A COMPARISON OF ACADEMIC ACHIEVEMENT AND SUCCESS ON THE NATIONAL TEACHER EXAMINATIONS OF PHYSICAL EDUCATION MAJORS AND NON-MAJORS IN SELECTED PREDOMINANTLY NEGRO COLLEGES AND UNIVERSITIES

By

HOWARD DAVIS

Bachelor of Science
Allen University
Columbia, South Carolina
1953

Master of Arts
New York University
New York City, New York
1957

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of the Oklahoma State University
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Thesis Approved:

Thesis Adviser

Dean of the Graduate College

PREFACE

Physical education professional programs and their majors are often misunderstood by segments of our college population as well as members of the lay public. Educators from other fields sometime wonder aloud how graduates from physical education professional programs compare in intelligence with graduates from other areas of teacher education. It appears that the status of physical education is questionable. However, the physical education professional programs are not the only questionable areas of higher education; some critics have questioned the quality of teacher education in many Negro colleges and universities.

The writer has proposed to answer two major questions in this investigation. One question is: What is the status of physical education professional programs in predominantly Negro colleges and universities as indicated by entrance examination scores, grade-point averages, and the National Teacher Examination scores? The second question is: What is the status of teacher education programs within predominantly Negro colleges and universities as compared with other schools that used the National Teacher Examinations.

The investigator wishes to express sincere appreciation to the 26 institutions that provided the necessary data to make this study possible. Sincere gratitude is extended to Dr. A. B. Harrison, Chairman of the Advisory Committee, for encouragement, guidance, and continuing assistance and to the members of the committee, Dr. John Bayless,

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Special gratitude is expressed to my wife, Eunice, and children, Todd, Scott, and Kia, for their many sacrifices made during the past three years. To my wife I can only humbly give thanks for her many hours of typing and clerical assistance so important in achieving the various drafts of this research.

To all others who have been of assistance, directly and indirectly, I extend my sincere appreciation.

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CHAPTER I

THE NATURE OF THE PROBLEM

Introduction

How well a democracy works depends on the education of its people. Since no chain is stronger than its weakest link, a view must be taken at all institutions of education as links in the chain of education. The link of concern in this study is the teacher education program in predominantly Negro colleges and universities. According to Jencks and Riesman, the great majority of Negro institutions stand near the end of the academic procession in terms of student aptitude, faculty competence, and intellectual stimulation.[1]

There is a problem in the United States today, one which goes far deeper and has more serious implications for the future of the nation than many of those problems which so frequently appear in newspaper headlines. It is the problem of the education gap between whites and blacks, which in essence, has created a communication gap. Herein lies the cause of many unwarranted problems.

The question of why this problem exists has been overworked in recent years. It is time for the emphasis to be placed on a more

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[1]Christopher Jencks and David Riesman, The Academic Revolution (Garden City, New York, 1968), p. 428.

relevant question: What can be done to bridge this unwarranted gap, and where do we start?

This is, of course, a sweeping assertion, and it is not easy to document fully. Various data are, however, available.

> If one looks at students, for example, one finds that the verbal and mathematical aptitude scores of most Negro colleges are lower than at even the worst white colleges in the same states. There are, of course, plenty of whites with lower scores than the typical Negro college student, but such whites do not usually go to college. Test scores for Negro and white colleges are not available on a national basis, but the fragmentary data which are available suggest that most Negro college students would probably rank in the bottom quarter of their class if they were enrolled in a typical white college.[2]

The educational system in the United States is young, but in spite of its youth, it has made enormous progress. American education no longer looks to other countries as models to copy. Instead, America serves as a model for other countries. In spite of the progress that has been made in recent years, the educational system in this Country is not as effective as it could, or should be. Since no chain is stronger than its weakest link, one might conclude that the educational system of this Country is no stronger than any of its component parts. And here one must consider those institutions which are predominantly Negro.

In spite of the low status of the majority of Negro colleges and universities in America, they are serving useful purposes. Since the majority of students in Negro schools have been limited due to aptitude, economic status, discrimination, etc., the importance of these institutions is apparent. Among the many useful functions of these Negro

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[2]Ibid., pp. 428-429.

institutions is the fact they are providing education for many students who would not otherwise be able to attend college.

One school of thought is to do away with these schools altogether. However, the writer believes it is more feasible to up-grade the already established institutions. According to Wright:

> With adequate support the predominantly Negro colleges and universities will play a vital, if not decisive, role in providing the education required. And certainly the education will not be secure without them, for they without adequate means, have demonstrated more know-how in dealing with the disadvantaged than any other group of institutions. It will be these colleges and universities that will assume the formidable task of educating high risk students-those not being recruited vigorously on any appreciable scale by any other group of institutions.[3]

The success of Negro colleges and universities in the future will be determined to a large extent by the efforts put forth by administrators and faculties to up-grade the educational programs within these institutions. Since no educational program is stronger than its faculty and no college or university is stronger than its weakest department, up-grading can best be done by starting at the departmental level. The programs of primary concern in this study were the professional physical educational programs in predominantly Negro colleges and universities.

From a study of 342 Negro physical education faculty members, Kirk stated that the general concensus is that black physical education staffs are quite inadequate in terms of over-all academic preparation and professional production and activity on a national and regional

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[3]Stephen J. Wright, "The Promise of Equality," Saturday Review (July 20, 1968), pp. 45-46.

scale.[4] The viability of the health and physical education faculty in most predominantly Negro colleges is questionable, but they show every sign of improving. The professional preparation and activities of these persons were due, to a great degree, to the calibre of preparation and the performance level demanded by administrators of the colleges. Traditionally, the professional programs were adjuncts to the athletic programs. Young men majoring in physical education were primarily interested in athletics and are currently working in athletics in addition to health and physical education. The majority of administrators serve in a dual capacity: athletic director and chairman of the Department of Health and Physical Education. As is often true in many institutions, black and white, the physical education profession suffers from less than enthusiastic support. In the black institutions, this problem is magnified because it is still difficult for administrators to accept the physical education program as anything more than an adjunct of the athletic program.

It is very clear that there is a need for a better understanding of the true meaning of physical education, especially by administrators working in predominantly Negro colleges and universities. Furthermore, Bucher stated:

> Indications that the public does not appreciate the value of physical education include lack of facilities, insufficient time allotted to physical education in the schools, failure to give credit for physical education in school programs, frequent emphasis on a few gifted athletes at the expense of all the students, haphazard scheduling of classes, indifference on the part of many administrators, poor financial backing, poorly planned programs in many

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[4]Robert H. Kirk, "The Posture of Predominantly Negro College and University Health and Physical Education Faculties," Journal of Health, Physical Education, and Recreation (February, 1969), p. 83.

> teacher education institutions. If the true meaning of physical education were understood by all, these conditions would not exist, and instead of encountering opposition to the establishment of acceptable physical education programs, they would be welcomed with open arms because their values and contributions to enriched living would be recognized.[5]

According to Henry, the black physical educator wishes to participate in professional association affairs at all levels.[6] He also wishes to be hired, promoted, elected, etc., on merit rather than by race. These needs should encourage each administrator and faculty member connected with professional programs in predominantly Negro colleges and universities to do everything in their power to up-grade these programs so that future black physical educators will be able to meet the challenge.

> As early as 1950, the Educational Policies Commission stated that training for the young must develop talents appropriate to the complexities and specialization of contemporary life as well as a sense of social responsibility and other qualities of character that will direct the use of their talents toward socially beneficial ends.[7]

The challenge has always been to educate so that each individual could realize his own best potential. The goal has not changed, but new paths to its attainment are needed. The added challenge facing the professional programs that were involved in this study is to adequately prepare young people to live effectively in a world which is changing in their own lifetime.

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[5]Charles A. Bucher, Foundations of Physical Education, 5th ed. (St. Louis, 1968), p. 24.

[6]Charles D. Henry, "The Black Physical Educator, Is He Different; What Does He Want?" The Physical Educator (October, 1969), p. 110.

[7]James W. Trent and Leland L. Medsker, Beyond High School (San Francisco, 1968), p. 3.

The machine age has provided man with more leisure hours than ever enjoyed before in the history of mankind. There are more swimming pools, golf courses, parks, gymnasiums, etc. It is possible today for the poor to enjoy fruitful leisure hours providing the appropriate knowledge and skill are made available. The amount of appropriate knowledge and skill the poor and disadvantaged will have in the future will depend on the type of physical education instruction made available in school. The type of instruction received depends on how well professional programs prepare future physical educators.

Stienhaus, a great teacher, lecturer, writer, and researcher in the field of physical education stated:

> The machine age has disused man muscles into round shoulders, pot belly and flat feet. His back aches while sitting and his heart pounds after the first flight of stairs. Every teacher's effort to increase the quantity and quality of human life is fitness education. How well the space age will disuse man's muscles tomorrow depends on the products of our professional program today.[8]

According to Cratty, an authority in movement behavior and motor learning:

> School administrators want to know what the physical educators are doing and why and how they propose to do it. Members of academic disciplines on the university campus attempt to ascertain whether research being produced by physical education faculties might be conducted better by some other life scientist. Researchers from other fields sometimes wonder aloud whether physical educators are producing basic research, and if so, within what area of human behavior?
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> The physical educator has often been hard pressed to provide meaningful responses to these queries. However, it appears that his professional respectability may be based upon the adequacy of his answers and upon the quality

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[8] Arthur H. Steinhaus, Toward an Understanding of Health and Physical Education (Illinois and Indiana, 1963), p. 5.

> of the subsequent performance to which his responses will hopefully commit him.[9]

These conditions also exist at predominantly Negro colleges and universities. The solution to the problem is up-grading. And since up-grading would logically occur at the departmental level, it is imperative that individual teacher preparation be elevated. This is, of course, a problem of teacher proficiency. The outstanding example of a proficiency examination for teachers is the National Teacher Examinations (NTE) published by the Education Testing Service, Princeton, New Jersey. The National Teacher Examinations consist of a battery of tests designed to measure the professional knowledge, mental ability, and general cultural background of prospective teachers.

The test was designed for several purposes: for use in counseling and guidance of students in education, as an institutional evaluation of teacher education courses and curriculum offerings, and as a measure of a student's achievement with respect to placement purposes.[10]

However, there is a growing tendency today to view the student's performance on the NTE as a necessary prerequisite for certification. State departments of education in nine states (Colorado, Delaware, Florida, Georgia, New Hampshire, North Carolina, South Carolina, Vermont, and West Virginia) require NTE scores for certification of teacher or related purposes such as placement, promotions, salary scales, etc.

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[9]Bryant J. Cratty, Movement Behavior and Motor Learning, 2nd ed. (Philadelphia, 1967), p. 8.

[10]James N. Lewis, "Do High National Teacher Exam Scores Guarantee Top Professional Performance," The Texas Outlook (June, 1968), pp. 20-21.

Candidates for teaching positions in local school districts in North Carolina and South Carolina must take the NTE to qualify for regular teaching certificates. In Florida, the NTE is required if certain other examinations specified by the State Departments of Education are not taken in lieu of the NTE. Thirty-seven local school systems requiring NTE scores include Nashville, Memphis, and Chattanooga in Tennessee; Houston, Dallas, Waco, and Abilene in Texas; and such other cities as Atlanta, Baltimore, New Orleans, Philadelphia, Pittsburg, San Francisco, St. Louis, and Washington, D. C. In addition, 62 other local school systems encourage applicants for teaching positions to submit scores on the National Teacher Examinations together with their credentials. For some of these school systems, this encouragement is mainly a suggestion.[11]

It is interesting to note that over 75 per cent of the predominantly Negro colleges in this Country are located in the states listed above.

The author's major concern here was whether physical education majors attending predominantly Negro colleges received the necessary experience to enable them to have adequate education and preparation in order to perform successfully as teachers. Achievement is expected in a variety of ways at adequate levels of competency. Such achievement is not possible, lacking sufficient basic intelligence; but intelligence alone, without preparation and study and achievement, does not qualify one for the job to be done. Not just any intelligent person

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[11]Howard R. Boozer, "External Examinations as Predictors of Competence," The Journal of Teacher Education (March, 1965), pp. 210-214.

is by virtue of his intelligence qualified to be a physician, lawyer, architect, teacher, etc., without study and achievement related to the expectation of the particular profession. It follows that tests of achievement in areas related to the future work of a teacher should provide useful information concerning the general level of performance that may be expected in those areas in the future.

Statement of the Problem

The general concensus seems to be that physical education professional programs in predominantly Negro colleges and universities have been quite inadequate in preparing future physical educators in terms of over-all academic preparation and professional production. Is inadequacy truly a correct interpretation? The writer realized it would take a far-reaching study of programs to arrive at a reasonable and valid conclusion. The writer was also aware of the fact that the inevitable problem of the selection of a reasonable standard by which to evaluate these programs existed.

Since the National Teacher Examinations are a measure of curriculum offerings and teacher education courses, it was felt that a comparison of academic achievement and success on these examinations of physical education majors and non-majors from predominantly Negro colleges and universities would give some indication of the status of physical education professional programs within these institutions. It was also felt that the NTE scores would give some indication of the status of teacher education programs in predominantly Negro colleges and universitites as compared with other schools that use the National Teacher Examinations.

The primary purpose of this study was to compare academic achievement and success on the National Teacher Examinations of physical education majors and non-majors in selected predominantly Negro colleges and universities.

Sub-Problems in the Study

Sub-problems investigated within this study of predominantly Negro colleges and universities were:

(1) To determine whether or not scores made on the entrance examination by majors equaled that of non-majors.

(2) To determine whether or not achievement on the common exam by majors equals that of non-majors.

(3) To determine whether or not achievement on the optional or special field exam by majors equaled that of non-majors.

(4) To find the relationship between entrance exams, academic achievement, and performance on the special field examination for majors and non-majors.

(5) To find the relationship between entrance exams, academic achievement, and NTE performance for majors and non-majors.

(6) To determine the status of teacher education programs in predominantly Negro colleges and universities as compared with other schools that use the National Teacher Examinations.

Definition of Terms

The following definitions will make more explicit the meaning of terms used in this study:

(1) National Teacher Examinations -- a battery of tests designed to measure the professional knowledge, mental ability, and general cultural background of prospective teachers.

(2) NTE Scores -- the composite score on the National Teacher Common Exam.

(3) Common Examinations -- a set of examinations which consists of five tests: (1) Professional Information; (2) English Expressions; (3) History, Literature, and Fine Arts; (4) Science and Mathematics, and (5) Non-Verbal Reasoning.

(4) Optional Examinations -- specialized tests to aid in assessing the teacher's understanding of subject matter and methods in his field of specialization.

(5) Majors -- students majoring in physical education.

(6) Non-Majors -- students majoring in areas of education other than physical education.

(7) Academic Achievement -- academic achievement to be measured by the four-year cumulative grade point average.

(8) Above Average Grade-Point -- an average of 3.15 or higher on hours earned.

(9) Average Grade-Point -- average grade-point will be considered to range between 2.00 and 2.50 on hours earned.

(10) Success on the NTE -- those who score in excess of 550 points on the weighted Common Examinations.

(11) Poor Performers -- those who score less than 550 total points on the Common Examinations.

Hypotheses

The following were the hypotheses derived from this investigation:

(1) There was no significant difference between the entrance examination scores of majors and non-majors.

(2) There was no significant difference between the grade-point averages of majors and non-majors.

(3) There was no significant difference in achievement on the Common Examination by majors and non-majors.

