between the number of recreations participated in and the degree of extroversion (12:73).

In 1953, a study was undertaken by Wylie to determine the recreational preferences of American families. A checklist was used to determine recreational preference. Among the many activities listed, picnicking ranked 2nd highest in participation, with 82% of the families polled participating at least occasionally. Fishing ranked 15th at 37%, hiking 33rd at 27%, and camping 39th at 23% (51:334). It was also concluded that the most popular pastimes were those requiring little advance preparation and organization (51:243).

Literature in the area of personality and its relation to physical fitness, physical activity, athletics and individual and team sport participation has been researched using various methods and techniques. Results often have been contradictory as to the relationship of personality to any aspect of physical education or sport, or as to the benefit of participation to the personality or to personality factors themselves.

Research does indicate that outdoor activities are of interest to many people in this country. Studies involving recreational preference appear to indicate

that American families participate in many and varied forms of outdoor activity.

Chapter III

PROCEDURES

ACQUIRING COOPERATION

Cooperation was sought from students and instructors were asked by the investigator as to whether their respective classes could be used as subjects for this study. An explanation of the study was given, and a testing time was determined. The 16 PF, Form A was administered during the regularly scheduled class and also at other times convenient to subjects who were not present on the day of testing.

At the time the tests were to be administered, the subjects were thanked for coming, and asked for their cooperation as subjects in this study. So that the purpose of this study would not be divulged, the subjects were told that the class had been selected at random from the overall physical education curriculum. The investigator suggested the purpose of study involved personality factors of physical education students. The students were furthermore told that all answers would be held in strict confidence, coded and used only for the purposes of this study.

ADMINISTRATION OF TESTS

The 16 PF, Form A was administered to the control and experimental groups during the first four weeks of

class participation. The form was administered by the investigator during a regular class meeting, or at another time convenient to the students. The same test was readministered during the last two weeks of class participation, after all outdoor experiences were completed.

ORGANIZATION AND ANALYSIS OF DATA

Data for each hypothesis were analyzed by comparing between groups. A composite summation of mean standard ten (sten) scores for each personality factor were compared by the use of Hotelling's T^2 test of significance. This test is a multivariate analytical process able to accommodate the unequal degrees of freedom resulting from unequal group sizes. For hypothesis 1 this summation, or composite pretest score for group A, was compared to that of group B. For hypothesis 3, this same procedure was also applied to groups C and D. The same procedure was applied to groups A and C for hypothesis 5.

For hypothesis 2 the difference between the pretest and posttest composite score for group A was compared to that of group B. For hypothesis 4, the same procedure was applied to groups C and D. Groups A and C were also subjected to the same statistical treatment concerning hypothesis 6.

Data for each hypothesis were also analyzed by comparison of mean sten scores for each of the 16 personality factors investigated. The above procedures were also

used for each hypothesis when testing each personality factor independently using the t separate test of significance.

Chapter IV

RESULTS

PERSONALITY PROFILE DIFFERENCES

When group means on all 16 personality factors were grouped together and considered as a composite score, no significant between group differences (.05 level) were found on any of the six hypotheses tested. These comparisons were tested using Hotelling's T^2 test of significance. Results of these statistics are presented in Table 1.

INDIVIDUAL PERSONALITY TRAIT DIFFERENCES

The following are the results of the between group comparisons of the group mean standard ten (sten) scores on the 16 individual personality factors tested. Results pertinent to each hypothesis have been arranged in the order of their original listing. The comparisons were tested using the t separate test of significance. All significant differences were determined at the .05 level of confidence.

1. In comparison of mean pretest standard ten (sten) scores of Group A (outdoor activity) with those of group B (activity control), it was discovered that a significant difference occurred on personality factor Q_2 . This

Table 1
Between Group Profile Statistics

Groups	Hotelling T ²	F value	P value
A pretest, B pretest	24.0251	0.8759	0.601
A difference, B difference	18.6324	0.6793	0.783
C pretest, D pretest	39.1615	1.3350	0.276
C difference, D difference	35.6855	1.2165	0.342
A pretest, C pretest	31.7262	1.1790	0.354
A difference, C difference	18.9721	0.7050	0.761

factor involved group dependency and self-sufficiency. Group A scored higher on self-sufficiency. Group B was found to be more group dependent. No other factors in this comparison were found to be significantly different. These results are listed in Table 2, pages 31-34.

2. In comparison of the differences between pretest and posttest sten scores of group A to those of group B, it was found that no significance between groups existed on any of the 16 personality factors. The statistical data are found in Table 3, pages 35-38.

3. In comparison of mean pretest sten scores of group C (outdoor teacher preparation) with those of group D (teacher preparation control), it was discovered that no significant differences existed on any of the 16 personality factors. Results may be found in Table 4, pages 39-42.

4. Statistical treatment of pretest-posttest differences for groups C and D produced a significant difference on factor H. This factor involved shyness as opposed to venturesomeness. The outdoor teacher preparation group grew somewhat more shy during the term of class participation, whereas the teacher preparation control group grew more venturesome. Results are indicated in Table 5, pages 43-46.

