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A COMPARATIVE STUDY OF CERTAIN PERSONALITY TRAITS BETWEEN
FEMALE PHYSICAL EDUCATION MAJORS AND NON-MAJORS
AT APPALACHIAN STATE UNIVERSITY

A Thesis
presented to
the Faculty of the Department of
Health, Physical Education, and Recreation
Appalachian State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Violet M. Testerman
January 1972

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ABSTRACT

TITLE: "A Comparative Study of Certain Personality Traits Between Female Physical Education Majors and Non-Majors at Appalachian State University

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PURPOSE: The study compared selected personality traits of female Physical Education majors and non-majors. The Edwards Personal Preference Schedule was utilized for this investigation.

PROCEDURES: Fifty female Physical Education majors selected by random sampling and fifty female non-majors who were recommended by their department chairmen and who volunteered, were included in the study. All of the subjects were enrolled in the Junior or Senior classes at Appalachian State University, Boone, North Carolina during the Fall quarter of 1971.

Three testing sessions were held in the audio visual room of the Varsity Gym for the administration of the Edwards Personal Preference Schedule. The subjects were aware of the reasons for the test but names were omitted from the answer sheets to assure anonymity.

A personal questionnaire was utilized to obtain background information on the subjects.

CONCLUSIONS: The statistical test known as the students' t test was employed for the comparison of the Physical Education majors with the non-majors group, and additionally for comparison of the Physical Education majors and a national normative group, for the fifteen variables on the Edwards test. The following conclusions were based on the statistical results of this study. These conclusions were:

1. That the differences in personality traits between Physical Education majors and non-majors were negligible, at Appalachian State University.

2. That on the basis of the results, one would expect Appalachian State University Physical Education majors to exhibit more dominance and less achievement.

3. That if the belief were extant that personality differences exist, then this group of female physical Education majors were being stereotyped unfairly. If this local group is typical of the larger group of Physical Education majors, then perhaps all majors in this field are stereotyped unfairly.

4. That the local Physical Education group varied significantly from the national normative group on five traits.

5. That the Edwards Personal Preference Schedule did not reveal a distinguishable general pattern of personality for females majoring in Physical Education at Appalachian State University.

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Chapter I

Introduction

At the inception of organized Physical Education for girls, in the era of Catherine E. Beecher, young ladies were relegated to the graceful milieu of dance, archery, swimming, riding side saddle, croquet, skating and pedestrianism.¹ More vigorous activities were thought unfeminine and physiologically harmful. Although not a catholic view, this anachronistic attitude has persisted in the United States. Therefore, women with high interest in games and sports involving physical skill, whether in participation and/or vocational interests, have been assumed to differ from cultural-age-sex norms as a result of different personality dispositions developed through past learning experiences.²

The typical stereotyped concept of the female Physical Education major is one of muscles and brashness or extroversion. A high degree of muscle tone is usually contingent to success in this field, however, in this particular culture

¹Norma Schwendener, A History of Physical Education in the United States. (New York: A. S. Barnes & Co., 1942), pp. 69-73.

²Daniel M. Landers, "Psychological femininity and the Prospective Female Physical Educator," Research Quarterly, 41:164, 1970.

to have these muscles means a loss of social prestige.³ For this reason, many girls who are otherwise well qualified, pursue careers other than that of teaching Physical Education.

Statement of the Problem

The intention of this investigation was to ascertain whether there were measurable personality differences, between female Physical Education majors and non-majors at Appalachian State University.

Scope of the Study

A group of fifty female Physical Education majors and an equivalent set of diverse non-majors, with a mean age of 20.60 and a median age of 21.00, were administered the Edwards Personal Preference Schedule. One half of the subjects were selected from a list of Junior and Senior Physical Education majors who were currently enrolled at Appalachian State University. Every third person on the list was requested to volunteer for the test in order to assure a random selection of the fifty samples necessary.

Selection of non-majors was accomplished by requesting the chairman of the departments included, to suggest classes which would be most suitable for this purpose. Through their cooperation, seven to ten volunteers were enlisted from each

³Jack F. George and Harry A. Lehman, School Athletic Administration. (New York: Harper & Row, 1966), p. 76.

discipline. The number depended on the number of Junior and Senior majors available, and of course, upon whether she wished to participate in the study.

Forty-three Juniors and fifty-seven Seniors participated in the study. The basis for designating these particular classes was that these groups were seemingly more mature and by progressing this far in their chosen field, had shown a greater interest than would be true of undecided, changeable Freshmen and Sophomores.