(4) There was no significant difference in achievement on the Optional or Special Field Examinations by majors and non-majors.

(5) There was no significant correlation between the following for majors:

- (a) entrance examination scores and grade-point averages
- (b) entrance examination scores and NTE (Common)
- (c) entrance examination scores and NTE (Optional)
- (d) grade-point averages and NTE (Common)
- (e) grade-point averages and NTE (Optional)
- (f) NTE (Common) and NTE (Optional)

(6) There was no significant correlation between the following for non-majors:

(a) entrance examination scores and grade-point averages

(b) entrance examination scores and NTE (Common)

(c) entrance examination scores and NTE (Optional)

(d) grade-point averages and NTE (Common)

(e) grade-point averages and NTE (Optional)

(f) NTE (Common) and NTE (Optional)

(7) There was no difference between the participating schools on three selected variables: entrance examination scores, NTE (Common) and NTE (Optional).

Significance of Study

As a staff member of the Physical Education Department in a college with a predominantly Negro enrollment, the author has had the opportunity to discuss major problems with many physical education chairmen and teachers from other such colleges. One important issue that inevitably arises is that inferred by analysis of scores from the National Teacher Examinations. As mentioned above, in some cities a high score on this examination is required for employment, and other states have included the NTE score in the compilation of salary scales. Requirements vary from state to state, but the trend of using the NTE score in some way is increasing among states.

In too many instances, physical education majors in the colleges concerned make low scores on the NTE (common exam) while students majoring in other areas make fair to good scores. The following explanations have been advanced: (1) the amount of general education required for physical education majors might be inferior to that

required by other departments, (2) physical education departments might attract and admit more inferior students (low aptitudes), and (3) students majoring in other areas may have an advantage in taking the NTE because of its content. It contains whole sections on mathematics, English, social studies, music and art, science, etc. This gives students majoring in these areas an advantage on their particular section and an equal chance on other sections.

Scope of the Study

(1) The investigation included only predominantly Negro colleges and universities that require students in education to take the NTE.

(2) The investigation included only students in education who took the 1969 NTE.

(3) The investigation included only students who attended a predominantly Negro college or colleges for a minimum of three years.

(4) The investigation included only predominantly Negro colleges and universities which offer a major in physical education (teaching).

CHAPTER II

REVIEW OF RELATED LITERATURE

This investigation concerned itself with academic achievement and success on the National Teacher Examinations of physical education majors and non-majors in predominantly Negro colleges and universities. Also, a comparison of test scores (NTE and ACT) with national norms was studied. Therefore, studies and articles in three related areas seem pertinent to this research. These areas are: (1) the National Teacher Examinations, (2) the status of physical education, and (3) racial differences in intelligences.

The National Teacher Examinations

The National Committee on Teacher Examinations was appointed by the American Council on Education at the request of a group of school superintendents in the spring of 1939. The Carnegie Foundation for the Advancement of Teaching provided funds for the development of the project and the National Committee of the Cooperative Test Service of the American Council on Education was assigned the task of preparing the annual forms of the battery of examinations to be used.

It should be stated at the outset that the superintendents who inaugurated this project were well aware that no battery of tests could make possible a complete evaluation of teachers. In general, the superintendents stated that they wished information concerning the

extent to which candidates could read with understanding, could express themselves clearly, and could handle numerical and non-verbal concepts intelligently. They also wished to know to what extent the candidates had acquired a good liberal education and the extent of their awareness of contemporary affairs and current social problems. They wished information concerning the degree to which the candidate was aware of the social implications of education, his knowledge of the basic principles of psychology as they apply to education, and his familiarity with the techniques of guiding and assisting students. Lastly, they wished to know the extent to which the teacher was really a master of those fields in which he proposed to teach.[1]

The National Teacher Examinations were administered for the first time on March 29-30, 1940, in 23 official examining centers throughout the United States. A total of 3,726 applicants were examined on these days. The 1940 program of the National Teacher Examinations represents the first attempt to provide and administer a comprehensive set of examinations designed specifically for testing of prospective teachers and for general use. The most significant fact to note, perhaps, is that the National Teacher Examinations made possible for the first time a direct comparison of certain abilities of teaching candidates.[2]

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[1]John C. Flanagan, "An Analysis of the Results From the First Annual Edition of the National Teacher Examinations," Journal of Experimental Education, IX (March, 1941), p. 237.

[2]David G. Ryans, "The Professional Examination of Teaching Candidates: A Report of the First Annual Administration of the National Teacher Examinations," School and Society, 52 (October 5, 1940), pp. 283-284.

At first, the test battery required two full days of testing time. As data were accumulated on the reliabilities and intercorrelations of the tests in the original battery, it became fairly obvious that the examinations could be shortened, and in 1950 the examinations were administered in a single day. Also, in 1950, full responsibility for the examinations was transferred to the Educational Testing Service. Educational Testing Service appointed an advisory committee for the National Teacher Examinations; and, upon the recommendations of this committee, the general specifications for the test battery were established in 1951. This committee existed until 1964 when a second major revision was made.

Until the 1964-65 revision, the examinations were administered in two half-day sessions. It was customary to give the Common Examinations in the morning session, and in the afternoon students could take one or two of the Optional Examinations. Whereas the Common Examinations were designed to test general knowledge, abilities, and cultural background appropriate for all school teachers, the Optional Examinations evaluated competencies for specific teaching fields.

Major changes effected in the 1964-65 NTE program were based on recommendations made to the Educational Testing Service by its National Advisory Committee for Teacher Examinations. The revisions evolved largely from suggestions made by Review Committees appointed by the Educational Testing Service, from panels nominated by the American Association of Colleges for Teacher Education and the National commission on Teacher Education and Professional Standards.

According to Tullos, the more important changes adopted in 1964-65 were as follows:

> (1) tests were to be offered at four nationwide administrations each year instead of one. Local administrations authorized prior to November, 1964, were discontinued; (2) both the Common Examination and the Teaching Area Examinations were lengthened in order to enable them to sample the candidates' knowledge more broadly and in greater depth; (3) three separately scored tests in different aspects of Professional Education replaced the single Professional Information Test; (4) Advisory Part Scores provided more detailed measurement of the candidates' strengths and weakness in general education than previously; and (5) normative data was to be based on substantial numbers of college seniors tested in all regions of the country instead of on norms derived largely from teacher education institutions located in the Eastern part of the United States.[3]

When a new edition of the NTE is introduced, it is equated statistically to previous editions of the examinations. The weighted Common Examinations Total Scores and each of the Teaching Area Examinations are comparable from administration-to-administration. This comparability applies to all editions of the Common Examinations published since 1940, but only to those editions of Teaching Area Examinations published after February, 1964. A candidate's NTE scores represent his performance on a scale which is not influenced by the particular form on the examinations he takes or by the general level of performance of the group taking that form.[4]

When the National Teacher Examinations were first suggested, many school superintendents and personnel officers, particularly in large cities, were eager to use them. The examinations made it possible for them to avoid many local pressures and gave them what seemed to be a

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[3] S. J. Tullos, "An Investigation of the Uses of the National Teacher Examinations," (unpub. doctoral thesis, Colorado State College, 1967), pp. 19-20.

[4] Ibid., p. 21.

simple procedure for the elimination of some candidates on a supposedly objective basis.

For instance, in some cities teachers who do not attain a certain specified score on the National Teacher Examinations are not allowed to compete in any other part of the examination. Consequently, the National Teacher Examinations becomes an elimination process, rather than a means of assistance for effectively and intelligently selecting candidates best qualified for the jobs to be filled.

In one instance, all teachers in a state were required to take the National Teacher Examinations. Their individual salaries were determined by the marks they received. Their state teacher's certificates were granted or refused on the basis of their passing or not passing this pencil and paper test.[5]

> Numerous criticisms of these examinations have been advanced as well as convincing arguments for their wide adaptation. They have been carefully constructed by experts; no exaggerated claims are presented; scoring and interpretation are carefully done. On the other hand, questions have been raised regarding: (1) the validity of the examinations; (2) the educational premises on which they are based; (3) the centralized control of them; (4) the possibilities of misuse; (5) the effects on teacher education programs.
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> Many are concerned about the unwholesome effects of standardized testing on child development, teachers' morale, and curriculum building. Such tests unwisely used have turned attention to the minutia of education and in numerous instances have frozen the curriculum in fact-gathering patterns. Teachers are teaching to pass tests and thus save their professional neck even though they lose their professional souls.[6]

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[5]John R. Emers, "National Teacher Examinations: With Suggestions for Their Improvement in Ways That Will Prevent Certain Unfavorable Results," Nation's Schools, XXXIX (February, 1947), p. 47.

[6]Walter A. Anderson, "The National Teacher Examinations--A Criticism," Childhood Education, XVIII (December, 1941), p. 179.

Douglas examined and evaluated the section on guidance of the professional examination (on education).[7] He reported that it was fairly good in spite of its over-emphasis upon vocational guidance and statistical measurements, and that there is no doubt that all the examinations will improve as those who prepare them become more experienced.

Kandel stated that, in light of certain trends in education, it was to be expected that the recently established teacher examinations would be subjected to criticism.[8] Among the criticism was the fear that a national examination would interfere with the local autonomy of teacher-preparation institutions and of administrative authorities. The fear was based on a complete misunderstanding of the examination and its place in a much needed movement to raise the level of the competence of teachers. There was no more danger to local autonomy from this examination than from the accrediting systems, which at long last were moving from quantitative to qualitative standards. In support of the above statement, Collins suggested that even if these examinations were bad (and there was every indication that they were not) they were better instruments for the selection of teachers on the bases they measured than no examination at all.[9]

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[7]Harl R. Douglas, "National Teachers'-Menace or Answer to Prayer?" The Nation's Schools, XXVII (June, 1951), p. 25.

[8]I. L. Kandel, "The Teacher's Right To Be Ignorant: Apropos of the Criticisms of the National Teacher Examinations," The Business Education World, Vol. 22 No. 5 (January, 1942), p. 377.

[9]Evans R. Collins, "Teacher Selection By Examinations," Harvard Educational Review, 10 (January, 1940), pp. 4-5.

Although a review of the literature reveals no investigation with a similar intent to this one, the following studies are related.

In a study of the use of the NTE, Tullos reported that 39 out of 42 responding school systems used the NTE in screening teacher-applicants.[10] Twenty-one had established minimum cut-off points to be met before further consideration would be given prospective teachers. The second part of this study was designed to determine how well the NTE serves as an academic evaluative instrument for seniors at one teacher-training institution.

A group of 124 subjects were used for this part of the study. Correlation coefficients computed between common examination scores and five entrance examinations gave coefficients that ranged between 0.24 and 0.71. Each of the five coefficients was significant at the five per cent level of confidence. Correlation coefficients computed between common examination scores and grade-point averages were also significant. Other factors for which t-tests indicated significant differences on means of the common examinations were: (1) grade-level of preparation, (2) English and math majors, (3) age, and (4) college ability as measured by the CAT.

Lewis's investigation was undertaken at Sul Ross State College to examine the relationship of performance on the National Teacher Examinations to success in student teaching as judged by student teachers' college coordinators.[11] The analysis of the data revealed a correlation

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[10] Ibid., pp. 92-97.

[11] James N. Lewis, "Do High National Teacher Exam Scores Guarantee Top Professional Performance," The Texas Outlook, Vol. 52, No. 6 (June, 1968), pp. 20-21.

coefficient of .18, which indicates a slight positive relationship. However, the size of the coefficient fails to indicate a significant relationship.

A study on Scholastic Aptitude, the National Teacher Examinations, and Teaching Success was conducted by Walberg to test the hypotheses that: (1) grades in high school and college, as well as scores on nationally standardized tests of scholastic aptitude and professional knowledge (National Teacher Examinations, NTE), do not predict rated success in teaching but that (2) scholastic aptitude and achievement do predict scores on the NTE.[12] In a sample of 280 student teachers, evidence was found to support both of these hypotheses.

According to Flanagan, an analysis of the results from the first annual edition of the National Teacher Examinations indicates that candidates for teaching positions are not equally well qualified.[13] Furthermore, a fairly long and varied battery of examinations is necessary to describe the various candidates adequately. And finally, evidence is presented to illustrate the validity of the various parts of the examinations in measuring their respective aspects of teacher preparation.

Ryans, in a report of the 1940 National Teacher Examinations, pointed out that of those persons taking the examinations, those who had had extensive teaching experience did as well on the test as did

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[12]Herbert J. Walberg, "Scholastic Aptitude, The National Teacher Examinations, and Teaching Success," The Journal of Educational Research, Vol. 16, No. 3 (November, 1967), pp. 129-130.

[13]Flanagan, p. 50.

teaching novices, and in some cases slightly better.[14] This trend was also evidenced in regard to the 1941 examination candidates.

A second study of the results of internal consistency and external validation procedures applied in the analysis of test items measuring professional information conducted by Ryans indicated that:

(1) The achievement test of the 1949 National Teacher Examinations Battery appears to be made up of items that function satisfactorily from the standpoint of internal consistency.

(2) The same items do not yield as numerically high indices of discrimination when criteria other than total test scores (internal consistency method) are employed. In general, analysis of the items of this test, using the external criteria described, results in discriminating indices of lower magnitude than those obtained by the internal consistency method.

(3) In view of doubtful validity and reliability of the assessments upon which the external criteria were based, the low reliability of individual items, and the fact that understanding of educational concepts comprises only one segment of criteria is not striking or unexpected.[15]

In 1954, Benson took a random sample of 370 experienced teachers with bachelor's degrees who took the 1954 Common Examination.[16]

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[14]David G. Ryans, "The 1941 Administration of the National Teacher Examinations," School and Society, 54 (October, 1941), p. 364.

[15]David G. Ryans, "The Results of Internal Consistency and External Validation Procedures Applies in the Analysis of Test Items Measuring Professional Information," Educational and Psychological Measurement, Vol. 11, No. 4 (Winter, 1951), pp. 559-560.

[16]Arthur L. Benson, "The National Teacher Examinations in 1954," Journal of Teacher Education, Vol. 5 (September, 1954), p. 244.

Reliabilities on the five tests ranged from .86 to .90 with standard errors of measurement ranging from 3.6 to 4.3. The most reliable tests were Professional Information, English Expression, History, Literature, and Fine Arts. These tests included 105, 60, and 60 items, respectively. The two shortest tests, Science and Mathematics (45 items) and Non-Verbal Reasoning (30 items), had reliabilities of .87 and .86 and standard errors of measurement of 4.0 and 4.3.

Fenstermacher and Swineford, from the Educational Testing Service in Princeton, New Jersey, produced a scale of mean scores made by all nationwide candidates in 1958 beyond the junior year in college.[17] Among other things, the scale indicates that physical education majors earned a mean score lower than any other discipline included in this study.

The National Teacher Examinations Battery is adapted for use in connection with teacher education programs either at the undergraduate or graduate level of instruction. Some colleges administer the National Teacher Examinations to their graduating seniors. In other colleges, candidates for advanced degrees take the tests in connection with their graduate programs.

Ryans offers a detailed discussion on the use of the National Teacher Examinations in colleges and universities.[18]

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[17]Guy M. Fenstermacher and Frances Swineford, "The National Teacher Examinations and the Appraisal of Teacher Preparation," Journal of Teacher Education, Vol. 9 (December, 1958), pp. 429-430.

[18]David G. Ryans, "The Use of National Teacher Examinations in Colleges and Universities," Journal of Educational Research, 42 (May, 1949), pp. 681-685.