5. In comparison of the mean pretest sten scores of group A (outdoor activity) with those of group C (outdoor teacher preparation), it was discovered that significant differences existed on factor M, which involved

Table 2

t Tests on Group Mean Sten Pretest Scores on
Individual Personality Factors for Groups
A (Outdoor Activity) and B
(Activity Control)

Factor A (reserved-outgoing)

	Group A	Group B
Mean	4.3809	4.9412
S.D.	1.5322	1.4778
S.E.M.	0.3344	0.3584
t value	-1.14	
P value	0.261	

Factor B (less intelligent-more intelligent)

	Group A	Group B
Mean	5.4762	6.000
S.D.	1.8335	1.8708
S.E.M.	0.4001	0.4537
t value	-0.87	
P value	0.393	

Factor C (affected by feelings-emotionally stable)

	Group A	Group B
Mean	5.4286	5.0588
S.D.	2.0874	2.3841
S.E.M.	0.4555	0.5782
t value	0.50	
P value	0.619	

Factor E (humble-assertive)

	Group A	Group B
Mean	5.8095	6.6471
S.D.	1.7210	0.9963
S.E.M.	0.3756	0.2416
t value	-1.88	
P value	0.070	

Table 2 (continued)

Factor F (sober-happy go lucky)		
	Group A	Group B
Mean	5.9524	6.4118
S.D.	1.7169	2.3200
S.E.M.	0.3746	0.5627
\bar{t} value	-0.68	
\bar{P} value	0.502	

Factor G (expedient-conscientious)		
	Group A	Group B
Mean	5.4762	5.5882
S.D.	1.6006	1.5835
S.E.M.	0.3493	0.3840
\bar{t} value	-0.22	
\bar{P} value	0.830	

Factor H (shy-venturesome)		
	Group A	Group B
Mean	5.2857	5.8823
S.D.	1.7362	2.3948
S.E.M.	0.3789	0.5808
\bar{t} value	-0.86	
\bar{P} value	0.397	

Factor I (tough minded-tender minded)		
	Group A	Group B
Mean	5.7619	5.9412
S.D.	2.2114	1.8865
S.E.M.	0.4826	0.4575
\bar{t} value	-0.27	
\bar{P} value	0.789	

Factor L (trusting-suspicious)		
	Group A	Group B
Mean	5.6667	6.2353
S.D.	2.1055	2.0775
S.E.M.	0.4595	0.5039
\bar{t} value	-0.83	
\bar{P} value	0.410	

Table 2 (continued)

 Factor M (practical-imaginative)

	Group A	Group B
Mean	5.3809	4.4706
S.D.	1.5645	2.0651
S.E.M.	0.3414	0.5009
t value	1.50	
\bar{P} value	0.144	

Factor N (forthright-astute)

	Group A	Group B
Mean	5.3333	5.1176
S.D.	1.8529	1.8331
S.E.M.	0.4043	0.4446
t value	0.36	
\bar{P} value	0.722	

Factor O (self assured-apprehensive)

	Group A	Group B
Mean	5.9524	6.1765
S.D.	2.0851	2.7440
S.E.M.	0.4550	0.6655
t value	-0.28	
\bar{P} value	0.783	

Factor Q₁ (conservative-experimenting)

	Group A	Group B
Mean	5.1429	5.8235
S.D.	1.6818	1.5904
S.E.M.	0.3670	0.3857
t value	-1.28	
\bar{P} value	0.209	

Factor Q₂ (group dependent-self sufficient)

	Group A	Group B
Mean	6.6667	5.0000
S.D.	1.8529	1.6583
S.E.M.	0.4043	0.4022
t value	2.92	
\bar{P} value	0.006*	

Table 2 (continued)

Factor Q ₃ (undisciplined self conflict-controlled)		
	Group A	Group B
Mean	5.6667	5.4118
S.D.	2.2657	1.8048
S.E.M.	0.4944	0.4377
t value	0.39	
P value	0.702	

Factor Q ₄ (relaxed-tense)		
	Group A	Group B
Mean	6.4762	6.5882
S.D.	2.3371	2.6939
S.E.M.	0.5100	0.6534
t value	-0.14	
P value	0.893	

*Significant difference at .05 level.

Table 3

t Tests on Group Mean Pretest-Posttest Differences
on Individual Personality Factors for Groups
A (Outdoor Activity) and B
(Activity Control)

Factor A (reserved-outgoing)

	Group A	Group B
Mean	0.2381	0.4118
S.D.	1.2208	1.1213
S.E.M.	0.2664	0.2720
<u>t</u> value	-0.46	
<u>P</u> value	0.651	

Factor B (less intelligent-more intelligent)

	Group A	Group B
Mean	0.1905	-0.9412
S.D.	1.8335	2.0758
S.E.M.	0.4001	0.5034
<u>t</u> value	1.76	
<u>P</u> value	0.088	

Factor C (affected by feelings-emotionally stable)

	Group A	Group B
Mean	-0.3333	0.4118
S.D.	1.7701	1.2277
S.E.M.	0.3863	0.2978
<u>t</u> value	-1.53	
<u>P</u> value	0.136	

Factor E (humble-assertive)

	Group A	Group B
Mean	-0.4286	-0.2353
S.D.	1.6903	1.3933
S.E.M.	0.3689	0.3379
<u>t</u> value	-0.39	
<u>P</u> value	0.702	

Table 3 (continued)

 Factor F (sober-happy go lucky)

	Group A	Group B
Mean	-0.1905	0.0588
S.D.	1.5690	1.3449
S.E.M.	0.3424	0.3262
\bar{t} value	-0.53	
\bar{P} value	0.601	

Factor G (expedient-conscientious)

	Group A	Group B
Mean	0.1429	0.0588
S.D.	1.4243	1.6760
S.E.M.	0.3108	0.4065
\bar{t} value	0.16	
\bar{P} value	0.871	

Factor H (shy-venturesome)

	Group A	Group B
Mean	-0.4762	0.2353
S.D.	1.8606	0.9034
S.E.M.	0.4060	0.2191
\bar{t} value	-1.54	
\bar{P} value	0.133	