Administration of the test was during the Fall quarter of 1971; the term extending from September tenth to November twenty-fourth. The site of the test was the campus of Appalachian State University, Boone, North Carolina.

To include the personality variables believed pertinent to this study, the preferred testing device was the Edwards Personal Preference Schedule. According to the Mental Measurements Yearbook, it has a median validity rating of .52 and a reliability of a median of .74.⁴ It is of statistically sound construction and meets two supplemental characteristics of a good test, those of ease of scoring and economy.⁵

Normal need manifestations were also included in this

⁴Oscar K. Buros (ed.), The Sixth Mental Measurements Yearbook. (Highland Park, N.J.: The Gryphon Press, 1965), p. 195.

⁵Ibid.

test, and this would be most desirable for future guidance.⁶ Supplementary to these features, the Edwards Personal Preference Schedule was normative, therefore a comparison of both subject groups could be made with national norms for this test.

Definition of Terms

Personality: Personality is an integrated system of habitual adjustments to the environment, particularly to the social environment, and includes attitudes, characteristics and behavior tendencies.⁷

Personality Variables: A personality variable is a factor of personality which is constantly developing and changing.⁸ The specific variables used in this study were described in these terms by Edwards.⁹

Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered do more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight rather than having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

⁶Jo Anne Thorpe, "Study of Personality Variables Among Successful Women Students and Teachers of Physical Education," Research Quarterly, 29:85, 1958.

⁷William Healy, Personality in Formation and Action, (New York: W. W. Norton & Co., Inc., 1938), p. 11.

⁸Thorpe, op. cit., p. 83.

⁹Allen L. Edwards, "Edwards Personal Preference Schedule," Test Manual, (New York: The Psychological Corporation, 1959), p. 11.

Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants to do, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

Change: To do new and different things, to travel to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others can not answer.

Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or tell jokes involving sex, to become sexually excited.

Intracception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have needs organized and a definite time for eating, to have things arranged so that they run smoothly without change.

Succorance: To have others provide help when in trouble, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.*

Limitations of the Study

This inquiry was limited by the amount of previous research in the area of personality of female Physical Education majors. A Medlars search revealed only one germane study since 1968. Not only was there a dearth of research in this area, but the conclusions of those investigations were highly contradictory.

Another restricting factor was the delimited area of the search. If the possibility had existed for state wide or perhaps national participation in this test, the results would have had greater relevance.

In addition to the foregoing limitations, a self-report method was the type utilized in answering the items on the Edwards Personal Preference Schedule. This method has been criticized because it has no absolute scheme to prevent the subject faking the answers.

The fact that three testing sessions were held, instead of the planned two, was also a limiting factor. Mood, the weather, a campus event or a variety of such reasons could have affected test validity.

*The fifteen trait descriptions were Edwards' explanation of these terms in the Edwards Personal Preference Schedule Test Manual.

Chapter II

REVIEW OF LITERATURE

Introductory Statement

Research pertinent to comparative psychological studies of women Physical Education majors was not abundant. Men, in the Physical Education discipline, have been in the vanguard in the domain of psychological and personality investigations as related to sport and athletics. Since 1950, only three published articles pinpointed personality studies of the female Physical Educator. Two of these dealt particularly with under-graduate majors as compared with non-majors. However, there were several related studies which greatly facilitated the inquiry.

The successive paragraphs have detailed these investigations, the researchers, and their conclusions.

Initial Personality Tests and Conclusions

Palmer administered the Bernreuter Personality test to determine the qualities possessed by successful teachers of Physical Education.¹⁰ A Bernreuter Inventory purports to measure traits such as emotionalism, introversion and

¹⁰Irene Palmer, "Personal Qualities and Capacities of Women Teachers of Physical Education," Research Quarterly, 4:36, 1933.

extroversion and dominance and submission. Successful teachers of Physical Education scored materially higher on traits of emotional stability, extroversion, and dominance.¹¹

Duggan utilized this same instrument to ascertain whether dissimilarities existed between Physical Education majors and a group of non-majors, and the results were analogous to those of Palmer.¹² Regarding these identical qualities, Physical Education majors scored significantly higher.