Certain uses of the National Teacher Examinations results, suggesting ways in which they may contribute to the effectiveness of the teacher training program, are noted here, these are: (1) in the counseling and guidance of students of education; (2) as comprehensive examinations for graduating seniors, or qualifying examinations for graduate students of education; (3) in institutional study directed at the evaluation of teacher education courses and curricula; and (4) in the placement of teachers.

Using the Teacher Examination profile as a point of departure, the student, with his adviser or dean, may consider such questions as the following:

(1) How adequate is my background or professional knowledge?

(2) Do my test scores indicate an awareness of the concepts, procedures, and problems of education as they relate to child development, guidance methods of teaching, etc.?

(3) Is my background adequate in the subject-matter field in which I expect to teach?

(4) To what extent should I consider the possibility of undertaking advanced study (graduate work) in professional education?

(5) So far as the test results are concerned, do I seem to be generally suited for teaching or should I consider seeking employment in another occupational field?

Since the tests cut across various professional areas, and since national norms for different levels of educational attainment are available, the results are well-suited for such use.

In reviewing the examination record of a student the faculty or administration of a college may consider such questions as:

(1) How does this student's examination record compare with those of other students in college?

(2) How do this student's attainments compare with the national norms for his educational level?

(3) Is his background in the various areas of professional education satisfactory?

(4) Is his background in general education satisfactory?

(5) To what extent should he be encouraged to undertake advanced study?

(6) In light of his test record what courses should this student be advised and encouraged to take?

Using the National Teacher Examinations results as a point of departure, a college or university faculty may ask itself such questions as the following:

(1) Do the opinions and experiences of the instructional staff confirm the examination results?

(2) Are the levels of student achievement in various professional and general cultural areas in keeping with the students' intellectual levels as revealed by the Reasoning and Verbal Comprehension tests? Do their achievement fall short of what might be expected of them?

(3) Might it be desirable for a committee of the faculty to study trends revealed or questions raised by the examination r results in light of the instructional program offered?

(4) Do the test results indicate a need for greater emphasis in

certain professional areas? In areas of general education?

(5) Do the examination results suggest study of the institution's instructional problems with a view toward curricular and/or extracurricular revisions or innovations?

(6) What specific steps might be taken to further assist the students in their general and professional development, e.g., remedial English courses, reading clinics, lectures and seminars on current problems, revision of course offerings in light of subject matter, and professional objectives?

Among the questions a college placement officer may consider in advising with respect to appointments are the following:

(1) What is the general level of attainment on the Teacher Examinations of this individual?

(2) Does his examination record indicate satisfactory attainment in the areas he will be expected to teach?

(3) Does this individual's examination record suggest that he might adapt himself better to certain kinds of school systems than to others?

(4) How satisfactorily will this individual fit the present intellectual and cultural pattern of a particular community in which he might be employed?

Crow added to the above discussion by proposing that the National Teacher Examinations appear to validate the quality of college training teachers have.[19] His conclusion was drawn on the basis of a study

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[19]E. R. Crow, "Teacher Examinations and South Carolina Certification Program," Educational Research, XXVII (October, 1947), p. 456.

conducted by J. Daniel in the State of South Carolina. Two hundred twelve teachers whom administrators, supervisors, teachers, and pupils considered successful took the NTE. The results indicated that successful teachers make respectable scores on the National Teacher Examinations.

Wood[20] and Crissy[21] indicated that there are wide variations in standards among teacher education programs in colleges and universities. A grade-point average of 4.00 from one institution may be equivalent to a grade-point average of 3.00 from another institution. College and public school officials responsible for the preparation and placement of teachers find that the National Teacher Examinations form a functional basis from which to interpret effectively variations in standards.

Kandel stated that behind classroom procedures there must be a reserve of something on which the teacher and public must draw.[22] Since the National Teacher Examinations are a measure of curriculum offerings and teacher education courses it seems unquestionable that these examinations are the appropriate reserve.

The Status of Physical Education

The status of physical education can be determined by a review of the literature related to a comparison of physical education majors with non-majors and the status of physical education programs.

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[20]Ben D. Wood, "National Teacher Examinations: A Reply to Dr. Anderson," Childhood Education, XVIII (January, 1942), p. 227.

[21]William J. E. Crissy, "The National Teacher Examinations," Phi Delta Kappa, XXIV (May, 1942), p. 353.

[22]Kandel, The Business Education World, XXII, No. 5 (January, 1942), p. 379.

Comparison of Physical Education Majors and Non-Majors

Physical education professional programs and their graduates are frequently misunderstood by segments of today's college population as well as by members of the lay public. Educators from other fields sometimes wonder aloud how graduates from professional programs in physical education compare in intelligence with students from other fields. Are the so-called inferior students in physical education allowed to complete their teacher training and become certified members of the teaching profession?

In general, recent research is not complimentary to physical educators. Investigation of the intelligence of physical education majors indicates that the professional programs in physical education are not getting as many mentally superior students as are other disciplines in education, the schools of liberal arts, medicine, science, law, and business administration. In other words, physical education majors appear to be hanging on the lowest rung of the ladder in the hierarchy of intelligence at the college level. But appearances may be misleading, as a study of the statistics indicates. The picture changes when facts are based, not on freshmen, but on the persons who graduate from physical education programs to become outstanding teachers of our nation.[23]

In an attempt to determine the status of physical education majors, Wheeler and Smith made a comparison of college majors in elementary,

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[23]Lester R. Wheeler and Edwin H. Smith, "Comparison of College Majors in Elementary, Secondary, and Physical Education," School Review, Vol. 63, No. 2 (February, 1955), pp. 91-95.

secondary, and physical education.[24] This study was based on the records of 238 persons graduated from the University of Miami during 1951 and 1952, two major approaches were considered: (1) scores made on the Graduate Record Examination by graduates from the School of Education of the University of Miami compared with the national standards from college graduates; (2) scholastic-aptitude scores made at the time of entrance to college on the American Council on Education Psychological Examination by graduates from the School of Education compared with the national college population. This study indicates the following tentative conclusions:

(1) The School of Education at the University of Miami is attracting personnel in the elementary- and secondary-education fields who are the intellectual equals of students in the general college population.

(2) There is no significant difference in intelligence between the graduates who major in elementary and those who major in secondary education.

(3) There is no significant difference in vocabulary or in total reading ability between elementary- and secondary-education majors.

(4) The physical education majors appear significantly below elementary- and secondary-education majors in linguistic and general reading ability.

(5) When the students in all fields of education are studied as a single group, the poor linguistic skills of the physical

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[24] Ibid., p. 91-95.

education majors tends to lower the general linguistic scholastic level of education students.

Duggan made a comparison of 200 undergraduate women physical education majors and 200 non-majors with respect to certain familiar relationships and five personal traits: interests, general information, intelligence, motor ability, and personality.[25] Findings revealed the following: (1) no significant differences were disclosed between the mean ages of majors and non-majors; (2) marked differences in interest between the two groups; (3) the non-majors, as a group, were found to be better informed than the majors on those sections of the test related to miscellaneous current activities, fine arts, literature, history, and civics, whereas the majors were better informed with respect to information sampled in the sections on science, education, and sports; (4) when the total groups of majors and non-majors were compared on the basis of results of the Otis Self-Administering Test of Mental Ability, Higher Education, Form D, both biserial r of $-.25 \pm .04$ and the significant difference of -4.06, between their mean scores denote intellectual superiority on the part of the non-majors; (5) on both the Brace Scale and the Jump and Reach Test, the physical education majors displayed superior motor ability as measured by these two instruments; (6) The Bernreuter Personality Inventory indicated that the majors as a group, were less neurotic than the non-majors, more extroverted, and more dominant.

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[25]Anne Schley Duggan, "A Comparative Study of Undergraduate Women Majors and Non-Majors in Physical Education With Respect to Certain Personal Traits," Research Quarterly, Vol. 8, No. 3 (October, 1937), pp. 38-45.

Ragsdale conducted a study to determine if physical education majors are a definite type standing out from the other students by reason of a difference in personal traits.[26] Among other things, the finding revealed that physical education men and women like social science and dislike mathematics, while women like modern foreign languages. They have a record of more failures in high school than letters and science students of equal intelligence, but have a better record in the elementary school and in the university.

Emotionally, they are better balanced than letters and science students and tend more toward extroversion--that is toward interest in things outside of themselves. They show more initiative and leadership than the letters and science students and have already developed a controlling interest in life which the letters and science student lack.

Weekley conducted a comparative study of undergraduate men majors and non-majors in physical education with respect to certain characteristics to show the similarities and differences between undergraduate men enrolled in the School of Physical Education and Athletics and those in the College of Arts and Science and the College of Engineering and Mechanic Arts at West Virginia University during the academic year, 1938-1939.[27] The factors measured in this study were: (1) socio-economic status, (2) reaction interests, (3) health status, and (4) scores on the Physical Achievement Test of The Department of

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[26]C. E. Ragsdale, "Personality Traits of College Majors in Physical Education," Research Quarterly, Vol. 3 (October, 1932), pp. 243-48.

[27]Harold J. Weekley, "A Comparative Study of Undergraduate Men Majors and Non-Majors in Physical Education With Respect to Certain Characteristics," Research Quarterly, Vol. 11, No. 1 (March, 1940), pp. 72-79.

Service Program for men. The results from this study indicated that the physical education major at West Virginia University usually comes from a lower socio-economic level home than other students; he has fewer home conveniences than other students, although he usually has a radio; he must work his way through college in part; he has more brothers and sisters; he has less than 50 books in the home; he desires both active and inactive recreation; he enjoys team games; reads Collier's Magazine; he is healthier and heavier than other students; and he excels in physical achievement.

Timmermans conducted a study designed to investigate possible differences between physical education majors and non-majors in certain personality traits, and between freshmen and sophomore majors in these traits.[28] The Guilford-Zimmerman Temperament Survey was administered to 23 freshmen physical education majors, 22 sophomore physical education majors, and 77 freshmen and sophomore non-majors. The comparison between physical education majors and non-majors showed that the majors scored significantly higher at the .01 level on only one trait, that of general activity. This study did not confirm the conclusions made in the related studies that women physical education majors tend to be more dominant, less neurotic, and more extroverted.

Turner conducted a study to determine what personality factors exist for students majoring in Health, Physical Education, and Recreation at the University of Alabama.[29] A series of comparisons of

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[28]Helen M. Timmermans, "A Comparison Between Physical Education Majors and Non-Majors in Certain Personality Traits," Research Quarterly, Vol. 39 (December, 1968), pp. 1088-93.

[29]M. M. Turner, Dissertation Abstracts, Vol. 29 A, PT. 6 (May-June, 1969), pp. 3861-A-3862-A.

scores on two personality inventories, Cattell's 16 PF and The Adjustment Inventory by Bell, were the procedures used to determine the personality factors. The scores of the senior majors at the University of Alabama were compared to those of the major students at Stanford University. In addition, the University of Alabama major group was subdivided and comparisons were made between the scores of special groups selected according to sex, college class level, career interest choice, and marital status.

Some of the general findings in this study were these:

A. Consistent significant differences in personality characteristics were found between the following paired groups:

(1) Women senior majors and women non-majors.--The women majors were more group-dependent, tough-minded, practical, emotionally stable, and higher in masculine interest.

(2) University of Alabama and Stanford University women majors.--Alabama women were more relaxed, practical, emotionally stable, group-dependent, and higher in masculine interest, and home adjustment.

(3) Men and women majors except senior men and women.--Men were more assertive, tough-minded, casual, and suspicious, higher in masculine interest, and health adjustment, and less friendly.

(4) Senior and freshman majors.--Seniors were less casual, apprehensive, affected by feelings, and happy-go-lucky.

(5) Majors with a coaching interest and majors with a teaching interest.--Coaching majors were more suspicious, tough-minded, reserved, and casual, less friendly,

conscientious, and intelligent, and were higher in masculine interest and health adjustment.

(6) Single and married majors.--Married majors were more sober, conscientious, socially precise, and emotionally secure, and were higher on home adjustment.

B. No consistent significant differences in personality characteristics were found between the following paired groups:

(1) senior men majors and men non-majors

(2) University of Alabama and Stanford University men majors

(3) freshman and sophomore majors

(4) freshman and junior majors

(5) sophomore and junior majors

(6) sophomore and senior majors

(7) junior and senior majors.

Bookwalter made a comparison of two groups of college men at Indiana University.[30] One group was composed of 67 students exempted from compulsory military training because of certain physical defects or deficiencies. The other group was composed of 248 majors or minors in the professional course in physical education, practically all of whom had participated in high school athletics.

Data in this study were obtained when the students enrolled as freshmen in the University. The tests were: (1) American Council Educational Psychological Examination, (2) Brace Motor Ability Test, and (3) Roger's Physical Capacity Test. The results indicated that

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[30]Karl W. Bookwalter, "Are High Schools Over-Emphasizing Athletics?", The Physical Educator, Vol. 1, No. 4 (April, 1941), pp. 179-181.

there was a real difference between the physical fitness of the two groups in favor of the physical education majors and minors as measured on Roger's test (P.F.I.). The results of Brace's test (motor ability) again showed a real difference between the two groups favoring the physical education majors. However, the results from the college aptitude test (American Council on Education Psychological Examination) were striking. The physical education group averaged 29.44 + .68 or 20.56 per cent lower than the campus average. Eighty-one per cent of the physical education group failed to achieve more than 50 percentile score. Bookwalter concluded from this study that those students who were exempted from military training by reasons of their physical defects are less physically fit. He further concluded that those students who were unfit for athletic participation, excel the athletic group in college aptitude to a large extent.

Ibrahim administered The Guilford-Martin inventory of factors GAMIN to 96 male and 40 female college students.[31] The students were intercollegiate athletes, physical education majors, and coeds who showed interest in dancing. The instrument used measures traits of dynamic and aggressive types differentiated among groups of athletes and physical education majors of both sexes, which included general activity, ascendency-submission, masculinity-feminity, inferiority feeling and nervousness. Statistical procedures, using the analysis of variance, indicated that differences in four of the five traits were significant (P = .01) in men. Among women, the differences in four of

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[31]Hilmi Ibrahim, "Comparison of Temperament Traits Among Intercollegiate Athletes and Physical Education Majors," Research Quarterly, Vol. 38, No. 4 (1967), pp. 615-622.

the five traits were significant at the .01 level and at the .05 level in the fifth trait. When the scores were compared to the most favorable scores for the selection of supervisory and administrative personnel, as suggested by the inventory's manual, football players scored favorably in three of the five traits, and the rest of the athletes and majors scored favorably in one or two traits only.

Kenyon from the University of Wisconsin conducted a study to determine cultural characteristics unique to prospective teachers of physical education.[32] The subjects for this study were students enrolled in a large midwestern university during the spring of 1962, representing teacher trainees, a subgroup of teacher trainees (physical education students), and liberal arts students. All were administered inventories selected or constructed to assess a variety of non-intellectual, non-physical characteristics. The data (N = 140) were treated using standard two-way analyses of variance. On the basis of the findings, it was concluded that: (1) prospective male physical education teachers, in contrast to other prospective teachers, have a more weakly formulated, somewhat traditionalistic philosophy of education, have a slightly lower social class background, are more dogmatic and rigid in their thinking, and tend to possess different social values; (2) prospective male physical education teachers, in contrast to prospective female physical education teachers, have a less consistent, more traditionalistic philosophy of education, have a lower class background, are more dogmatic and authoritarian in their thinking,

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[32]Gerald S. Kenyon, "Certain Psychosocial and Cultural Characteristics Unique to Prospective Teachers of Physical Education," Research Quarterly, Vol. 36, No. 1 (1965), pp. 105-12.

and possess somewhat different social values; (3) with respect to those characteristics studied, a generalized "anticipatory socialization" hypothesis is untenable when applied to those preparing to enter the teaching profession; that is, there is considerable heterogeneity among the traits of prospective teachers. Male physical education students as a professional subgroup do not show many of the characteristics of other prospective teachers. In fact, in many respects the male physical education student is more like the student not preparing to teach.