Factor I (tough minded-tender minded)

	Group A	Group B
Mean	0.0000	-0.6471
S.D.	1.3416	1.4116
S.E.M.	0.2928	0.3424
\bar{t} value	1.44	
\bar{P} value	0.160	

Factor L (trusting-suspicious)

	Group A	Group B
Mean	0.1905	0.2353
S.D.	2.1123	1.8210
S.E.M.	0.4609	0.4417
\bar{t} value	-0.07	
\bar{P} value	0.944	

Table 3 (continued)

 Factor M (practical-imaginative)

	Group A	Group B
Mean	0.0000	0.2941
S.D.	1.6733	1.4476
S.E.M.	0.3651	0.3511
\bar{t} value	-0.58	
\bar{P} value	0.565	

Factor N (forthright-astute)

	Group A	Group B
Mean	0.3333	0.4706
S.D.	1.7981	2.0037
S.E.M.	0.3924	0.4860
\bar{t} value	-0.22	
\bar{P} value	0.827	

Factor O (self-assured-apprehensive)

	Group A	Group B
Mean	-0.0952	0.1176
S.D.	2.3432	1.2690
S.E.M.	0.5113	0.3078
\bar{t} value	-0.36	
\bar{P} value	0.724	

 Factor Q₁ (conservative-experimenting)

	Group A	Group B
Mean	0.2381	0.4706
S.D.	1.8140	1.5459
S.E.M.	0.3958	0.3749
\bar{t} value	-0.43	
\bar{P} value	0.672	

 Factor Q₂ (group dependent-self sufficient)

	Group A	Group B
Mean	-0.0952	0.5882
S.D.	1.6095	1.3720
S.E.M.	0.3512	1.3328
\bar{t} value	-1.41	
\bar{P} value	0.166	

Table 3 (continued)

Factor Q ₃ (undisciplined self confident-controlled)		
	Group A	Group B
Mean	-0.2857	-0.0588
S.D.	1.5856	1.8190
S.E.M.	0.3460	0.4412
t value	0.61	
\bar{P} value	0.543	

Factor Q ₄ (relaxed-tense)		
	Group A	Group B
Mean	-0.1905	-0.3529
S.D.	1.8606	1.2217
S.E.M.	0.4060	0.2963
t value	0.32	
\bar{P} value	0.748	

Table 4

t Tests on Group Mean Sten Pretest Scores on
Individual Personality Factors for Groups
C (Outdoor Teacher Preparation) and
D (Teacher Preparation Control)

Factor A (reserved-outgoing)

	Group C	Group D
Mean	4.8333	4.4118
S.D.	1.6539	2.4254
S.E.M.	0.3898	0.5882
t value	0.60	
P value	0.555	

Factor B (less intelligent-more intelligent)

	Group C	Group D
Mean	5.2778	5.4706
S.D.	2.2177	1.8068
S.E.M.	0.5227	0.4382
t value	-0.28	
P value	0.779	

Factor C (affected by feelings-emotionally stable)

	Group C	Group D
Mean	5.9444	5.5294
S.D.	1.7648	2.0651
S.E.M.	0.4160	0.5009
t value	0.64	
P value	0.528	

Factor E (humble-assertive)

	Group C	Group D
Mean	5.6667	6.3529
S.D.	1.7489	1.4552
S.E.M.	0.4122	0.3529
t value	-1.26	
P value	0.215	

Table 4 (continued)

 Factor F (sober-happy go lucky)

	Group C	Group D
Mean	6.0556	6.4706
S.D.	2.0996	2.3748
S.E.M.	0.4949	0.5760
t value	-0.55	
\bar{P} value	0.558	

Factor G (expedient-conscientious)

	Group C	Group D
Mean	6.0556	5.5294
S.D.	1.4337	1.4628
S.E.M.	0.3379	0.3548
t value	1.07	
\bar{P} value	0.291	

Factor H (shy-venturesome)

	Group C	Group D
Mean	5.8333	5.4706
S.D.	2.1213	1.7363
S.E.M.	0.5000	0.4211
t value	0.55	
\bar{P} value	0.583	

Factor I (tough minded-tender minded)

	Group C	Group D
Mean	4.8889	5.3529
S.D.	2.0548	2.6206
S.E.M.	0.4843	0.6356
t value	-0.58	
\bar{P} value	0.566	

Factor L (trusting-suspicious)

	Group C	Group D
Mean	5.8889	6.1176
S.D.	1.4907	1.6912
S.E.M.	0.3514	0.4102
t value	-0.42	
\bar{P} value	0.675	

Table 4 (continued)

Factor M (practical-imaginative)		
	Group C	Group D
Mean	4.1111	4.4706
S.D.	1.5676	2.4778
S.E.M.	0.3695	0.6010
\bar{t} value	-0.51	
\bar{P} value	0.615	

Factor N (forthright-astute)		
	Group C	Group D
Mean	5.3333	5.4706
S.D.	2.1420	2.0037
S.E.M.	0.5049	0.4860
\bar{t} value	-0.20	
\bar{P} value	0.846	

Factor O (self assured-apprehensive)		
	Group C	Group D
Mean	5.3333	6.2353
S.D.	1.9097	2.0472
S.E.M.	0.4501	0.4965
\bar{t} value	-1.35	
\bar{P} value	0.188	

Factor Q ₁ (conservative-experimenting)		
	Group C	Group D
Mean	5.5000	5.8823
S.D.	2.0651	1.6912
S.E.M.	0.4868	0.4102
\bar{t} value	-0.60	
\bar{P} value	0.552	