Verifying the conclusions of the foregoing investigators, Espenschade established that the typical Physical Education major is less neurotic, and more dominant and sociable.¹³ However, this had no relationship to teaching success in Physical Education.¹⁴

Conclusions drawn from Various Other Trait Tests

Ragsdale employed the Pressey XO tests for emotionality and Marston's introversion-extroversion rating scale, to attempt to define the specific personality traits of college

¹¹Irene Palmer, "Personal Qualities and Capacities of Women Teachers of Physical Education," Research Quarterly, 4:36, 1933.

¹²Anne Schley Duggan, "A Comparative Study of Undergraduate Women Majors and Non-Majors in Physical Education with Respect to Certain Traits," Research Quarterly, 8:43, 1937.

¹³Anne Espenschade, "Selecting Women Major Students in Physical Education," Research Quarterly, 19:72, 1948.

¹⁴Ibid.

majors in Physical Education.¹⁵ Ragsdales' findings disclosed that women majors tend toward extroversion, and that they were emotionally better balanced than non-majors in the general college.¹⁶

Thorpe gave the Edwards test to determine whether patent differences existed between women undergraduates, graduate students and successful teachers of Physical Education.¹⁷ The Edwards Personal Preference Schedule is a measure of such personality variables as deference, dominance, aggression, heterosexuality, autonomy, succorance, et cetera.¹⁸ Fifteen of these types of items were incorporated in the test.

When compared with a normative group, successful women Physical Education teachers were found to rate higher on deference, order, dominance and endurance. However majors, graduate students and successful teachers scored significantly lower than the norm on the traits of succorance, autonomy, nurturance, heterosexuality and aggression.

¹⁵C. E. Ragsdale, "Personality Traits of College Majors in Physical Education," Research Quarterly, 3:248, 1932.

¹⁶Ibid.

¹⁷Jo Anne Thorpe, "Study of Personality Variables among Successful Women Students and Teachers of Physical Education," Research Quarterly, 29:83, 1958.

¹⁸Ibid.

Timmermans utilized the Guilford-Zimmerman Temperament Survey in an effort to verify whether differences exist between female Physical Education majors and non-majors.¹⁹ Only one of the traits tested showed a significant difference, that of general activity, on which Physical Education majors scored higher.²⁰ This finding contradicted the conclusions of many previous investigators in that Physical Education majors did not tend to be more dominant and extroverted and less neurotic than the general college majors.

Landers gave the Minnesota Multiphasic Personality Inventory and the Gough Scale of Psychological Femininity, to determine if high interest in sports was negatively associated with the female sex role.²¹ These test results indicated that women Physical Education Majors were significantly less feminine.²² However, an examination of between group differences for each of the categories contained in the instrument, showed only two categories, restrained and cautious versus brag and exaggerated, on which Physical Education majors scored higher, differentiated the Physical

¹⁹Helen M. Timmermans, "A Comparison Between Physical Education Majors and Non-Majors in Certain Personality Traits," Research Quarterly, 39:1,088, 1968.

²⁰Ibid., p. 1,090.

²¹Daniel M. Landers, "Psychological Femininity and the Prospective Female Physical Educator," Research Quarterly, 41:164, 1970.

²²Ibid., p. 167.

Education majors from the Education majors.²³ In a quasi-related study Ogilvie found that women who competed on high levels and who retained their motivation for competition, had generally the traits of ambition, organization, deference, dominance, endurance and aggression.²⁴ Other dominant traits exhibited were emotional maturity, self-control, self-confidence, tough mindedness, truthfulness, intelligence, high conscience development and low levels of tension.²⁵

Summary of Review of Literature

Palmer, Duggan, Espenschade and Ragsdale discovered that women in the field of Physical Education, or those with a high sports interest, are as a group less neurotic but more extroverted and dominant.

Thorpe and Ogilvie found these sportswomen to be more dominant along with a notable degree of deference and endurance. Ogilvie established, too, that emotional stability was an outstanding trait.

Landers substantiated the fact that prospective female Physical Educators were significantly less feminine. On

²³Daniel M. Landers, "Psychological Femininity and the Prospective Female Physical Educator," Research Quarterly, 41:164, 1970.

²⁴Bruce C. Ogilvie, "Psychological Consistencies within the Personality of High-Level Competitors," Journal of the American Medical Association, 205-11, p. 162, September, 1968.

²⁵Ibid.

analysis of the separate categories, only the items of restrained and cautious versus brag and exaggerate, definitely confirmed this discreteness.

Contravening the foregoing results, Timmerman's test indicated that female Physical Education majors are no more dominant nor less neurotic, nor do they possess a greater degree of endurance than non-majors.