Thorpe conducted a study to determine whether or not there was an existing pattern of similarity of personality variables among successful women undergraduate students, graduate students, and teachers in physical education, and to compare the total physical education group with a normative group.[33] The results from this study indicated the following:

(1) Subjects in physical education were more open to suggestions, eager to learn from the example set by others, and willing to follow the leadership of others than the normative group.

(2) The subjects in physical education were also significantly higher on dominance, which indicates they are eager to be leaders, to make group decisions and to direct the action of others.

(3) There were no significant differences between physical education groups.

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[33] Jo Anne Thorpe, "Study of Personality Variables Among Successful Women Students and Teachers of Physical Education," Research Quarterly, Vol. 29, No. 1 (March, 1958), pp. 83-92.

Palmer conducted a study to diagnose certain personal qualities of women teachers of physical education.[34] The study consisted of two groups of physical education teachers. One group was considered to be very successful physical education teachers and one group a less successful group of physical education teachers. The Bernreuter Personality Inventory was used as a measure of neurotic tendency. The scores made by the most successful group tend to approach opposite ends of the scale. The scores made by the most successful teachers indicate that they possess greater emotional stability than the less successful teachers. When compared with the scores made by an average group of women, the less successful teachers show only slightly more tendencies toward a neurotic condition than does the average group.

Collins conducted an investigation of the vocational interests of women physical education teachers.[35] The Strong Vocational Interest Inventory (Form WA; Adult Women) was the tool employed in the study. The interests of a criterion group composed of 76 women were compared to a "women-in-general" group. This group was composed of 4,383 subjects; 1,256 were married women. The remainder represented 3,127 women engaged in 15 different occupations, such as artists, lawyers, dentists, and authors. Among other things the results of this study indicated the following:

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[34]Irene Palmer, "Personal Qualities of Women Teachers of Physical Education," Research Quarterly, Vol. 4 (December, 1933), pp. 31-47.

[35]Patricia J. Collins, "The Development of a Scoring Key on the Strong Vocational Interest Inventory For Women Teachers of Physical Education," Research Quarterly, Vol. 13, No. 2 (May, 1942), pp. 156-165.

(1) The physical education group is most similar to the "non-professional" group in interest type.

(2) The physical education group is least like the "Verbal or Linguistic" group with regard to interest pattern.

(3) The data concerned with "masculinity-feminity" of interest of the physical education group is not conclusive.

(4) On the basis of the present study, it would be incorrect to state that the physical education group possesses interests of a more "masculine" nature.

Workman made a comparison in performance in selected motor skills between elementary school children taught by the specialist in physical education and those taught by the classroom teacher.[36] Five tests of motor skills related to running, jumping, and ball handling were administered to approximately 200 grade six boys and girls from eight different schools who were taught physical education by the specialist, and to 200 grade six boys and girls from nine additional schools who were taught physical education by the classroom teacher.

Mean scores for each test were compared separately for boys and girls using the t-test of significance for two independent samples. Significant differences in favor of the group taught by the specialist were found on all five tests for girls and in three of the five tests for boys.

Locke conducted a study to inquire into the validity of certain aspects of the public image of the physical educator through the use of

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[36]Donna Jo Workman, "Comparison of Performance of Children Taught by the Physical Education Specialist and by the Classroom Teacher," Research Quarterly, Vol. 39, No. 2 (May, 1968), pp. 389-394.

selected psychological test instruments, and to assess these factors in a group of administration oriented physical educators.[37] The performances of the physical educators differed significantly from those of a group of classroom teachers on each of three psychological measures. The direction of some of the differences provides support for the public image of the physical educator.

The Status of Physical Education Programs

Physical education has had a struggle, in the past, to prove its worth to the educational family. Working itself up from physical culture and physical training, it has developed into physical education, with a rounded program and a great contribution to make to education and society. In the past its stress was on corrective and remedial work, while the present emphasis is definitely on the normal, constructive side, the whole program glowing with promise for the education of the great mass of healthy, active children and adults of today. Physical educators know that a fine, well-thought-out program of physical education educates through the physical sphere and sets the stage for education for a democracy.

Nixon and Cozen define physical education as

> ... that phase of the whole process of education which is concerned with vigorous muscular activities and related responses, and with the modifications of the individual resultant from these responses.[38]

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[37]Lawrence F. Locke, "Performance of Administration Oriented Male Physical Educators on Selected Psychological Tests," Research Quarterly, Vol. 33, No. 3 (October, 1962), pp. 418-429.

[38]Eugene W. Nixon and Frederick W. Cozens, An Introduction to Physical Education (Philadelphia, 1941), p. 8.

According to Cassidy, school physical education is the process of orienting the individual in the persistent problems of living through guided experiences centering in motor activity.[39]

The primary aim of physical education is:

> To make the maximum contribution to the optimum development of the individual's potentialities in all phases of life, by placing him in an environment as favorable as possible to the promotion of such muscular and related responses or activities as will best contribute to this purpose.[40]

James stated that physical education is as important as any other subject:

> When is the physical education profession going to work up to truth that its complete and unassailable justification lies in the fact that most of its activities are means towards highly desirable ends? This is not its only justification, of course, for a child learns to swim in order to be able to swim, a gifted few may become professional games players or athletes, while all children are supposed to develop some degree of fitness through their physical activities.[41]

Physical education is able to offer a diversity of learning situations through well-organized programs and able staff members.

According to Miller, because physical education utilizes the knowledge and skills related to many other fields, it is an unusually advantageous position for furthering subject matter integration.[42]

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[39]Rosalind Cassidy, New Direction in Physical Education for the Adolescent Girl (New York, 1938), pp. 59-60.

[40]E. W. Nixon and F. W. Cozens, p. 75.

[41]J. M. James, "P. E. As Important As Any Other Subject," Time Educational Supplement (Oct. 31, 1969), p. 52.

[42]Arthur G. Miller, "Correlating English and Physical Education," Journal of Education, Vol. 148, No. 2 (December, 1965), pp. 68-71.

Informal discussions among various specialists are helpful in arousing interest in a coordinated approach to common objectives. The results thus achieved can ignite fires of interest in other departments which, in turn, can continue to spread until the institution becomes a more unified drive toward the pupil's social, emotional, physical, and intellectual development.

Bucher added that physical education is a very important part of the educational process.[43] It is not a "frill" or an "ornament" that has been tacked on to the school program as a means of keeping children busy. It is instead, a vital part of education.

According to Hedge, Douglass stated that physical education seems generally agreed on the organismic theory of the whole child and are basing their programs on the theory.[44] They have, in general, kept abreast of the development of education. But the lack of references to physical education in numerous educational books and publications and the few, vague, and uncomprehending references to it in others seems to indicate that educators have not shown a corresponding interest in physical education.

Mumford conducted a study (1) to evaluate the physical education programs and the general health, recreation, and safety provisions of Negro colleges in terms of accepted standards; (2) to compare private and public Negro institutions; (3) to determine the

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[43]Charles A. Bucher, Foundations of Physical Education (Saint Louis, 1968), p. 17.

[44]Blythe Hedge, "Physical Education as an Integral Part of the Program of Education," School and Society, Vol. 55, No. 1435 (June 27, 1942), pp. 724-28.

relationships between expenditures, personnel, facilities, and program efficiency.[45]

Thirty-one institutions were evaluated by use of the LaPorte Health and Physical Education Score Card No. II which was slightly modified so as to be adaptable for college use.

Analysis of the data in all aspects of the program point to four basic problems influencing the low standards of physical education in Negro colleges:

(1) Limited funds, both budget and capital outlay.

(2) Inadequate facilities (related to first item).

(3) Inadequate number and training of most of the instructors.

(4) Attitude of the college administration toward the program of health and physical education.

Townes conducted a study of 26 Negro colleges to determine the status of professional education in physical education in these schools.[46] He found that these institutions were not well-equipped with an adequate and well-trained staff. The facilities were not adequate for training prospective teachers majoring in professional work in physical education.

Ellis conducted a study to determine the history and present practices of health and physical education for women in Negro colleges

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[45]Arnett W. Mumford, "The Present Status of Health and Physical Education Programs in Negro Senior Colleges," Research Quarterly, Vol. 19, No. 3 (October, 1948), pp. 190-97.

[46]Ross E. Townes, "Professional Education in Physical Education in Selected Negro Colleges," Journal of Negro Education, Vol. 20, No. 2 (Spring, 1951), pp. 174-80.

and universities.[47] The data were obtained by questionnaire method. A questionnaire was sent to the presidents of 67 institutions. Other sources of materials were catalogues, bulletins, and supplementary printed matter issued by these institutions. The findings in the study seem to justify the following general conclusions: (1) that the status of health and physical education in Negro colleges and universities is, in general, comparatively low; (2) most of the institutions under consideration have some type of recreation program for women, but only a few colleges have initiated a definitely well-planned program of health and physical education for women; (3) the two-year physical education required course offered in most colleges for graduation is generally a routine couse, which is not designed to meet the physical needs of indidual students.

Hart studied the status and trends of physical education programs in Negro junior colleges.[48] The study represented an attempt to measure the programs, to obtain an appreciation of the status and trends of the physical education programs in Negro junior colleges in the United States, and to discover those aspects of physical education where weakness or strength is evident in program facilities and leadership.

The findings in the study seem to justify the following general conclusions:

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[47]A. W. Ellis, "The Status of Health and Physical Education for Women in Negro Colleges and Universities," Research Quarterly, Vol. X, No. 1 (March, 1939), pp. 135-41.

[48]Thomas A. Hart, "The Status and Trends of Physical Education Programs in Negro Junior Colleges," Junior College Journal, Vol. 22, No. 7 (March, 1952), pp. 393-95.

(1) The state of health and physical education in Negro junior colleges has improved during the past 15 years.

(2) The veteran enrollment has not caused any serious changes in their programs; therefore, no drastic changes would be expected in most instances.

(3) The faculty in most cases is qualified to teach physical education.

(4) Only 43.7 per cent of the junior colleges have adequate physical education programs for the following reasons:

a. inadequate physical education building and athletic field,

b. failure to use available tests for physical education,

c. lack of proper staff,

d. lack of equipment,

e. lack of administrative cooperation.

(5) Ninety-three per cent of the departments other than physical education are appreciative of physical education.

(6) There has been very little attention given to swimming except in the case of two junior colleges.

Wallet conducted a survey to determine the status of physical education for women in the junior colleges of California for the academic year, 1946-1947.[49] The physical education department heads of 56 junior colleges, both public and private, were sent questionnaires.

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[49]Mildred D. Wallet, "Present Status of Women's Physical Education in California Junior Colleges," Research Quarterly, Vol. 19, No. 3 (October, 1948), pp. 185-89.

Forty-four replied, thus furnishing information on 79 per cent of all California junior colleges. Among other things, the findings indicated that the size of classes and teaching loads throughout the state are both commensurate with optimum junior college standards. Facilities such as showers, dressing rooms, rest rooms, and classrooms are adequately provided in the majority of junior colleges. However, swimming pools are needed in three-fourths of all junior colleges, and many of the existing pools should be brought up to adequate standards in filtration and heating systems.

According to Maurer, the present program in physical education for girls is antiquated as the washboard.[50] Based on the premise (important before 1920, when the women's suffrage amendment was finally passed) that women are "just as good as men," girl's physical fitness activities tend to be ambitious imitations of the program for boys.

> We've modernized mathematics, energized English, and bolstered biology; but it's fetish phys ed (for girls). While some progress has been made since the middy blouse and bloomer days, the author feels significant conceptual changes have not taken place.[51]

A survey of 246 institutions undertaken by Shaw to secure data on the present status of physical education in the colleges and universities of this Country produced the following findings:

(1) Approximately 60 per cent of the schools had either a four- or eight-term requirement.

(2) Sixty-nine per cent of the schools grant full academic credit for each semester of required physical education,

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[50]Adah Mauer, "Model T in the Space Age," The Clearing House (December, 1965), pp. 210-12.

[51]Ibid., p. 212.

five per cent give some credit, 24 per cent give no credit.

(3) Fifty per cent of the schools count physical education grades when computing honors by semester.

(4) Forty-nine per cent of the schools count physical education grades when figuring honors at graduation.

(5) Private schools are much more conservative in granting credit and counting physical education grades toward honors both by semesters and at graduation than are state-controlled schools. This is probably due to state schools being more directly responsible to their constituencies. The same conclusion applies to men's and women's schools as compared to coeducational institutions.

(6) Certain schools are inconsistent in their policies in regard to giving credit and honors for physical education.

(7) There are no major differences between the groups of schools studied in regard to their practice of granting excuses from physical education.[52]

Phillips conducted a study to evaluate the service programs of physical education for men in the colleges of New York State.[53] Dual standards (optimal and essential) were developed to serve as bases for evaluating the component parts of the over-all program. A representative sampling of 14 institutions was obtained and these institutions

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[52]John H. Shaw, "The Status of Required Physical Education in Colleges and Universities of the United States," Research Quarterly, Vol. 17, No. 1 (March, 1946), pp. 2-9.

[53]Byron M. Phillips, "Evaluation of Men's Physical Education Service Programs in Higher Education," Research Quarterly, Vol. 26, No. 2 (May, 1955), pp. 185-196.

were studied extensively. It was found that the percentages of institutions of higher education in New York State requiring physical education for graduation, and giving credit for such courses, was much lower than has been found to exist in similar institutions throughout the United States.

From a study of questionnaires from 168 colleges and universities, Greene made the following conclusions:

(1) Physical education is required for graduation in nearly all (96 per cent) of the schools who replied. Classes meet generally three times weekly followed in frequency by two, five, and four times weekly. Nearly one-half the group have a two-year requirement and one-third a four-year requirement. Physical education classwork may be elected for credit in three-fourths of the schools.

(2) Credit is given for physical education in over three-fourths of the schools, the most frequent type being one unit per semester, term, or quarter. In the majority of cases the credit is the same as that given for academic work.

(3) Changes in the requirement have been made by 58 per cent of the schools since the war, the most frequent type of change being in the time requirement. The majority of these changes are in men's departments.

(4) Few schools have returned as yet to a prewar program and only 15 per cent indicate a decisive intention to return. The rest are undecided or do not intent to change back.[54]

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[54]Margaret Duncan Greene, "Survey of Requirement and Credit in Physical Education in Colleges and Universities as of Full Term, 1944," Research Quarterly, Vol. 16, No. 2 (May, 1945), pp. 120-27.

During the spring of 1968, Oxendine conducted a study designed to determine the status of physical education requirements and program practices in four-year colleges and universities in the United States.[55] Among other things, the study revealed that large institutions consider physical education as a regular academic course more readily than smaller schools. This tendency was reflected in the awarding of credit, consistency of grades with other courses, counting of grades in point-hour ratios, and the administration of written final examinations.