Factor Q ₂ (group dependent-self sufficient)		
	Group C	Group D
Mean	5.1111	4.9412
S.D.	1.5676	1.5195
S.E.M.	0.3695	0.3685
\bar{t} value	0.33	
\bar{P} value	0.747	

Table 4 (continued)

 Factor Q₃ (undisciplined self conflict-controlled)

	Group C	Group D
Mean	6.0000	5.5294
S.D.	1.7823	1.5459
S.E.M.	0.4201	0.3749
t value	0.84	
P value	0.409	

 Factor Q₄ (relaxed-tense)

	Group C	Group D
Mean	5.2222	6.0588
S.D.	2.1572	2.4101
S.E.M.	0.5085	0.5845
t value	-1.08	
P value	0.288	

Table 5

t Tests on Group Mean Pretest-Posttest Differences
on Individual Personality Factors for Groups
C (Outdoor Teacher Preparation) and D
(Teacher Preparation Control)

Factor A (reserved-outgoing)

	Group C	Group D
Mean	0.2222	0.3529
S.D.	1.2154	1.1695
S.E.M.	0.2865	0.2836
<u>t</u> value	-0.32	
<u>P</u> value	0.748	

Factor B (less intelligent-more intelligent)

	Group C	Group D
Mean	0.0000	-0.9412
S.D.	2.0292	2.5610
S.E.M.	0.4783	0.6211
<u>t</u> value	1.20	
<u>P</u> value	0.239	

Factor C (affected by feelings-emotionally stable)

	Group C	Group D
Mean	-0.5000	-0.4118
S.D.	1.8550	1.3257
S.E.M.	0.4372	0.3215
<u>t</u> value	-0.16	
<u>P</u> value	0.872	

Factor E (humble-assertive)

	Group C	Group D
Mean	-0.0556	0.6471
S.D.	1.6260	1.1147
S.E.M.	0.3832	0.2704
<u>t</u> value	-1.50	
<u>P</u> value	0.145	

Table 5 (continued)

Factor F (sober-happy go lucky)		
	Group C	Group D
Mean	0.0000	0.0000
S.D.	1.2367	1.9039
S.E.M.	0.2915	0.4618
\bar{t} value	0.00	
\bar{P} value	1.000	

Factor G (expedient-conscientious)		
	Group C	Group D
Mean	0.0556	-0.0588
S.D.	1.3492	1.2976
S.E.M.	0.3180	0.3147
\bar{t} value	0.26	
\bar{P} value	0.800	

Factor H (shy-venturesome)		
	Group C	Group D
Mean	-0.3333	0.7647
S.D.	1.2367	1.6019
S.E.M.	0.2915	0.3885
\bar{t} value	-2.26	
\bar{P} value	0.031*	

Factor I (tough minded-tender minded)		
	Group C	Group D
Mean	-0.2222	-1.0588
S.D.	1.4371	2.3311
S.E.M.	0.3387	0.5654
\bar{t} value	1.27	
\bar{P} value	0.215	

Factor L (trusting-suspicious)		
	Group C	Group D
Mean	-0.1667	0.2353
S.D.	1.7235	2.2508
S.E.M.	0.4062	0.5459
\bar{t} value	-0.59	
\bar{P} value	0.559	

Table 5 (continued)

Factor M (practical-imaginative)

	Group C	Group D
Mean	0.1667	0.0000
S.D.	1.3827	2.4238
S.E.M.	0.3259	0.5879
t value	0.25	
\bar{P} value	0.806	

Factor N (forthright-astute)

	Group C	Group D
Mean	0.2778	-0.0588
S.D.	2.3715	2.3041
S.E.M.	0.5590	0.5588
t value	0.43	
\bar{P} value	0.673	

Factor O (self-assured-apprehensive)

	Group C	Group D
Mean	0.7778	-0.2353
S.D.	1.4371	2.1946
S.E.M.	0.3387	0.5323
t value	1.61	
\bar{P} value	0.120	

Factor Q₁ (conservative-experimenting)

	Group C	Group D
Mean	-0.6667	-0.2353
S.D.	1.6088	2.0472
S.E.M.	0.3792	0.4965
t value	-0.69	
\bar{P} value	0.495	

Factor Q₂ (group dependent-self sufficient)

	Group C	Group D
Mean	0.6111	0.2941
S.D.	1.8195	2.3121
S.E.M.	0.4289	0.5608
t value	0.45	
\bar{P} value	0.657	

Table 5 (continued)

 Factor Q₃ (undisciplined self conflict-controlled)

	Group C	Group D
Mean	0.3889	0.2353
S.D.	1.7536	1.2005
S.E.M.	0.4133	0.2912
\bar{t} value	0.30	
\bar{P} value	0.763	

Factor Q₄ (relaxed-tense)

	Group C	Group D
Mean	0.5556	-0.2353
S.D.	1.0416	2.6108
S.E.M.	0.2455	0.6332
\bar{t} value	1.16	
\bar{P} value	0.257	

*Significant difference at .05 level.

practicality as opposed to imagination. It was discovered that group C was more practical and less imaginative than was group A. In relation to factor Q₂ (group dependency, self sufficiency), it was discovered that group A was more self-sufficient and less group dependent than group C. Statistical results are listed in Table 6, pages 48-51.

6. In comparison of the differences between pretest and posttest sten scores of group A to those of group C, it was found that no significant between group difference existed on any of the 16 personality factors. These results are found in Table 7, pages 52-55.