Thorpe found, in addition to the traits of deference, dominance and endurance, that successful teachers and majors evinced a low degree of autonomy, succorance, nurturance, heterosexuality and aggression.

Chapter III

PROCEDURE

This chapter includes a description of the selection of the subjects, the testing device, the experimental design, the statistics employed and a brief resumé.

The Subjects

One hundred females with Junior and Senior status, enrolled at Appalachian State University during the Fall quarter of 1971, were selected by random sampling for this study. The sample was divided into fifty Physical Education majors and fifty females not majoring in Physical Education. To insure the minimum number of fifty samples of each type needed for the study, seventy-five girls in each group were requested to volunteer for the test.

An attempt was made to obtain a cross section of other majors in the non-Physical Education group. Non-majors included in the sample represented the departments of Economics and Business, English, Foreign Languages, Mathematics, Music, Biology, and Home Economics, Elementary Education and Secondary Education. The chairmen of the departments involved were requested to recommend particular classes that would contain from seven to ten female majors in their disciplines. The designated professors were interviewed and permission was granted for the investigator to have time set aside in each class to give background

information on the study and test, and to solicit volunteers.

Certain basic assumptions were made in limiting the sample to Juniors and Seniors. These assumptions were:

1. That they would have probably previously made a career choice.
2. That the two year age difference and additional social physical and emotional maturity would reflect in expressed attitudes on the Edwards Personal Preference Schedule.
3. That the expressed attitudes would be more characteristic of their respective disciplines.

Testing Device

The Edwards Personal Preference Schedule was selected as the testing device. This instrument was designed to measure the normal personality traits of achievement, deference, order, exhibition, autonomy, affiliation, intrapception, succorance, dominance, abasement, nurturance, change, endurance, heterosexuality, and aggression.

A check for test consistency was incorporated in the test. The consistency variable was derived by a comparison of the number of identical choices made in two sets of the same fifteen items. In two appearances of one of these items, the possible response patterns would be AB, BA, AA, and BB.²⁶

²⁶Allen L. Edwards, "Edwards Personal Preference Schedule, Test Manual, (New York: The Psychological Corporation, 1959), p. 15.

If the subject were responding to the items by chance alone, each of the possible patterns of response would be equally likely to appear. Therefore, the probability of any one of these patterns occurring was only one in four. However, either AA or BB would be counted as an identical choice, and this would raise the probability of an identical choice to one half.²⁷ For two complete sets of fifteen items, the expected number of identical choices or the consistency score would be 7.5. Eleven or more identical choices was the number designated as being a significant departure from chance expectancy.²⁸

A national norm table, expressly for female college students was included in the testing manual. Seven hundred-forty nine college women comprised the sample for the normative group.²⁹ This national normative group provided an additional basis for comparison and in part mitigated the restrictiveness of the results of a localized test.

The validity rating of the Edwards test was based on a logical or construct type of validity. A listed validity rating of .52 for this test was consistent with ratings for

²⁷ Allen L. Edwards, "Edwards Personal Preference Schedule, Test Manual, (New York: The Psychological Corporation, 1959), p.15.

²⁸ Ibid.

²⁹ Edwards, op. cit., p.6.

other tests of this type.

The reliability coefficients for personality tests usually average between the .70's and .80's. Thus the median reliability rating of .73 on the Edwards Schedule indicated that this test was commensurate with or better than the general personality inventory.

The Edwards test was selected, since in addition to the previously mentioned reasons, this test was fairly easy to administer, score, and interpret and was relatively economical. It permitted group administration, could be hand-scored, could be interpreted without a major concentration in Psychology, and the length was ideal for a volunteer group.

Experimental Design

The test was given in three separate sessions, with particular care given to standardizing the conditions. All tests were administered in the Audio Visual room, with the same instructions given each time, and with each answer sheet checked for completeness. The subjects were aware of the reasons for the test and were strongly urged to answer all the items on the test. Since it was believed that anonymity would result in more honest answers and therefore add to the validity of the test, subjects were asked to write their majors on the answer sheets, but names were omitted.

Prior to the test, participants were requested to fill out a short personal questionnaire which provided

information pertinent to the study. A copy of this questionnaire can be found in Appendix A, page 29.

After administration of the test, a template was utilized to effect the consistency check and each answer sheet was scored and totaled. When all the papers had been scored, every third one was rescored as a check on the consistency of the scorers.