Cordts and Shaw conducted a study to determine the status of the required physical education program for men and women in the four-year colleges and universities of the United States as of June, 1958.[56] Tabulated data represented replies from 168 department chairmen. The findings show that 93 per cent of the department chairmen indicated that the physical education department philosophy is in harmony with the over-all educational philosophy of the college or university as stated in the appropriate publications of the institution. Eighty-six per cent indicated that the departmental objectives were compatible with the over-all educational philosophy of the department and the institution.

Pelton conducted a study to determine a current set of concepts which physical educators believe should characterize the purposes of the

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[55]Joseph B. Oxendine, "Status of Required Physical Education Programs in Colleges and Universities," Journal of Health, Physical Education, Recreation, Vol. 40 (January, 1969), pp. 32-35.

[56]Harold John Cordts and John H. Shaw, "Status of the Physical Education Required or Instructional Program in Four-Year Colleges and Universities," Research Quarterly, Vol. 31 (October, 1960), pp. 409-19.

modern college program of general physical education.[57] The Kolmogorov-Smirnov Test was employed to compare responses among three groups of respondents: a group of physical educators who were selected on the basis of their specific qualifications with regard to the general college program (Group I), a jury of physical educators who were considered experts in the over-all field of physical education (Group II), and a group composed of deans of institutions (Group III). This test was designed to determine whether there were statistically significant differences of opinion among responses of the three groups. It was found that physical educators and academic deans of instruction were in close agreement in most instances with regard to beliefs concerning the general college program of physical education.

Webster made a sample survey of 20 outstanding Eastern and Midwestern colleges and universities to determine how much time can be allowed for physical education, relative to length and number of class periods, and how much credit should be given toward graduation and still keep this subject commensurate with the total value of the remainder of the curriculum.[58] The results indicated that the number of class periods devoted to physical education and hours required for graduation are greater now than before the war. Relative to the number of hours allowed for graduation, the tendency seems to be toward four to eight hours.

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[57]Barry Clifton Pelton, "A Critical Analysis of Current Practices and Beliefs Underlying General Physical Education Programs in Higher Education," Research Quarterly, Vol. 38, No. 4 (December, 1967), pp. 678-85.

[58]Major Randolph W. Webster, "A Survey of Physical Education Requirement for Graduation," Journal of Health and Physical Education, Vol. 16, No. 14 (April, 1945), pp. 174 and 214-18.

Schnell conducted a survey to determine the status of elementary physical education preparation in 52 colleges in the United States which offer doctoral degrees in physical education.[59] Six other colleges were included because of their special interest in the elementary school physical education program. The results indicated that the following areas of concern should be added to the programs of preparation for those working in the field of elementary education: (1) growth and development, (2) program planning, (3) special events, and (4) facilities and equipment in the elementary school.

Hewitt concluded from a study of the status of the graduate faculty in physical education that the majority of higher institutions with departments of physical education, of which there are 56 offering the graduate major for the master's degree and 20 for the doctorate, do not generally specify any prerequisites for the faculty engaged in teaching courses at the graduate level.[60] Of the 42 schools reporting for this study, only seven required their graduate faculty to have the academic rank of assistant professor or above; and eight demanded at least a master's degree. A similar number of schools held that the doctor's degree was essential, and seven set research ability as a prerequisite. Twenty-two did not specify any rank requirements and a like number no degree requirements; 25 stipulated no particular type of experience necessary; and 24 no professional-leadership requirement. Research ability was not considered necessary by 23 schools.

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[59] James W. Schnell, "Survey Report of Elementary Physical Education Preparation Programs," Journal of Health, Physical Education, Recreation, Vol. 38, No. 9 (Nov.-Dec., 1967), pp. 61-62.

[60] Jack E. Hewitt, "Status of the Graduate Faculty in Physical Education," Research Quarterly, Vol. 16, No. 3 (October, 1945), pp. 231-40.

Conant, assisted by a staff of nine people, visited 77 institutions in 22 states and talked with hundreds of professional teachers, students, and leading educators in state education departments and professional organizations.[61] In reporting his findings, his references to physical education at the undergraduate level are included with art and music, since he recognizes that special skills are required to teach these subjects. Dr. Conant is strongly opposed to combining physical education with any other subject field, except possibly health education. He recommends that coaching and physical education be combined as two important functions. Because many physical education teachers and coaches become school administrators, he concludes that "they should have an even wider general academic education than other teachers." In a four-year program, he recommends more than 60 hours of general education with another nine to twelve hours in the social sciences, the humanities, or in science with graduate programs in the biological and physiological sciences that would prepare a physical education person for a research career in the field of exercise or related areas.

According to Kookshkin, in comparison with the U.S.A., the U.S.S.R. has a much higher level of physical preparation of children of school age.[62] In the U.S.S.R., the end result is the young learner achieves a continuous growth of material well-being, greater opportunities in physical education along with mass development of physical culture and

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[61] James B. Conant, "News Across The Nation," Journal of Health, Physical Education, Vol. 34, No. 8 (October, 1963), p. 75.

[62] G. I. Kookshkin, "How Others See Us," Journal of Health, Physical Education, Recreation, Vol. 28, No. 1 (January, 1967), pp. 28 and 68.

sport in the country. The state system and sporting and professional organizations allow for great opportunities for physical education of children and development of sport among the youth. There are, at no cost, qualified departments of specialists, sports buildings, and tremendous stocks of athletic equipment.

A Comparison of Mental Test Performance of Negroes and Whites

Two major difficulties arise when Negroes and whites are compared in mental test performance in the United States. First, the American Negro is generally below the white in social and economic status and his work opportunities are more limited. Many of these inequalities have been exaggerated. But inequities in the environment render it difficult to make fair comparisons between many Negro and white groups, though fair comparisons can be--and have been--made by a careful equating of background variables. A second difficulty stems from the fact that many American Negroes have white ancestry. Racial mixture, however, should cause Negro-white differences in the United States, if found, to be even more significant.[63]

Jensen argues that the failure of recent compensatory education efforts to produce lasting effects on children's IQ and achievement suggests that the premises on which these efforts have been based should be re-examined.[64] He began by questioning a central notion upon which

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[63]A. M. Shuey, The Testing of Negro Intelligence, 2nd ed. (New York, 1966), p. vii, (forward).

[64]Arthur R. Jensen, "How Much Can We Boost IQ and Scholastic Achievement?", Harvard Educational Review, Vol. 39, No. 1 (Winter, 1969), p. 1.

these and other educational programs have recently been based:

> That IQ differences are almost entirely a result of environmental differences and the cultural bias of IQ tests, Jensen carefully defines the concept of IQ, pointing out that it appears as a common factor in all tests that have been devised thus far to tap higher mental process.

Jensen added that individual differences in a trait like intelligence can be accounted for by genetic factors. He analyzes several lines of evidence which suggest that genetic factors are much more important than environmental factors in producing IQ differences.

Kagan is critical of the logic of Jensen's and presents evidence that any IQ data collected may not reflect the actual potential of lower class children.[65] He cites new studies which suggest that part of the perceived intellectual inadequacy of lower class children may derive from a style of mother-child interaction that gives the lower class child less intense exposure to maternal intervention. Kagan also argues that present compensatory education programs have been neither adequately developed nor evaluated.

Kagan is supported by Hunt in the criticism of Jensen's conclusions:

> While professor Hunt finds much of interest in parts of Jensen's article, he objects strongly to some of its conclusions. Hunt fails to find satisfactory evidence that we may make the assertions about genetic differences determining the intelligence of Negroes and whites which Jensen has offered. He finds Jensen's claims about the high heritability of intelligence unsubstantiated: he finds Jensen's conclusion that observed group mean differences in IQ scores among Negro and white populations are genetically determined to be even less supportable. Hunt offers an alternative hypothesis; - He offers analogies from animal research which suggest that the

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[65] Jerome S. Kagan, "Inadequate Evidence and Illogical Conclusions," Harvard Educational Review, Vol. 39, No. 2 (Spring, 1969), pp. 274-77.

> physical development of the brain is directly influenced by its information-processing activities--these activities are particularly effective in neo-natal organisms.[66]

Humphreys and Dachler, also critical of Jensen's results, offer the following:

> Data from Project TALENT have been analyzed as a check on the generalizability of Jensen's results to a ninth-grade group of boys. Criterion groups were formed in accordance with Jensen's designs. In contrast to his findings, both IQ and socioeconomic status (SES) are positively correlated with rate-memory scores, and there is little interaction. Also, correlations between rate memory measures and other intellectual variables show very little variability around very modest levels of correlations in the four criterion groups. Jensen has typically used correlated individual difference variables in pseudo-orthogonal design. This design error, in conjunction with a reasonable assumption concerning the sampling in his high SES--low IQ criterion group, is sufficient to account for the relationship he has reported.[67]

As a follow-up to the criticism of Jensen's "theory of intelligence" by Humphreys and Dachler, Jensen offers the following in an attempt to defend his theory:

> The criticism of Jensen's "theory of intelligence" by Humphreys and Dachler lacks cogency between it (a) takes account of only a limited portion of the supporting evidence and (b) supposedly test the theory by using data from Project TALENT based on mental tests which are far from ideal for this purpose.[68]

In an earlier article in Educational Research Jensen stated that intelligence is inherited in much the same fashion as height and is the

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[66] J. McV. Hunt, "Has Compensatory Education Failed?: Has it Been Attempted?," Harvard Educational Review, Vol. 39, No. 2 (Spring, 1969), pp. 278-300.

[67] Lloyd G. Humphreys and Hans Peter Dachler, "Jensen's Theory of Intelligence," Journal of Educational Psychology, Vol. 60, No. 6 (December, 1969), pp. 419-26.

[68] Arthur R. Jensen, "Jensen's Theory of Intelligence," Journal of Educational Psychology, Vol. 60, No. 6 (December, 1969), pp. 427-431.

result of a large number of genes each having a small additive effect.[69] A statement in which he was supported by Burt,[70, 71, 72] and Burt and Howard.[73]

Shockley described one frightening statistical result as follows:

> "My statistical studies suggest a five I.Q.-points loss of ground for Negroes compared to whites between World War I and now. A five point downward shift in median I.Q. in a population could be devastating in genetic origin; it could cause a fourfold reduction in a supply-to-demand ratio for intelligent leadership." He pointed out that a genetic cause for a five-point average I.Q. drop in 50 years for the American Negro can not be rejected on the basis of studies on white population because Negro family size patterns are very different.[74]

In 1968, Burnes reviewed the literature in this area and concluded that

> Arguments and evidence for racial differences in intellectual functioning range from adamant statements that the Negro is genetically and irreversibly inferior in this respect to contentions that any such differences, if found, cannot be interpreted apart from other considerations.[75]

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[69]Arthur R. Jensen, "The Culturally Disadvantaged: Psychological and Educational Aspects," Educational Research, Vol. 10, No. 1 (November, 1967), pp. 4-20.

[70]Cyril Burt, "The Evidence for the Concept of Intelligence," British Journal of Educational Psychology, Vol. 25 (1965), pp. 158-77.

[71]Cyril Burt, "The Inheritance of Mental Ability," American Psychology, Vol. 13 (1958), pp. 1-15.

[72]Cyril Burt, "The Genetic Determination of Difference in Intelligence: A Study of Monozygotic Twins Reared Together and Apart," British Journal of Psychology, Vol. 57 (1966), pp. 137-53.

[73]Cyril Burt and Margaret Howard, "The Mullifactorial Theory of Inheritance and Its Application to Intelligence," British Journal of Statistical Psychology, Vol. 9 (1956), pp. 95-131.

[74]William Shockley, "Negro I.Q. and Heredity," School and Society, Vol. 96 (March 2, 1968), pp. 127-28.

[75]Donna Kay Standley Burnes, "A Study of Relationships Between Measured Intelligence and Non-Intellective Factors for Children of Two

Her conclusions emerged from a careful study of the whole gamut of presentations on the subject beginning with Garrett who presented several studies which consistently show in their results that Negroes on the average score lower than whites and contending that no factors other than heredity can adequately explain these differences.[76]

Supporting Garrett is McGurk who has published reviews of investigations supporting his contention.[77] In 1958, Shuey authored the major work of this viewpoint which comprises approximately 380 original investigations of Negro intelligence, included in 48 published monographs, books or sections of books, 203 published articles, 90 unpublished master's theses, 35 unpublished doctor's dissertations, and four other unpublished monographs; as well as 62 reviews, interpretations, or research pertaining to the topic, and 122 books, articles, and monographs dealing with material related to the tests used, their interpretation and standardization.

Supporting Shuey is Putnam who authored Race and Reason in defense of the position.[79] Both Shuey and Putnam concluded that Negro intelligence is innately inferior.

Socioeconomic Groups and Races." (Unpubl. doctor's dissertation, Washington University, 1968), p. 3.

[76]Henry Garrett, "Negro-White Differences in Mental Ability in the United States," Sci. Mon., 65 (1947), pp. 329-33.

[77]Frank C. McGurk, "Psychological Tests: A Scientist's Report on Race Differences," U. S. News and World Report (September 21, 1956), pp. 92-96.

[78]Shuey, p. 3.

[79]Carleton Putnam, Race and Reason (Washington, D. C., 1961).

Opposing this point of view is Kagan joined by Klineberg. Klineberg supports the position of many social scientists on race, insisting that if opportunities offered to races were similar, the average achievement of each race would be about the same.[80] Long,[81] McCord and Demerath[82] are critical of McGurk's reports especially pointing to lack of control of important variables such as caste differences and socioeconomic factors.

The importance of these variables was reemphasized when Deutsch and Brown's results indicated that Negro children score lower than white at each social class level.[83] They concluded that the poor showing of Negro children was do to the unequal status of Negroes and whites.

Using the Draw-A-Man Test on Negro children between the ages of three and eleven, Wilson found that intelligence decreases with age and he attributed this to the subject's environments.[84] Also supporting the hypothesis that Negroes score lower than whites on intelligence

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[80]Otto Klineberg, "On Race and Intelligence: A Joint Statement," Am. J. Orthopsych., 27 (1957), pp. 420-22.

[81]Howard Hale Long, "The Relative Learning Capacities of Negroes and Whites," J. Negro Educ., 26 (1957), pp. 121-34.

[82]William M. McCord and N. J. Demerath, "Negro Versus White Intelligence: A Continuing Controversy," Harv. Educ. Rev., 28 (1958), pp. 120-35.

[83]Martin Deutsch and Bert Brown, "Social Influences in Negro-White Intelligence Differences," J. Soc. Issues, 20 (1964), pp. 24-35.

[84]John L. Wilson, "Changes in Brightness of Children, Ages Three to Eleven, Living in a Low Socioeconomic Environment," Dissert. Abstr., 17 (1957), pp. 2211-12.

test because of environment is Bloom. Bloom stated that deprived surroundings do not offer a "general knowledge about the world," opportunities to practice logical reasoning and problem solving, nor sufficient social interaction. Supporting environment as a factor, but from a different view, Pettigrew indicated that there is a greater likelihood of an inadequate prenatal diet and higher incidence of premature births and brain injury among Negroes.[86]

Additional support for the hypothesis that environment accounts for poor performance of Negroes on intelligence tests is the work of Boger. Boger succeeded in raising the test scores of Negro children with training in spatial perception.[87] Stronger support came from Tumin's three conditions which he feels must be met before claims of Negro-white intellectual differences can be substantiated:

(1) The genetic homogeneity of Negroes must be demonstrated.