Table 6

t Tests on Group Mean Sten Pretest Scores on
Individual Personality Factors for Groups
A (Outdoor Activity) and C (Outdoor
Teacher Preparation)

Factor A (reserved-outgoing)

	Group A	Group C
Mean	4.3809	4.8333
S.D.	1.5322	1.6539
S.E.M.	0.3344	0.3898
t value	-0.88	
P value	0.384	

Factor B (less intelligent-more intelligent)

	Group A	Group C
Mean	5.4762	5.2778
S.D.	1.8335	2.2177
S.E.M.	0.4001	0.5227
t value	0.30	
P value	0.765	

Factor C (affected by feelings-emotionally stable)

	Group A	Group C
Mean	5.4286	5.9444
S.D.	2.0874	1.7648
S.E.M.	0.4555	0.4160
t value	-0.84	
P value	0.408	

Factor E (humble-assertive)

	Group A	Group C
Mean	5.8095	5.6667
S.D.	1.7210	1.7489
S.E.M.	0.3756	0.4122
t value	0.26	
P value	0.799	

Table 6 (continued)

 Factor F (sober-happy go lucky)

	Group A	Group C
Mean	5.9524	6.0556
S.D.	1.7169	2.0996
S.E.M.	0.3746	0.4949
t value	-0.17	
\bar{P} value	0.869	

Factor G (expedient-conscientious)

	Group A	Group C
Mean	5.4762	6.0556
S.D.	1.6006	1.4337
S.E.M.	0.3493	0.3379
t value	-1.19	
\bar{P} value	0.241	

Factor H (shy-venturesome)

	Group A	Group C
Mean	5.2857	5.8333
S.D.	1.7362	2.1213
S.E.M.	0.3789	0.5000
t value	-0.87	
\bar{P} value	0.389	

Factor I (tough minded-tender minded)

	Group A	Group C
Mean	5.7619	4.8889
S.D.	2.2114	2.0548
S.E.M.	0.4826	0.4843
t value	1.28	
\bar{P} value	0.210	

Factor L (trusting-suspicious)

	Group A	Group C
Mean	5.6667	5.8889
S.D.	2.1055	1.4907
S.E.M.	0.4595	0.3514
t value	-0.38	
\bar{P} value	0.703	

Table 6 (continued)

Factor M (practical-imaginative)

	Group A	Group C
Mean	5.3809	4.1111
S.D.	1.5645	1.5676
S.E.M.	0.3414	0.3695
\bar{t} value	2.52	
\bar{P} value	0.016*	

Factor N (forthright-astute)

	Group A	Group C
Mean	5.3333	5.3333
S.D.	1.8529	2.1420
S.E.M.	0.4043	0.5049
\bar{t} value	0.00	
\bar{P} value	1.000	

Factor O (self assured-apprehensive)

	Group A	Group C
Mean	5.9524	5.3333
S.D.	2.0851	1.9097
S.E.M.	0.4550	0.4501
\bar{t} value	0.97	
\bar{P} value	0.340	

Factor Q₁ (conservative-experimenting)

	Group A	Group C
Mean	5.1429	5.5000
S.D.	1.6818	2.0651
S.E.M.	0.3670	0.4868
\bar{t} value	-0.59	
\bar{P} value	0.562	

Factor Q₂ (group dependent-self sufficient)

	Group A	Group C
Mean	6.6667	5.1111
S.D.	1.8529	1.5676
S.E.M.	0.4043	0.3695
\bar{t} value	2.84	
\bar{P} value	0.007*	

Table 6 (continued)

 Factor Q₃ (undisciplined self conflict-controlled)

	Group A	Group C
Mean	5.6667	6.0000
S.D.	2.2657	1.7823
S.E.M.	0.4944	0.5201
t value	-0.51	
P value	0.610	

 Factor Q₄ (relaxed-tense)

	Group A	Group C
Mean	6.4762	5.2222
S.D.	2.3371	2.1572
S.E.M.	0.5100	0.5085
t value	1.74	
P value	0.090	

*Significant difference at .05 level.

Table 7

t Tests on Group Mean Pretest-Posttest Differences
on Individual Personality Factors for Groups
A (Outdoor Activity) and C (Outdoor
Teacher Preparation)

Factor A (reserved-outgoing)

	Group A	Group C
Mean	0.2381	0.2222
S.D.	1.2208	1.2154
S.E.M.	0.2664	0.2865
<u>t</u> value	0.04	
<u>P</u> value	0.968	

Factor B (less intelligent-more intelligent)

	Group A	Group C
Mean	0.1905	0.0000
S.D.	1.8335	2.0292
S.E.M.	0.4001	0.4783
<u>t</u> test	0.31	
<u>P</u> value	0.762	

Factor C (affected by feelings-emotionally stable)

	Group A	Group C
Mean	-0.3333	-0.5000
S.D.	1.7701	1.8550
S.E.M.	0.3863	0.4372
<u>t</u> value	0.29	
<u>P</u> value	0.7777	

Factor E (humble-assertive)

	Group A	Group C
Mean	-0.4286	-0.0556
S.D.	0.6903	1.6260
S.E.M.	0.3689	0.3832
<u>t</u> value	-0.70	
<u>P</u> value	0.488	

Table 7 (continued)

Factor F (sober-happy go lucky)		
	Group A	Group C
Mean	-0.1905	0.0000
S.D.	1.5690	1.2367
S.E.M.	0.3424	0.2915
\bar{t} value	-0.42	
\bar{P} value	0.674	

Factor G (expedient-conscientious)		
	Group A	Group C
Mean	0.1429	0.0556
S.D.	1.4243	1.3492
S.E.M.	0.3108	0.3180
\bar{t} value	0.20	
\bar{P} value	0.845	