Following compilation of the raw scores, the Physical Education majors and the non-major groups were compared statistically by each of the fifteen individual traits tested. An additional comparison was made between the Physical Education majors and the national normative group.

Statistics Employed

The data were recorded on punched cards and processed via a statistical program developed for the I B M 1130 by Dr. M. C. Carter, University Statistician, Appalachian State University, Boone, North Carolina.

The statistical test utilized to compare the fifteen personality traits for the Physical Education majors versus the non-major group was the two sample Student's t test. Specifically, this test determined whether or not a significant difference existed between the average scores per group. There were fifteen separate tests conducted. The statistical test employed to compare the Physical Education majors and the normative group was the one sample t test.

Output of the statistical program run on the I B M 1130 was means and standard deviations per group per trait, calculated t test values per trait and simple correlations between traits per group.

Summary

Samples were selected at random and consisted of fifty female Physical Education majors and fifty female non-majors, from the Junior and Senior classes at Appalachian State University. They were administered the Edwards Personal Preference Schedule, a personality inventory, in order to ascertain whether significant trait differences existed between the female Physical Education majors and non-majors at this University.

Chapter IV

ANALYSIS OF DATA

In an attempt to broaden the view of the study, a questionnaire was given to all of the subjects. The results of this questionnaire* disclosed that there were only slight differences in the background of the two sample groups, and that these differences were mainly in the area of sports participation. Twelve non-majors representing twenty-four percent of this sample participated in varsity sports, while thirty-four majors representing sixty-eight percent were varsity team members. Results on the intramural question were similar, with twenty-one of the non-majors representing forty-two percent and thirty-seven majors representing seventy-four percent, having played. One other discriminating item showed that while the non-majors were all influenced in their career choice by either a high school or college teacher, family or friend, nine subjects or eighteen percent of the Physical Education majors purported to have influenced themselves to enter this profession.

The Student's two sample t test for significance between average scores per group was utilized to compare the major and non-major groups. The formulas for this statistical test can be found in Appendix C, page 31, and the data

*Results of the questionnaire can be found in Appendix B, page 31.

on which the findings were based in Appendix D, page 32 .

Table 1 contains the means, standard deviation and t scores for the Physical Education majors and non-majors groups.

Table 1
Means, Standard Deviations and t Scores for
Physical Education Majors and Non-Majors

Variable	Means P.E.	Std. Dev.	Means Non P.E.	Std. Dev.	t Scores
achievement.....	12.92	3.696	11.66	3.347	1.786 ^a
deference.....	10.46	3.546	11.60	3.886	-1.532 ^b
order.....	9.92	5.367	8.94	4.077	1.028
exhibition.....	13.12	3.957	13.74	3.089	-0.873
autonomy.....	12.76	4.438	13.10	4.056	-0.399
affiliation.....	17.00	4.840	16.10	4.265	0.889
intraception.....	16.10	4.243	16.40	5.205	-0.315
succorance.....	13.24	5.000	12.50	5.203	0.725
dominance.....	11.20	5.394	13.00	4.194	-1.862
abasement.....	15.52	4.747	15.88	4.317	-0.396
nurturance.....	16.86	4.873	16.60	4.890	0.266
change.....	17.40	5.402	17.84	4.991	-0.423
endurance.....	12.90	5.682	11.94	4.954	0.900
heterosexuality...	19.04	5.058	17.96	5.616	1.010
aggression.....	11.18	4.565	12.64	4.906	-1.540
consistency.....	12.04	1.369	11.72	2.000	0.933

^aThe difference was considered significant if the absolute value of the t score was greater than 1.65.

^bMinus signs are an indication of possession of a given trait in larger amounts by the Physical Education majors group.

No differences were considered significant unless the absolute value of the t score was greater than 1.65. On comparison of the results for the sample groups, only the variables of dominance and achievement had t scores large enough to be considered statistically significant. According

to the Student's t distribution, the variance between the two groups on achievement was 1.786, which represented a lower achievement preference for the Physical Education majors. The Physical Education majors scored significantly higher on the dominance trait, with a variance of -1.862.

The Student's one sample t test for significance between average scores per group was employed to compare the Physical Education majors group and the national normative group. The formula for this statistical test can also be found in Appendix C, page 31 .

Table 2 contains the means, standard deviations and t scores for this comparison.