(2) The social and cultural backgrounds of the two groups must be equal.

(3) Reliable and valid tests of native intelligence must be used.[88]

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[85]Benjamin S. Bloom, Stability and Change in Human Characteristics (New York, 1964).

[86]Thomas F. Pettigrew, "Negro American Intelligence: A New Look at an Old Controversy," Journal of Negro Education, 33 (1964), pp. 6-25.

[87]J. H. Boger, "An Experimental Study of the Effects of Perceptual Training on Group IQ Test Scores of Elementary Pupils in Rural Ungraded Schools," Journal of Educational Research, 46 (1952), pp. 43-52.

[88]Melvin M. Tumin (ed.), Race and Intelligence: A Scientific Evaluation (New York, 1963).

John found from a study of Negro children from three socioeconomic groups that the children of higher status tend to use more abstract or integrative language and have more developed vocabularies which is definitely an asset when taking intelligence tests.[89]

Jahoda, supporting Wilson's conclusion that intelligence among most Negro children decreases with age, concluded that working class boys who remain within a working class environment tend to lose further ground in vocabulary as they grow older.[90] According to Burnes, Havinghurst stated that environment largely determines intelligence and since higher socioeconomic status homes provide more mental stimulation than lower-class homes, upper-class children perform better on intelligence tests.[91]

Davidson studied the performance of a hospitalized population that consisted of Negro and white patients using the Wechsler-Bellevue Scale.[92] He found that the Negro patients were slower on tasks requiring perceptual motor skills; and he concluded that Negroes have a lack of incentive to do things quickly and that the Negro typically has a more "passive adjustment" rather than concentrating "actively" on problems and, therefore, scores higher on Digit Span and lower on the

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[89]Vera P. John, "The Intellectual Development of Slum Children: Some Preliminary Findings," American Journal of Orthopsychology, 33 (1963), pp. 813-22.

[90]Gustav Jahoda, "Social Class Differentials in Vocabulary Expression," British Journal of Educational Psychology, 34 (1964), pp. 321-23.

[91]Burnes, p. 11.

[92]Kenneth S. Davidson, "A Preliminary Study of Negro-White Differences on Form I of the Wechsler-Bellevue Scale," J. Consult. Psychol., 14 (1960), pp. 489-92.

Arithmetic subtest than do white subjects. However, Young and Bright's study of lower-class, rural Negro children did not support Davidson's finding.[93] Young and Bright found that Negroes score higher on the Arithmetic, Similarities, Information, and Coding subtests. Young and Bright's findings are supported by Woods and Toal who studied the results of Negro and white adolescents on the Revised Beta Test.[94] They found that the Negro subjects did better on the tests which require perceptual speed and accuracy than they did on other tests.

According to Harris and Lovinger there is a widespread belief that the IQ's of disadvantaged Negro children tend to decrease as they get older.[95] Osborne reported that there is a slowing down of both mental growth and achievement in Negro children. Shuey, in a review of the literature, concluded that:

(1) The negro is more handicapped by his poor environment as he grows older.

(2) There is a real and normal decline in IQ which is to be expected of children of dull-normal or borderline intelligence.

(3) The Negro is deficient in vocabulary, which plays an increasing role in various tests.

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[93]Florence Young and Howard Bright, "Results of Testing 81 Negro Rural Juveniles with the Wechsler Intelligence Scale for Children," J. Soc. Psychol., 39 (1954), pp. 219-26.

[94]Walter A. Woods and Robert Toal, "Subtests Disparity of Negro and White Groups Matched for IQs on Revised Beta Test," J. Consult. Psychol., 21 (1957), pp. 136-38.

[95]Albert J. Harris and Robert J. Lovinger, "Longitudinal Measures of the Intelligence of Disadvantaged Negro Adolescents," School Review, Vol. 76, No. 1 (March, 1968), pp. 60-61.

(4) Younger children have tended to be more highly selected than older children. Hunt, Klineberg, and Riseman have emphasized the importance of environmental influences in determining the degree to which intellectual potentiality becomes realized.

Summary

The National Teacher Examinations evolved out of the concern of school administrators for an objective method of evaluating the competency of teacher applicants. Since their inception in 1939, the National Teacher Examinations have undergone several revisions intended to improve their validity; and they remain today as the foremost instrument used by school systems in the evaluation of prospective teachers. The examinations have been used to a lesser extent as instruments for the evaluation of graduate school applicants in teacher-training institutions and in universities. They have also been used as a measure of curriculum offerings and teacher education programs. Despite criticisms of their validity, and what some persons perceive as a threat to local antonomy, the National Teacher Examinations have proved to be an effective instrument in discriminating between good and poor teacher education programs and their products.

The status of physical education was determined by a review of the literature related to a comparison of physical education majors with non-majors and the status of physical education programs.

The section of the review related to comparisons of physical education majors and non-majors indicated that physical education majors are: lower in intelligence; poorer in linguistic skills; less neurotic and more extroverted; more tough minded; more practical; more

emotionally stable; better adjusted; more physically fit; more dynamic and aggressive; open to suggestions; eager to be leaders, to make group decisions and to direct the actions of others.

The section of the review related to the status of physical education programs indicated the following:

(1) The physical education program is considered to be a very important part of the educational process.

(2) Physical education courses are considered to be regular academic courses.

(3) Grades in physical education are consistent with those in other courses.

(4) Grades in physical education are rated in terms of point-hour ratios.

(5) Physical education philosophy is in harmony with the over-all educational philosophy of the college or university.

(6) Departmental objectives in physical education were compatible with the over-all educational philosophy of the institutions in which they are a part.

(7) Administrators view physical education as a vital part of education.

Study-after-study of Negro and white differences in intelligence yielded results in which the I.Q. scores of whites are higher. Analyses of these results have focused on the question of cause-and-effect, and analysts are divided into two groups. One group hypothesizes that the differences are due to genetic factors and the other group holds that they can be attributed to environmental factors. Scientists supporting the environmental view cite recent studies of the

effects of pre-natal care on the mental faculties of the unborn child. Most scientists who uphold the validity of the effect of genetic differences base their conclusions upon re-analysis of the data from previous studies. It would appear that this long-debated issue is very much alive, although the general concensus seems to be that most differences can be attributed to differences in the environments of Negroes and whites.

CHAPTER III

METHODS AND PROCEDURE

This study was designed to investigate two major problems. One deals with the question: What is the status of physical education professional programs within the predominantly Negro colleges and universities as indicated by entrance examination scores, grade point averages, and the National Teacher Examinations scores? The second seeks to answer the question: What is the status of teacher education programs within predominantly Negro colleges and universities as compared with other schools that use the National Teacher Examinations?

Sample

The subjects for this study consisted of students in teacher education programs who attended predominantly Negro colleges and universities that administered the National Teacher Examinations to a substantial portion of seniors who graduated in 1969. All predominantly Negro colleges and universities that have a professional program in physical education and use the National Teacher Examinations were invited to participate in the study.

Procedure

In the Spring of 1970, the writer sent a letter (see Appendix A) to the presidents of all predominantly Negro colleges and universities

listed in the 1969 directory of Negro colleges and universities who have physical education professional programs. The purpose of this letter was to ascertain which institutions require seniors in teachers education programs to take the NTE and which ones would participate in the study.

Out of the 61 institutions contacted, 52 responded. Nine institutions that did not respond within 45 days after a follow-up letter were contacted by phone. Twenty-seven of the 61 institutions indicated that their students in teacher education programs were not required to take the NTE prior to graduation. Two institutions indicated that their students took the NTE prior to graduation, but too few took the 1969 examinations to be included in the study. Five of the remaining institutions indicated that their students took the NTE, but found it impossible to participate in the study. Twenty-seven indicated that their students took the NTE, and that they would be happy to participate in the study.

Each institution that agreed to participate in the study was contacted in writing (see Appendix A), and by phone, concerning the written authorization to the Educational Testing Service in Princeton, New Jersey, for the release of NTE scores as well as arrangements for obtaining entrance examination scores and grade-point averages. A data sheet (see Appendix B) was sent to each institution that agreed to participate in the study to help simplify the collection of the data.

Out of the 27 institutions that agreed to participate in the study, 26 actually participated. Therefore, of the 32 eligible institutions as determined by the scope of this investigation only six did not participate in the study (see Appendix E). The author visited

12 of the 26 institutions and collected the data in person. The remaining 14 institutions sent their data by mail.

All 26 institutions provided NTE (Common and Optional) scores; however, only 22 provided entrance examination scores. These institutions provided data for a total of 3307 subjects, 400 of which were physical education majors. Entrance examinations scores were available for 2420 non-majors and 289 physical education majors. NTE (Common) scores were available for 2826 non-majors and 352 majors, and NTE (Optional) scores for 2786 non-majors and 353 majors.

Method of Analysis

A comparison was made of entrance examination scores, academic achievement, and success on the National Teacher Examinations (Common and Optional) of physical education majors and non-majors.

The entrance examination scores of the schools that used the SAT in 1965 were converted to equivalent ACT by use of the "Table of ACT and SAT Comparable Scores." The author also converted all SCAT scores into equivalent ACT Standard scores by use of the "Table for Converting ACT Composite to SCAT Total" (see Appendix C).

The Oklahoma State University Computer Center provided the following computations which were used to analyze the data in this study:

(1) The standard deviations, means, modes, and medians of the entrance examinations and grade-point averages, NTE (Common) and NTE (Optional) for each discipline.

(2) The difference between the means of majors and non-majors for entrance examination by use of the t-test.

(3) The difference between the means of the grade-point averages of majors and non-majors utilizing an analysis of covariance statistic using entrance examination scores as the covariance.

(4) The difference between the means of the NTE (Common) scores of majors and non-majors utilizing an analysis of covariance statistic using entrance examination scores and grade-point averages as covariances.

(5) The difference between the means of the NTE (Optional) scores of majors and non-majors utilizing an analysis of covariance statistic using entrance examination scores and grade-point averages as covariances.

(6) Correlation between entrance examinations, grade-point averages, NTE (Common) and NTE (Optional) by use of a correlation matrix.

(7) Test for significant difference between the means of entrance examination scores, NTE (Common) and NTE (Optional) for all schools utilizing an analysis of variance statistic.

A comparison of entrance examination scores was made to determine if there was a difference in the two groups (physical education majors and non-majors) prior to their college experience. A comparison of the mean scores was made by utilizing a t- statistic to analyze the results. The significant level was set at the .05 level for a two tail test. A bar graph was also drawn to show the mean score of each discipline and for comparison with national norms (see results p. 73). The above computations were designed to give some indication of the academic

ability of students majoring in physical education as compared to students majoring in other disciplines.

A comparison was made of grade-point averages to determine if there was a difference in the two groups (physical education majors and non-majors) after four years of college experience. In making this comparison, entrance examination scores were considered. The means of the entrance examination scores were equated, and the difference between the means of the grade-point averages were computed by utilizing an analysis of covariance statistic.

A comparison of the mean scores of the Common Examinations was made to determine if there was a difference in the two groups (physical education majors and non-majors). In making this comparison, entrance examination scores and grade-point averages were considered. The mean of the entrance examination scores and grade-point averages were equated and the difference between the means of the NTE scores (Common) were computed by utilizing an analysis of covariance statistic. A bar graph was drawn to show the mean score of each discipline and for comparison with national norms (see results p. 77). These comparisons give some indication of how the average major and non-major perform on the Common Examinations, and how this performance compares with national and regional averages.

An analysis of covariance statistic was also used to test the significance of difference between mean scores of the Optional Examination of the two groups (majors and non-majors). A bar graph was drawn to show the mean scores of each group on the Optional Examination and for comparison with national norms (see results p. 80).

Correlation coefficients for majors and non-majors were computed by the use of a correlation matrix formulated for the following: (1) correlate entrance examination scores and grade-point averages, (2) entrance examination scores and NTE (Common), (3) entrance examination scores and NTE (Optional); (4) grade-point averages and NTE (Common), (5) grade-point averages and NTE (Optional), and (6) NTE (Common) and NTE (Optional).

The above computations were designed to indicate whether physical education majors who excel in their major area also do well on the NTE, and vice versa. The above computations also indicate whether physical education majors perform as well on their Optional Exam as other students on their major exams, and whether the physical education curricula covers the exam content.

An analysis of variance statistic was utilized to test for significant difference between the means of entrance examination scores, grade-point averages, NTE (Common) and NTE (Optional) for all schools that participated in the study. A bar graph (see results p. 89) was drawn to indicate the status of each school as compared with each other and with national norms.

The colleges and universities in this study are given code numbers (1-26) because the study is not concerned with the institutions individually, but with the status of physical education professional programs within these schools.

CHAPTER IV

RESULTS AND DISCUSSION

The present study was designed to examine the status of professional physical education programs in predominantly Negro colleges and universities. The investigation began the first week in January, 1970 and terminated June 10, 1970. Twenty-six predominantly Negro colleges and universities participated in the study by providing entrance examination scores (1965), grade-point averages, and NTE scores of students who took the NTE in 1969.

The data were subjected to statistical treatment which allowed the writer to draw conclusions about the status of professional physical education programs in predominantly Negro colleges and universities. The writer was also able to make some generalizations about the status of teacher education programs within predominantly Negro colleges and universities as compared with other colleges and universities that use the National Teacher Examinations.

Statistical Treatment

The hypothesis that there was no significant difference between the academic ability of physical education majors and non-majors as measured by entrance examinations was examined by use of a bar graph and a t-test. The bar graph is presented in Figure 1.

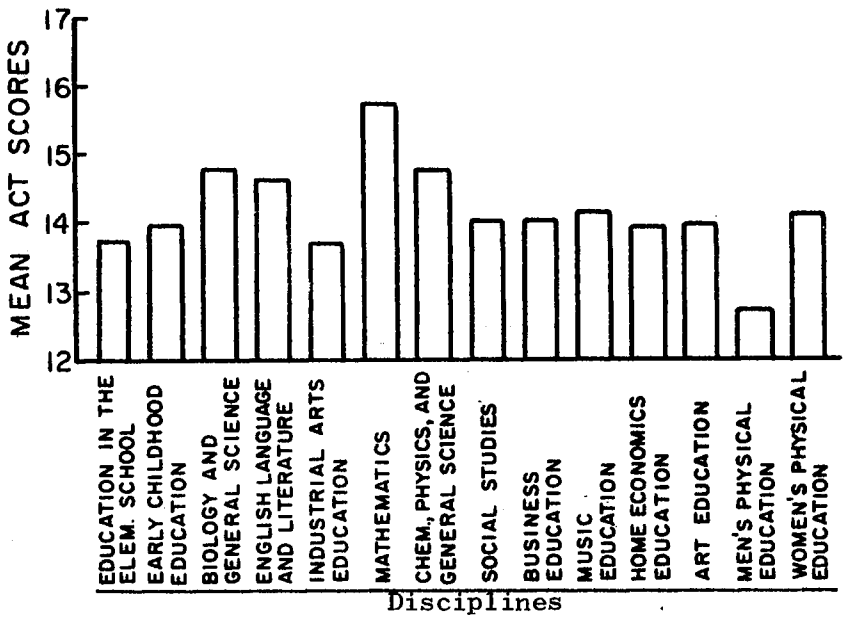

Figure 1. Mean Entrance Examination Scores by Disciplines for the Class of 1969 From Twenty-two Predominantly Negro Colleges and Universities*

The above graph indicated how the mean entrance examination score of physical education majors compared with that of each discipline individually. It gave a clearer picture of the academic ability of the students that enrolled in the physical education professional programs as compared to students that enrolled in other disciplines. The lowest mean entrance examination score of 12.9 was for men physical education majors. This was contrasted with a mean entrance examination score of 14.0 for women physical education majors and a mean entrance examination score of 13.7 for the disciplines of elementary education

*For comparison with national norms, see Appendix D.

and industrial arts. These latter two disciplines had the lowest mean score after that of the men physical education majors.