Factor H (shy-venturesome)		
	Group A	Group C
Mean	-0.4762	-0.3333
S.D.	1.8606	1.2367
S.E.M.	0.4060	0.2915
\bar{t} value	-0.29	
\bar{P} value	0.777	

Factor I (tough minded-tender minded)		
	Group A	Group C
Mean	0.0000	-0.2222
S.D.	1.3416	1.4371
S.E.M.	0.2928	0.3387
\bar{t} value	0.50	
\bar{P} value	0.623	

Factor L (trusting-suspicious)		
	Group A	Group C
Mean	0.1905	-0.1667
S.D.	2.1123	1.7235
S.E.M.	0.4609	0.4062
\bar{t} value	0.58	
\bar{P} value	0.565	

Table 7 (continued)

Factor M (practical-imaginative)

	Group A	Group C
Mean	0.0000	0.1667
S.D.	1.6733	1.3827
S.E.M.	0.3651	0.3259
t value	-0.34	
P value	0.735	

Factor N (forthright-astute)

	Group A	Group C
Mean	0.3333	0.2778
S.D.	1.7981	2.3715
S.E.M.	0.3924	0.5590
t value	0.08	
P value	0.936	

Factor O (self-assured-apprehensive)

	Group A	Group C
Mean	-0.0952	0.7778
S.D.	2.3432	1.4371
S.E.M.	0.5113	0.3387
t value	-1.42	
P value	0.164	

Factor Q₁ (conservative-experimenting)

	Group A	Group C
Mean	0.2381	-0.6667
S.D.	1.8140	1.6088
S.E.M.	0.3958	0.3792
t value	1.65	
P value	0.107	

Factor Q₂ (group dependent-self sufficient)

	Group A	Group C
Mean	-0.0952	0.6111
S.D.	1.6095	1.8195
S.E.M.	0.3512	0.4289
t value	-1.27	
P value	0.211	

Table 7 (continued)

 Factor Q₃ (undisciplined self conflict-controlled)

	Group A	Group C
Mean	0.2857	0.3889
S.D.	1.5856	1.7536
S.E.M.	0.3460	0.4133
t value	-0.19	
P value	0.849	

 Factor Q₄ (relaxed-tense)

	Group A	Group C
Mean	-0.1905	0.5556
S.D.	1.8606	1.0416
S.E.M.	0.4060	0.2455
t value	-1.57	
P value	0.126	

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDY

SUMMARY

This study investigated several aspects of the personalities of outdoor education students at Appalachian State University during the spring semester of 1978. Specifically, the study attempted to determine:

1. The personality differences of students enrolled in an outdoor oriented activity course, and students enrolled in an activity control group at the beginning of the term of instruction.

2. The differences in the degree to which personalities of students enrolled in an outdoor oriented activity course and an activity control group were modified as a result of course participation.

3. The personality differences of students enrolled in an outdoor oriented teacher preparation course and students enrolled in a teacher preparation control group at the beginning of the term of instruction.

4. The differences in the degree to which personalities of students enrolled in an outdoor oriented teacher preparation course and a teacher preparation control group were modified as a result of course participation.

5. The personality differences of students enrolled in an outdoor oriented activity course and students enrolled in an outdoor oriented teacher preparation course, at the beginning of the term of instruction.

6. The differences in the degree to which personalities of students enrolled in an outdoor oriented activity course and an outdoor oriented teacher preparation group were modified as a result of course participation.

The study involved 73 Appalachian State University students enrolled in courses used in the investigation. Subject participation was voluntary. The subjects were tested near the beginning, and again near the end of the semester, using the 16 PF, Form A.

When mean sten scores for each personality were grouped together, giving one numerical equivalent for each group personality profile, no between group comparisons were determined to be statistically significant at the .05 level of significance according to the Hotelling's T^2 test. When individual mean sten scores on each personality factor were compared between groups, the following results at the .05 level of significance were revealed by individual t tests:

1. Before course participation, the outdoor activity group scored higher on self-sufficiency as opposed to group dependency than did the activity control group.

2. The outdoor teacher preparation group grew more shy during course participation, whereas the teacher preparation control group grew more venturesome.

3. Before course participation, the outdoor activity group was more imaginative and less practical. This group was also more self-sufficient and less group dependent than the outdoor teacher preparation group.

CONCLUSIONS

Within the limitations of this study, the following may be concluded:

1. Outdoor activity students were more self-sufficient and less group dependent than were non-outdoor activity students, prior to course participation.
2. Outdoor teacher preparation students grew more shy during the course of study, whereas non-outdoor teacher preparation students grew more venturesome.
3. Outdoor activity students were more imaginative and less practical than were outdoor teacher preparation students, prior to course participation.
4. Outdoor activity students were more self-sufficient and less group dependent than were outdoor teacher preparation students, prior to course participation.

RECOMMENDATIONS FOR FURTHER STUDY

As a result of this study, several recommendations for further research are advanced. These recommendations are:

1. Outdoor education for people of all ages receives a great deal of current emphasis, from both public

and private educational programs. However, little research has been done relating to personality and outdoor education. More studies are needed to improve insight in this area.

2. There are many types of outdoor activities obviously not included in this study. Research using students engaging in other outdoor activities should be undertaken to determine the relationship of those activities to personality.

3. Outdoor education is currently being undertaken by individuals at different age levels. Research at non-college age levels should be undertaken to determine the possibility of a relationship of outdoor educational experience to personality.