Table 2

Means, Standard Deviations, and t Scores for
Physical Education Majors and Normative Group

Variable	Means P.E.	Std. Dev.	Means Norm	Std. Dev.	t Scores
achievement.....	12.92	3.69	13.08	4.19	-0.306*
deference.....	10.46	3.54	12.40	3.72	-3.868
order.....	9.92	5.36	10.24	4.37	-0.421
exhibition.....	13.12	3.95	14.28	3.65	-2.072
autonomy.....	12.76	4.43	12.29	4.34	0.748
affiliation.....	17.00	4.84	17.40	4.07	-0.584
succorance.....	13.24	5.00	12.53	4.42	1.004
dominance.....	11.20	5.39	14.18	4.60	-3.906
abasement.....	15.52	4.74	15.11	4.94	0.610
nurturance.....	16.86	4.87	16.42	4.41	0.638
change.....	17.40	5.40	17.20	4.87	0.261
endurance.....	12.90	5.68	12.63	5.19	0.336
heterosexuality...	19.04	5.05	14.34	5.39	6.570
aggression.....	11.18	4.56	10.59	4.61	0.913
consistency.....	12.04	1.36	11.74	1.79	1.549

*Minus signs indicate lower Physical Education score.
Significant at the 1.65 Level of Confidence.

Again the degree of significance was plus or minus 1.65. The outcome of the one sample t test which compared the Physical Education majors and the normative group, revealed that there were statistically significant differences on five variables. The Physical Education majors rated lower on deference, exhibition, intraception and dominance and higher on heterosexuality. The degree of difference on the dominance, deference and heterosexuality traits showed the greatest variance, with the heterosexuality factor the one with the highest degree of differentiation.

There were no significant differences between the groups on achievement, order, autonomy, affiliation, succorance, abasement, nurturance, change, endurance, aggression, and on the consistency score.

Chapter V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary of the Results

The results of the questionnaire revealed very small differences in the background of the two groups. The greatest variance was in the area of athletic participation.

When the Physical Education majors test scores were compared with those of the non-majors, the results showed that the majors group scored significantly lower in achievement and higher on dominance than majors in the general college. No significant differences were discovered between these two groups on deference, order, exhibition, autonomy, affiliation, intraception, succorance, abasement, nurturance, change, endurance or heterosexuality nor on the consistency check.

These findings opposed those of previous investigations in which it was indicated that female Physical Education majors were more dominant, less feminine and possessed a high degree of deference and endurance, and confirmed the validity of the null hypothesis. Of all these traits, only the dominance variable proved to be significant. It should be noted that although there were two instances when trait differences of the two sample groups were of statistical significance, the degree of differentiation was not large enough for this to be designated as an adequate discriminator. No general pattern of behavior that would have

distinguished the Appalachian State University female Physical Education majors could be discerned. These results could indicate that the typical Physical Education major has changed greatly in personality traits in the past few years.

When the Physical Education majors were compared with the national normative group, significant differences were noted, with lower scores on deference, exhibition, intra-ception, and dominance and a higher score on heterosexuality. The degree of difference on the dominance, deference and heterosexuality traits showed the greatest variance, with the heterosexuality factor the one with the highest degree of differentiation. There were no significant differences between the groups on achievement, order, autonomy, affiliation, succorance, abasement, nurturance, change, endurance, or aggression, nor on the consistency score.

These findings, once again did not support previous research. The Appalachian State University Physical Education majors scored significantly lower on four traits on which female majors previously scored higher, and rated very high on heterosexuality, a trait on which these majors purportedly generally tested very low.

Conclusions

The following were the conclusions based on the statistical results of this study. These conclusions were:

1. That the differences in personality traits between Physical Education majors and non-majors were

negligible, at Appalachian State University.

2. That on the basis of the results, one would expect Appalachian State University Physical Education majors to exhibit more dominance and less achievement.

3. That if the belief were extant that personality differences exist, then this group of female Physical Education majors were being stereotyped unfairly. If this local group is typical of the larger group of Physical Education majors, then perhaps all majors in this field are stereotyped unfairly.

4. That the local Physical Education group varied significantly from the national normative group on five traits.

5. That the Edwards Personal Preference Schedule did not reveal a distinguishable general pattern of personality for females majoring in Physical Education at Appalachian State University.

Recommendations

In view of the findings, it was believed that the Edwards Personal Preference Schedule should not be utilized at Appalachian State University, in the career guidance nor as a basis for selection of female Physical Education majors.