The mean entrance examination scores of men and women in physical education were combined and compared with the mean score of all other disciplines combined. A t-test was computed to test for a significant difference between the means, and the results are summarized in Table I.

TABLE I

SUMMARY OF DATA FOR COMPARISON OF ENTRANCE EXAMINATION SCORES
Critical t = 1.960

	Mean	SD	DF	t
Majors	13.3114	3.44902	2707	3.93766*
Non-Majors	14.1223	3.29178		

*$p < .001$

As can be seen from these results, hypothesis one was not supported. The difference between the mean entrance examination scores of physical education majors (men and women combined) and that of non-majors was statistically significant beyond the .001 level of confidence.

These results indicated that there was a significant difference in the academic ability of physical education majors and non-majors prior to their college experiences. In comparison to the other disciplines

in these colleges and universities it appeared that the physical education programs admitted inferior students, especially men, as measured by the examination scores used.

The analysis of covariance was the statistical technique utilized to compare grade-point averages of physical education majors with non-majors. Elashoff describes covariance analysis as a popular technique.[1] It is widely used to "adjust" criterion scores such as achievement for the effects of a covariate such as ability in order to compare several treatments. The covariance procedure reduces possible bias in treatment comparisons due to differences in the covariate and increases precision in the treatment comparisons by reducing variability in criterion scores "due to" variability in the "covariate."

Since entrance examination scores appeared to influence grade-point averages, the writer felt that the analysis of covariance statistic would be the most appropriate statistic to equate entrance examination scores which would otherwise cause a bias in the computation. The results are summarized in Table II.

The results summarized in Table II indicate that the hypothesis that there was no significant difference between the grade-point averages of majors and non-majors was rejected at both the .05 and .01 level of confidence. These results indicate that there was a difference in the academic achievement of the two groups (majors and non-majors) as measured by grade-point averages. This implies that the achievement in the college or university program by majors is less than that of

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[1] Janet D. Elashoff, "Analysis of Covariance: A Delicate Instrument," American Educational Research Journal, Vol. 6, No. 3 (May, 1969), pp. 383-401.

non-majors over a four-year period. The fact that majors enter college with lower entrance examination scores than non-majors was accounted for by adjusting the entrance examination scores to eliminate a possible bias which could be caused by unequal means (covariate).

TABLE II

SUMMARY OF DATA FOR COMPARISON OF GRADE-POINT AVERAGES

Source	Analysis of Covariance					
	DF	YY	SS (DUE)	SS (ABOUT)	DF	MS
Treatment (Between)	1	3.2578				
Error (Within)	1286	201.4883	48.2647	153.2236	1285	0.1192
Treatment + Error (Total)	1287	204.7461	50.1365	154.6096	1286	
Difference for Testing Adjusted Treatment Means.....				1.3860	1	1.3860

Tabulated .05 F = 384

Calculated F = 11.623 Significant at .05 and .01 level of confidence.

The hypothesis that there was no significant difference in achievement on the NTE (Common) of majors and non-majors was examined visually by use of a bar graph and tested statistically by use of an analysis of covariance design. The bar graph illustrating how physical education

majors compared with non-majors on the NTE (Common) is presented in Figure 2.

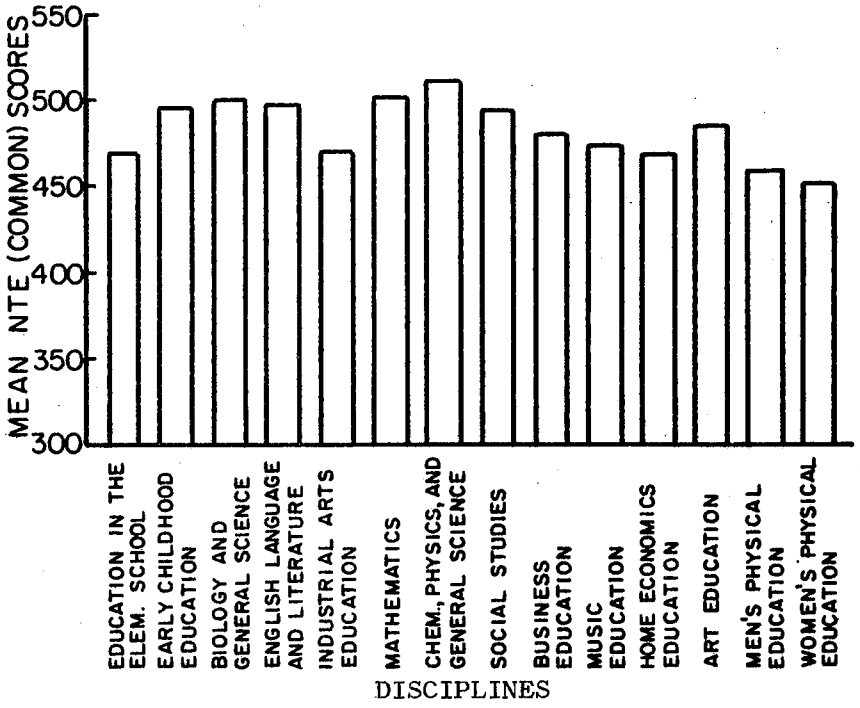

Figure 2. Mean NTE (Common) Scores by Discipline for the Class of 1969 From Twenty-six Predominantly Negro Colleges and Universities

Figure 2 revealed that the mean NTE (Common) score of men physical education majors (458.9) was slightly higher than that for women (452.3). It was lower, however, than that for non-physical education majors regardless of the discipline. The non-majors with the lowest

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*For comparison with national nomrs, see Appendix D.

NTE (Common) mean score next to physical education majors were in home economics education (468.0)

The mean NTE (Common) scores of physical education majors (men and women) appeared to compare more favorably with those in other disciplines than was the case for mean entrance examination scores. However, when the mean NTE (Common) scores of men and women physical education majors were combined (456.1) and compared with the mean score of non-majors (484.3) a statistically significant difference was revealed.

The analysis of covariance was used to examine significance difference between the above means because it enabled the writer to equate the effect of entrance examination scores and grade-point averages which appeared to influence performance on the NTE. The results are summarized in Table III.

A logical question at this point probably would be: How does one explain the results in Table III, which show that there is a significant difference? The writer offers two possible explanations:

(1) The amount of general education required for physical education majors might be inferior to that required in other departments.

(2) Students majoring in other areas may have an advantage in taking the NTE (Common) because of its content. It contains whole sections on mathematics, English, social studies, music and art, science, etc. This gives students majoring in these areas an advantage on their particular section and an equal chance on other sections.

TABLE III

SUMMARY OF DATA FOR COMPARISON OF THE NATIONAL TEACHER EXAMINATIONS (COMMON) SCORES

Source	Analysis of Covariance					
	DF	YY	SS (DUE)	SS (ABOUT)	DF	MS
Treatment (Between)	1	109824.				
Error (Within)	1262	7404288.	2856538.	4547750.	1260	3609.3252
Treatment + Error (Total)	1263	7514112.	2938652.	4575460.	1261	
Difference for Testing Adjusted Treatment Means.....				27710.		27710.

Tabulated .05 F = 384

Calculated F = 7.677 Significant at 0.05 and 0.01 level of confidence.

The analysis of covariance and a bar graph were also utilized to examine the hypothesis that there was no significant difference in achievement on the Optional or Special Examinations by majors and non-majors. The writer felt that this would be helpful in indicating the status of physical education professional programs as compared with programs in other disciplines within these schools. Figure 3 presents these comparisons.

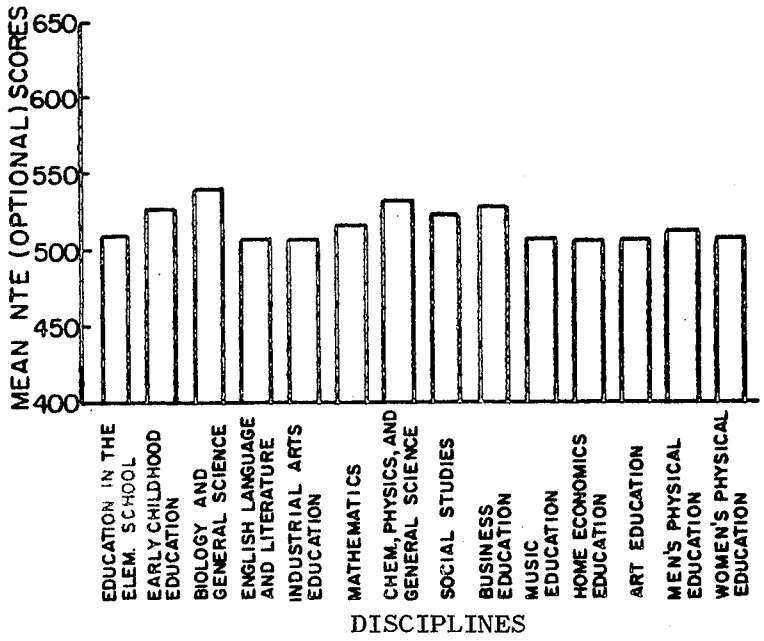

Figure 3. Mean NTE (Optional) Scores by Discipline for the Class of 1969 From Twenty-six Predominantly Negro Colleges and Universities

As revealed in the above figure, the mean NTE (Optional) score of men physical education majors was higher than the mean score of women majors, as was the case for NTE (Common) scores. In comparison with non-majors in other disciplines, both men and women majors had higher mean scores than non-majors in art, home economics, music, industrial arts, and English; and the men physical education majors had a higher mean score than non-majors in elementary education. The results indicated an improvement by physical education majors on the Optional Examination relative to the performance of non-majors. This improvement was reflected in the comparison of the combined mean of majors (510.3) with

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*For comparison with national norms, see Appendix D.

that of non-majors (515.1) using an analysis of covariance, with entrance examination scores and grade-point averages as the covariates. The results of this analysis are presented in Table IV.

TABLE IV

SUMMARY OF DATA FOR COMPARISON OF THE NATIONAL TEACHER EXAMINATIONS (OPTIONAL) SCORES

Source	Analysis of Covariance					
	DF	YY	SS (DUE)	SS (ABOUT)	DF	MS
Treatment (Between)	1	9216.				
Error (Within)	1262	7835136.	2791304.	5043832.	1260	4003.0413
Treatment + Error (Total)	1263	7844352.	2794454.	5049898.	1261	
Difference for Testing Adjusted Treatment Means.....				6066.	1	6066.0000

Tabulated .05 F = 384

Calculated F = 1.515 Not significant at 0.05 level of confidence.

As can be seen from the above table, a critical F of at least 3.84 is required to reject the null hypothesis at the five per cent level of confidence. The computed F of 1.515 is not large enough to reject the null hypothesis, therefore, it is accepted.

From the results summarized in Table IV, the writer offers the following explanations: (1) physical education majors perform as well on their Optional Examination as do non-majors on their major examination, (2) the physical education curriculum covers as much of the Optional Examination content as other curricula cover in their special area, and (3) physical education staff members are teaching or instructing as well in their specialized field as staff members in other disciplines are in their specialized fields.

Pearson Product-Moment correlation matrices were computed to test hypotheses five and six which stated that there was no significant correlation between entrance examination scores, grade-point averages, and NTE scores (Common and Optional) for majors and non-majors, respectively. The results of these computations are presented in Tables V and VI. The number of subjects, indicating the degrees of freedom, were placed in parenthesis below the correlation coefficient for each of the variable pairs.

The correlation coefficients needed for significance at the .05 level of confidence were determined by using the formula $Z = r\sqrt{N-1}$, where $Z = \pm 1.96$ corresponds to 95 per cent of the area under a normal curve. Solving this equation for r, the following values were obtained using the N's in Table V:

entrance examination and GPA - .1155

entrance examination and NTE Common - .1206

entrance examination and NTE Optional - .1207

GPA and NTE Common - .1046

GPA and NTE Optional - .1045

NTE Common and NTE Optional - .1051

TABLE V

SUMMARY OF DATA FOR THE RELATIONSHIPS BETWEEN SELECTED VARIABLES FOR MAJORS

	Entrance Exams	GPA	NTE Comm.	NTE Opt.
Entrance Exams	1.0000 (289)	.32033* (289)	.48073* (265)	.5092* (265)
GPA		1.0000 (400)	.35663* (352)	.35408* (353)
NTE (Common)			1.0000 (352)	.72436* (349)
NTE (Optional)				1.0000 (353)

*Denotes statistically significant relationship at .05 level.

Using these criteria, all r values in Table V indicate significant relationships between the variables among physical education majors.

The correlation coefficients needed for significance at the .05 level among non-majors in Table VI were computed to be:

entrance examination and GPA - .0399

entrance examinations and NTE Common - .0404

entrance examination and NTE Optional - .0406

GPA and NTE Common - .0369

GPA Common and NTE Optional - .0372

NTE Common and NTE Optional - .0372

Based on these criteria, each of the correlation coefficients in Table VI indicated a significant relationship between the variables.

TABLE VI

SUMMARY OF DATA FOR THE RELATIONSHIPS BETWEEN SELECTED VARIABLES FOR NON-MAJORS

	Entrance Exams	GPA	NTE Comm.	NTE Opt.
Entrance Exams	1.0000 (2420)	.52670* (2418)	.62823* (2352)	.57049* (2326)
GPA		1.0000 (2907)	.40834* (2822)	.39700* (2782)
NTE (Common)			1.0000 (2826)	.79915* (2783)
NTE (Optional)				1.0000 (2786)

*Denotes statistically significant relationship at .05 level.

Inspection of the correlation matrices in Table V and VI revealed that variation in entrance examination scores accounted for more of the variation in NTE scores than in grade-point average for both majors and non-majors. However, it is noted that the variation in entrance examination scores for non-majors accounts for 28 per cent of the variation in grade-point average, and 39 per cent 33 per cent of the variation in NTE Common and NTE Optional scores, respectively. This contrasted with 10 per cent of the variation in grade-point average, and 23 per cent and 26 per cent of the variation in NTE scores, accounted for by the variation in entrance examination scores for majors.

The variation in grade-point averages accounted for 17 per cent of the variation in NTE Common scores and 16 per cent of the variation in NTE Optional scores among non-majors. Comparable proportions of

variation between the variables among majors are 13 per cent for NTE Common scores and 12 per cent for NTE Optional scores.

Sixty-four per cent of the variation in NTE Common and NTE Optional scores is accounted for among non-majors which is somewhat less (52 per cent) for majors.

The writer was interested in knowing whether there was a significant difference in the 26 schools that participated in the study. The null hypothesis that there was no significant difference between the mean entrance examination scores of the schools was examined by use of a bar graph and analysis of variance statistical design. The mean entrance examination score of each of 22 of the participating institutions is presented in Figure 4. The scores range from 12.2 to 16.1 with 12 institutions having a mean entrance examination score above 14.