4. This study was limited to situations in which outdoor education was presented in a university setting. There are currently many other outdoor educational situations and programs such as the Boy Scouts of America and Outward Bound. It is suggested that personality variables of individuals in a wide variety of programs be studied in order to expand the existing body of knowledge in this area.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. American Physical Education Association; National Section on Women's Athletics. Standards in athletics for girls and women. Research Quarterly 8:2:20-72, May 1937.
2. Baley, James A. Recreation and the aging process. Research Quarterly 26:1:1-7, March 1955.
3. Behrman, Robert M. Personality differences in swimmers and nonswimmers. Research Quarterly 38:2:163-171, May 1967.
4. Bentson, T. B. and John Summerskill. Relation of personal success in intercollegiate athletics to certain aspects of personal adjustment. Research Quarterly 26:1:8-14, March 1955.
5. Berger, Richard A. and Donald H. Littlefield. Comparison between football athletes and nonathletes on personality. Research Quarterly 40:4:663-665, December 1969.
6. Biddulph, Lowell G. Athletic achievement and the personal and social adjustment of high school boys. Research Quarterly 25:1:1-7, March 1954.
7. Blanchard, B. Everard. A comparative analysis of secondary-school boys' and girls' character and personality traits in physical education classes. Research Quarterly 17:1:33-39, March 1946.
8. Booth, E. G., Jr. Personality traits of athletes as measured by the M.M.P.I. Research Quarterly 29:2:127-138, May 1958.
9. Brunner, Burton C. Personality and motivating factors influencing adult participation in vigorous physical activity. Research Quarterly 40:3:464-469, October 1969.
10. Carter, Gerald C. and J. R. Shannon. Adjustments and personality traits of athletes and nonathletes. School Review 48:1:127-130, 1940.
11. Cassel, Russel and Richard Childers. A study of certain attributes of 45 high-school varsity football

- team members by use of psychological test scores. Journal of Educational Research 57:64-67, October 1963.
12. Cavanaugh, Jean O. The relation of recreation to personality adjustment. Journal of Social Psychology 15:1:63-74, February 1942.
 13. Cooper, L. Athletics, activity, and personality: a review of literature. Research Quarterly 40:1:17-22, March 1969.
 14. Darden, Ellington. Sixteen Personality Factor profiles of competitive bodybuilders and weightlifters. Research Quarterly 43:2:142-147, May 1972.
 15. Dreger, Ralph M. Multivariate personality research, contributions to the understanding of personality in honor of Raymond B. Cattell. Baton Rouge: Claitor's Publishing Company, 1972.
 16. Fauquier, William. The attitudes of aggressive and submissive boys toward athletics. Child Development 11:2:115-125, June 1940.
 17. Harlow, Robert G. Masculine inadequacy and compensatory development of physique. Journal of Personality 19:3:312-323, March 1951.
 18. Harris, Dorothy V. Physical activity history and attitudes of middle aged men. Medicine and Science in Sports 2:4:203-208, Winter 1970.
 19. Hellison, Donald R. Physical education and self attitude. Quest 13:1:41-45, January 1970.
 20. Husman, Burris F. Aggression in boxers and wrestlers as measured by projective techniques. Research Quarterly 26:4:421-425, December 1955.
 21. Ismail, A. H. and L. E. Trachtman. Jogging the imagination. Psychology Today 6:10:78-82, March 1973.
 22. Johnson, W. R., B. R. Fretz and Julia A. Johnson. Changes in self-concepts during a physical development program. Research Quarterly 39:3:560-565, October 1968.
 23. Johnson, Warren R., Daniel C. Hutton and Granville B. Johnson, Jr. Personality traits of some champion athletes as measured by two projective tests: Rorschach and H-T-P. Research Quarterly 25:4:484-485, December 1954.

24. Kroll, Walter. Sixteen personality factors of collegiate wrestlers. Research Quarterly 38:1:49-57, March 1967.
25. Kroll, Walter, and B. Robert Carlson. Discriminant function and hierarchical grouping analysis of Karate participants' personality profiles. Research Quarterly 38:3:405-411, October 1967.
26. Keith, James A. et al. Motivational differences among physically active and inactive mature males as measured by the Motivational Analysis Test. Research Quarterly 45:3:217-223, October 1974.
27. Keogh, Jack. Relationship of motor ability and athletic participation in certain standardized personality measures. Research Quarterly 30:4:438-445, December 1959.
28. La Place, John P. Personality and its relationship to success in professional baseball. Research Quarterly 25:3:313-319, October 1954.
29. McAfee, Robert A. Sportsmanship attitudes of sixth, seventh and eighth grade boys. Research Quarterly 26:1:120, March 1955.
30. Neulinger, John and Miranda Breit. Attitude dimensions of leisure: a replication study. Journal of Leisure Research 3:2:108-115, Spring 1971.
31. Newman, Earl N. Personality traits of faster and slower competitive swimmers. Research Quarterly 39:4:1049-1053, December 1968.
32. Peterson, Sheri L., Jerome C. Weber and William W. Tousdale. Personality traits of women in team sports vs. women in individual sports. Research Quarterly 38:4:686-689, December 1967.
33. Pilch, Arthur and Paul F. Zelhart, Jr. Motivational correlates of university athletes and exercising and nonexercising middle aged subjects. Research Quarterly 42:2:229-233, May 1971.
34. Richard, S. Kay, Donald W. Felker and Ray O. Varoz. Sports interests and abilities as contributors to self concept in junior high school boys. Research Quarterly 43:2:208-215, May 1972.
35. Rohrbacher, Richard. Influence of a special camp program for obese boys on weight loss, self concept, and body image. Research Quarterly 44:2:150-157, May 1973.