Secondly, perhaps an area of the curriculum could stress achievement to strengthen this trait in Appalachian State University female Physical Education majors.

Also, it was believed that there is a need for

development of a scale that would evaluate such traits as leadership, adaptability, social aptitude and other personality traits presumed to be essential for success in the field of Physical Education. These factors in combination with an intelligence test would probably be a better indicator of expectancy of success.

Another recommendation was that national norms be established for female Physical Education majors utilizing various trait tests. If this type of test is to be of value as an aid to career selection, then there must be some basis for comparison.

In addition, it was thought that if the concept of the female Physical Educator entailed a sort of social stigma, then it is highly recommended that women in the field must make an effort, through guidance and public relations programs, to alleviate this situation and enhance their image.

A final suggestion was that perhaps future studies could delve into the contention of whether or not the attitude of the public has changed in the last two decades, or whether it is presently in a stage of transition.

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APPENDIX A

QUESTIONNAIRE

Age _____ College Major _____

Approximate Grade Point Average _____

Class _____

Last grade of public school or college completed by

Father _____ Mother _____

Had you decided on your present major before entering

Appalachian State University? _____

In which year did you select your present major?

Fr. _____ Soph. _____ Jr. _____ Sr. _____

What one person influenced you most in your particular
major choice? _____

Did any member of your immediate family choose the profession
that you chose? Father _____ Mother _____ Brother _____

Sister _____ Aunt _____ Uncle _____

What type of job do you want when you graduate? _____

Did you participate in varsity sports in high school? _____

Did you participate in intramurals in high school? _____

APPENDIX B

QUESTIONNAIRE RESULTS

1. Means age P. E. Majors.....	20.56
Non-Majors.....	20.64
2. Approximate G. P. A. P E Majors.....	2.56
Non-Majors.....	2.78
3. Number of Jrs. P. E. Majors.....	24.00
Non-Majors.....	19.00
4. Number of Srs. P.E. Majors.....	26.00
Non-Majors.....	31.00
5. Number changed major since entering A. S. U.	
P. E. Majors.....	10.00
Non-Majors.....	19.00
6. Who most influenced career choice P. E. Majors	
Friend or Relative.....	9.00
H. S. or College Teacher.....	29.00
Self.....	9.00
Non-Majors	
Friend or Relative.....	12.00
H.S. or College Teacher.....	34.00
7. Type of job P. E. Majors	
Teaching.....	37.00
Non-Majors	
Teaching.....	37.00
8. Participated in Varsity Sports	
P. E. Majors.....	34.00
Non-Majors.....	12.00
9. Participated in Intramural Sports	
P. E. Majors.....	37.00
Non-Majors.....	21.00

APPENDIX C

Test for the null hypothesis that there is no difference between the Physical Education majors and non-majors averages.

The t test formula used to compare the Physical Education majors versus the non-Physical Education majors was the two sample t test.

$$\bar{X} = \frac{\sum X}{N}$$

$$\sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

$$t = \frac{\bar{X}_{pe} - \bar{X}_{non}}{\sqrt{S \left(\frac{1}{N_{pe}} + \frac{1}{N_{non}} \right)}}$$

where N_{pe} = # of Physical Education majors in sample

and N_{non} = # of non Physical Education majors in sample

and $S = \frac{(N_{pe} - 1) S_{pe}^2 + (N_{non} - 1) S_{non}^2}{N_{pe} + N_{non} - 2}$

Where S_{pe}^2 = sample variance for Physical Education majors

and S_{non}^2 = sample variance for non Physical Education majors

To compare the Physical Education group versus the national norm, the one sample t test was used.

$$t = \frac{\bar{X}_{pe} - \text{Nat'l norm}}{\sqrt{\frac{S_{pe}^2}{N_{pe}}}}$$

APPENDIX D

DATA COMPILED FOR PHYSICAL EDUCATION MAJORS AND NON-MAJORS
FROM THE EDWARDS TEST

Variable	Total Score P. E. Majors Group	Total Score Non-Majors Group
achievement	583 ^a	646 ^b
deference	580	523
order	447	496
exhibition	687	654
autonomy	655	638
affiliation	805	850
intraception	820	805
succorance	625	662
dominance	650	560
abasement	794	778
nurturance	836	853
change	880	870
endurance	616	645
heterosexuality	890	952
aggression	632	559
consistency	586	590

^aTotal for fifty samples for the Physical Education group.

^bTotal for fifty samples of the non Physical Education group.