36. Schendel, Jack. Psychological differences between athletes and nonparticipants in athletics at three educational levels. Research Quarterly 36:1:52-67, March 1965.
37. Singer, Robert N. Personality differences between and within baseball and tennis players. Research Quarterly 40:3:582-588, October 1969.
38. Slusher, Howard S. Personality and intelligence characteristics of selected high school athletes and nonathletes. Research Quarterly 35:4:539-545, December 1964.
39. Sonstroem, Robert J. Attitude testing examining certain psychological correlates of physical activity. Research Quarterly 45:2:93-103, May 1974.
40. Sperling, Abraham P. The relationship between personality adjustment and achievement in physical education activities. Research Quarterly 13:3:351-363, October 1942.
41. Scott, M. Gladys. The contributions of physical activity to psychological development. Research Quarterly 31:2:307-320, May 1960.
42. Strom, Robert. Education for a leisure society. Futurist 9:2:93-97, April 1975.
43. Thune, John B. Personality of Weightlifters. Research Quarterly 20:3:296-306, October 1949.
44. Tillman, Kenneth. Relationship between physical fitness and selected personality traits. Research Quarterly 36:4:483-489, December 1965.
45. Watson, Goodwin. Personality growth through athletics. Journal of Health, Physical Education and Recreation 9:9:408-410, September 1938.
46. Werner, Alfred C. Physical education and the development of leadership characteristics of cadets at the United States Military Academy. Doctoral dissertation, Springfield College, 1970.
47. Whittle, H. Douglas. Effects of elementary school physical education upon aspects of physical, motor and personality development. Research Quarterly 32:2:249-260, May 1961.

48. Widdop, James H. and Valerie A. Widdop. Comparison of the personality traits of female teacher education and physical education students. Research Quarterly 46:3:274-281, October 1975.
49. Wilson, Phillip D. Relationship between motor achievement and selected personality factors of junior and senior high school boys. Research Quarterly 40:3:841-846, October 1969.
50. Wordsworth, William. Lines written in early spring. William Wordsworth Selected Poetry. ed. Mark Van Doren. New York: Modern Library, 1950.
51. Wylie, James A. A survey of 504 families to determine the relationship between certain factors and the nature of the family recreation program. Research Quarterly 24:2:229-243, May 1953.
52. Young, R. John and A. H. Ismail. Personality differences of adult men before and after a physical fitness program. Research Quarterly 47:3:513-519, October 1976.

APPENDIX

APPENDIX A

Personality Traits as Measured
by the 16 PF

LOW SCORE DESCRIPTION	STANDARD TEN SCORE (STEN)	HIGH SCORE DESCRIPTION
RESERVED, Detached, Critical, Aloof, Stiff (Sizothymia)	A	OUTGOING, Warmhearted, Easy- going, Participating (Affectothymia)
LESS INTELLIGENT, Concrete- Thinking (Lower scholastic mental capacity)	B	MORE INTELLIGENT, Abstract- Thinking, Bright (Bright scholastic mental capacity)
AFFECTED BY FEELINGS, Emotion- ally Less Stable, Easily Upset, Changeable (Lower ego strength)	C	EMOTIONALLY STABLE, Mature, Faces Reality, Calm (Higher ego strength)
HUMBLE, Mild, Easily Led, Docile, Accommodating (Submissiveness)	E	ASSERTIVE, Aggressive, Stub- born, Competitive (Dominance)
SOBER, Taciturn, Serious (Desurgency)	F	HAPPY-GO-LUCKY, Enthusiastic (Surgency)
EXPEDIENT, Disregards Rules (Weaker superego strength)	G	CONSCIENTIOUS, Persistent, Moralistic, Staid (Stronger superego strength)
SHY, Timid, Threat- Sensitive (Threctia)	H	VENTURESOME, Uninhibited, Socially Bold (Parmia)
TOUGH-MINDED, Self-Reliant, Realistic (Harria)	I	TENDER-MINDED, Sensitive, Clinging, Overprotected) (Premsia)
TRUSTING, Accepting Conditions (Alaxia)	L	SUSPICIOUS, Hard to Fool (Protension)

Appendix A (continued)

LOW SCORE DESCRIPTION	STANDARD TEN SCORE (STEN)	HIGH SCORE DESCRIPTION
PRACTICAL, "Down-to-Earth" Concerns (Praxemia)	M	IMAGINATIVE, Bohemian, Absent- Minded (Autia)
FORTHRIGHT, Unpretentious, Genuine but Socially Clumsy (Artlessness)	N	ASTUTE, Polished, Socially Aware (Shrewdness)
SELF-ASSURED, Placid, Secure, Complacent, Serene (Untroubled adequacy)	O	APPREHENSIVE, Self- Reproaching, Insecure, Worrying, Troubled (Guilt Proneness)
CONSERVATIVE, Respecting Traditional Ideas (Conservatism of tempera- ment)	Q ₁	EXPERIMENTING, Liberal, Free-Thinking (Radicalism)
GROUP-DEPENDENT, A "Joiner" and Sound Follower (Group adherence)	Q ₂	SELF-SUFFICIENT, Resourceful, Prefers Own Decisions (Self-sufficiency)
UNDISCIPLINED SELF-CONFLICT, Lax, Follows Own Urges, Care- less of Social Rules (Low integration)	Q ₃	CONTROLLED, Exacting Will Power, Socially Precise, Compulsive (High strength of self- sentiment)
RELAXED, Tranquil, Unfrus- trated, Composed (Low ergic tension)	Q ₄	TENSE, Frustrated, Driven, Overwrought (High ergic tension)