Tests for significant differences between the means of entrance exams scores, grade-point averages, NTE (Common) and NTE (Optional) scores of all schools in the study were conducted utilizing an analysis of variance statistic. The analysis of variance statistic was selected because of its improvement over the t-test. The t-test considered previously was utilized as a method for comparing the groups' means of two separate groups. According to Popham, problems frequently arise in which it is desirable to compare the means of several groups at once, rather than testing all possible pairings individually.[2] The analysis of variance statistical technique affords a method for accomplishing such a task.

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[2]W. James Popham, Educational Statistics, (New York, 1967), pp. 164-65.

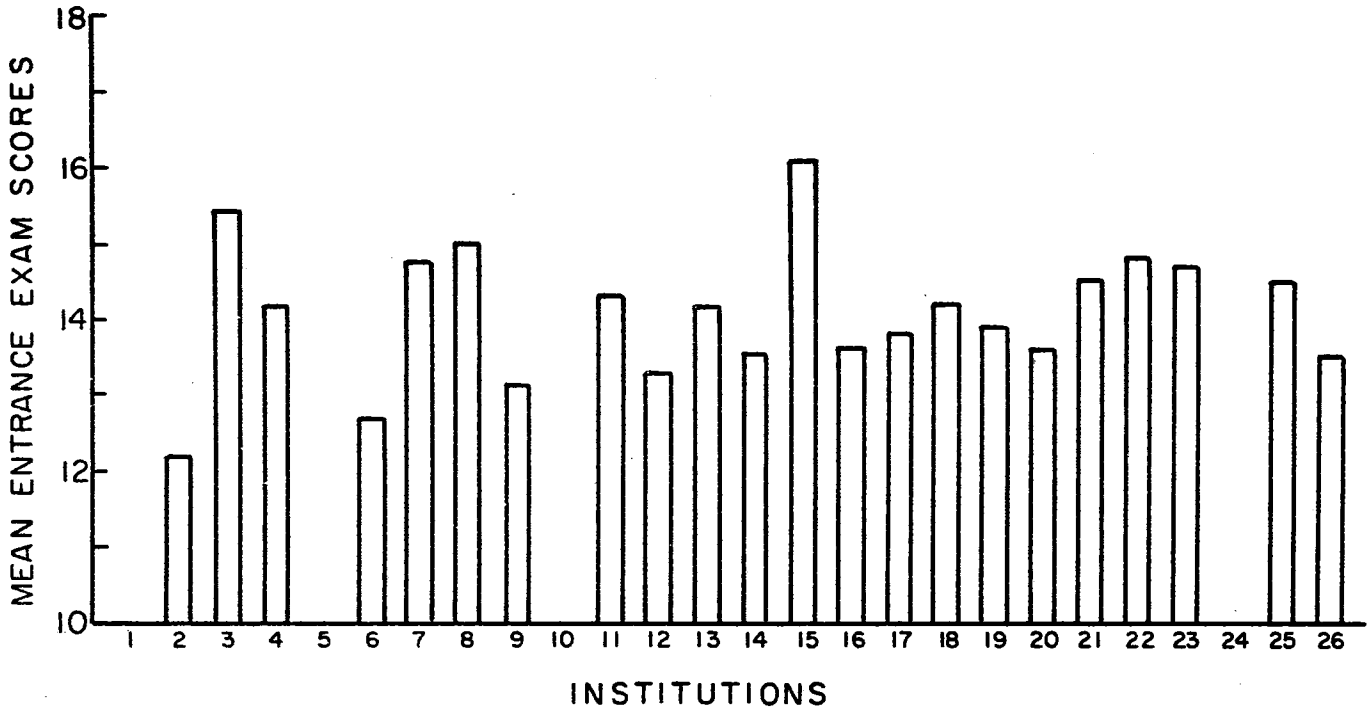

Figure 4. Entrance Examination Mean Scores of Twenty-Two Predominantly Negro Colleges and Universities*

*For comparison with national norms, see Appendix D.

The null hypothesis that there was no significant difference between the mean entrance examination scores of the schools was tested by use of the analysis of variance statistics. The results are summarized in Table VII.

TABLE VII

SUMMARY OF DATA FOR COMPARISON OF ENTRANCE EXAMINATION SCORES OF TWENTY-TWO PREDOMINANTLY NEGRO COLLEGES AND UNIVERSITIES

	Analysis of Variance		
Source	DF	SS	MS
Total	2708	29807.2383	
Between	21	2394.3945	114.0188
Within	2687	27412.8437	

Tabulated .05 F = 1.57

Calculated F = 11.17 Significant at .05 and .01 level of confidence.

The F value generated by the analysis of variance was statistically significant beyond the .05 level of confidence. This result indicated significant differences between the colleges and universities on entrance examination scores.

Two analyses of variance statistics and a bar graph were used to examine the null hypotheses that there were no significant differences between the mean scores of the schools on either the Common or Optional

form of the NTE. The mean composite scores (Common and Optional) of the NTE for each of the 26 colleges and universities are presented in Figure 5 to aid visual inspection of the difference between schools. The mean composite scores range from 872 to 1211 with over one-half of the institutions scoring above 950.

The results of the analysis of variance examining differences between the schools on each form (Common and Optional) of the NTE are presented in Tables VIII and IX.

TABLE VIII

SUMMARY OF DATA FOR COMPARISON OF THE NATIONAL TEACHER EXAMINATIONS (COMMON) OF TWENTY-SIX PREDOMINANTLY NEGRO COLLEGES AND UNIVERSITIES

	Analysis of Variance		
Source	DF	SS	MS
Total	3177	19122608.0000	
Between	25	5540884.0000	221635.3125
Within	3152	13581732.0000	4308.9219

Tabulated .05 F = 1.52

Calculated F = 51.4364 Significant at .05 and .01 level of confidence.

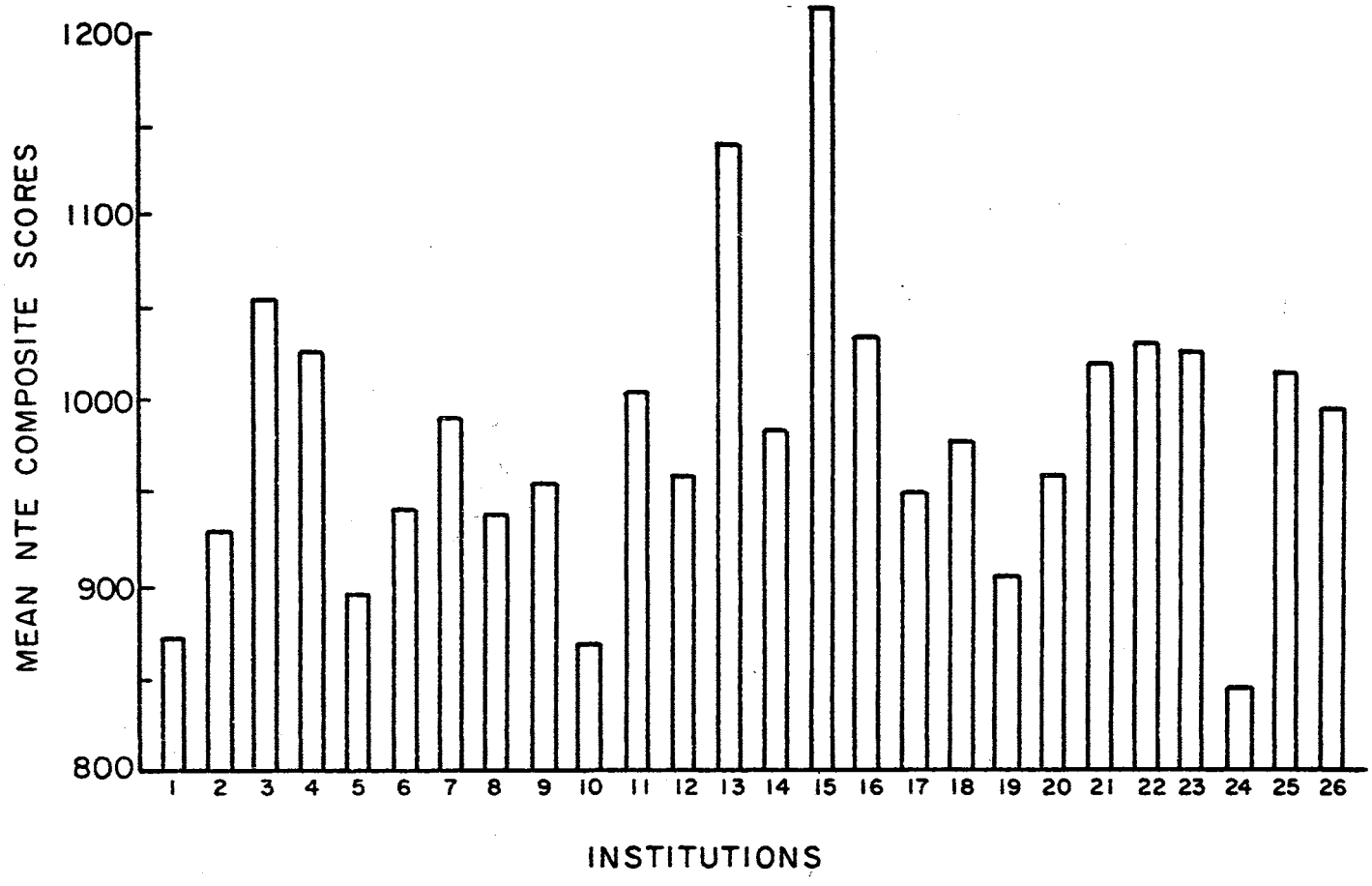

Figure 5. NTE (Composite) Mean Scores of Twenty-Six Predominantly Negro Colleges and Universities*

*For comparison with national norms, see Appendix D.

TABLE IX

SUMMARY OF DATA FOR COMPARISON OF THE NATIONAL TEACHER EXAMINATIONS (OPTIONAL) OF TWENTY-SIX PREDOMINANTLY NEGRO COLLEGES AND UNIVERSITIES

Source	Analysis of Variance		
	DF	SS	MS
Total	3183	19087056.0000	
Between	25	5408844.0000	216353.7500
Within	3113	13678217.0000	4393.8984

Tabulated .05 F = 1.52

Calculated F = 49.2396 Significant at .05 and .01 level of confidence.

The F values obtained were statistically significant beyond the .05 level. They indicate that the schools were significantly different on both forms (Common and Optional) of the NTE. The similarity of the magnitude of the F's presented in Tables VIII and IX is an indication that the forms were equally effective in discriminating between the institutions.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the status of physical education professional programs within predominantly Negro colleges and universities as measured by entrance examinations, grade-point averages, and the National Teacher Examinations. Also to indicate the status of teacher education programs in these schools as compared with other schools that use the National Teacher Examinations.

The colleges and universities in this study were given code numbers because the study was not concerned with the institutions individually, but with the status of physical education within these schools. The intent has not been to publicize any particular college, university, or program, but to serve as an incentive for upgrading this area of predominantly Negro education.

Chapter I was concerned primarily with clarifying the problem by presenting, in detail, the statement of the problem, the significance of the study, definition of terms, purpose, hypotheses, and limitations of the study.

Chapter II concerned itself with studies and articles in three related areas that seem pertinent to this study: These areas are: (1) the National Teacher Examination, (2) the status of physical education, and (3) racial differences in intelligence.

The third chapter involved the methods and procedures that were used in comparing entrance examination scores, grade-point averages and National Teacher Examinations scores of majors and non-majors. Also the comparison of mean entrance exam scores and NTE mean scores with national norms.

Chapter IV dealt with an analysis of the findings in the study which included the following: (1) a significant difference between the entrance examination scores of majors and non-majors at the five per cent level of confidence, (2) a significant difference between grade-point averages, (3) a significant difference between performance on the Common Examinations, (4) no significant difference in performance on the Optional Examinations, (5) significant relationships between the four variables investigated among majors and non-majors, and (6) a significant difference between the schools on three selected variables (entrance examination scores, NTE (Common), and NTE (Optional). A comparison of the means of entrance exams and NTE with national norms indicated the percentile rank of each variable by discipline and by schools.

It is evident from the finding of this investigation that the physical education professional programs within the institutions studied are working with students with less intellectual ability than students in other disciplines. However, this is not unique to predominantly Negro institutions. Other investigations with similar findings were reported by Bookwalter (1941), Wheeler and Smith (1955), and Kenyon (1965), previously cited in Chapter II.

This investigation also indicated that physical education majors are less prepared in general education than non-majors within these

schools as indicated by performances on the NTE (Common). Other investigations with similar findings were reported by Wheeler and Smith (1955), Duggan (1937), and Conant (1963) referred to in Chapter II.

The finding that majors and non-majors differed significantly on mean NTE (Common) score and on mean entrance examination scores was not surprising. Inasmuch as both measures appear to reflect competence in general education, the consistency appeared valid, given the assumption of comparable experiences during four years of college.

The finding that physical education majors did not differ from non-majors on the NTE (Optional) was consistent with studies found in Chapter II: Wheeler and Smith (1955), Ragsdale (1932), Conant (1963), and Workman (1968).

Based on the assumption that physical education staff members in these schools are as well prepared in their discipline as other staff members in their specialized area and that they are teaching or instructing as well was not a surprising result.

The over-all picture of the teacher education programs within these schools as measured by mean scores on the NTE indicated that they were quite inadequate. As would be expected when dealing with mean scores of a large number of entities, there were exceptions to this statement. One school had a mean score of 591 on the NTE (Common) which corresponds to the 45th percentile. At the other end of the scale, one school had a mean score of 411 which is below the 5th percentile.

In spite of the wide range of scores, no one school scored above the 50th percentile, which was a strong indication that these schools need to be upgraded. On the basis of the performance of students from these schools on the NTE, the writer envisions this as an indication

that the teacher education programs in these institutions rank below those in many institutions of higher education.

Signs of improvement are noted, based on the results of the NTE (Optional) which indicated that these institutions are doing a better job in specialized education than general education. This was demonstrated by the fact that 16 of the schools had a mean score above 500, and one as high as 619 which was considered to be evidence of their usefulness in higher education.

The finding that freshmen entering these schools scored between the 5th and 20th percentile on entrance examination scores, and after four years of experience scored as high as the 45th percentile on the NTE, was indicative of a positive effect of some of these institutions.

The findings indicated that, in spite of the poor showing of the products of these institutions on pencil and paper tests, there is no substitution for their services. These institutions have done and are doing more to serve the higher education needs of large numbers of Negro youth than any other group of institutions.

The productivity of the graduates of many of these colleges and universities raises the question relative to the effectiveness of the NTE in evaluating the ability and achievement of students at these institutions.

Conclusions

From the results of this investigation the following conclusions relative to the hypotheses under study were made:

(1) The hypothesis that there was no significant difference between the entrance examination scores of majors and

non-majors was untenable. It was concluded, therefore, that the ability of physical education majors as measured by entrance examination scores was less than the ability of students in other areas of teacher education.

(2) The hypothesis that there was no significant difference between the grade-point averages of majors and non-majors was untenable. It was concluded that the academic achievement of physical education majors in the total college or university teacher education program was less than that of the non-majors over a four-year period as measured by grade-point averages. The results indicate that the non-majors excel the majors in over-all academic achievement.

(3) The hypothesis that there was no significant difference in achievement on the NTE (Common) by majors and non-majors was untenable. It was concluded that physical education majors score lower on the NTE (Common) than non-majors.

(4) The hypothesis that there was no significant difference in achievement on the Optional or Special Field Examinations by majors and non-majors was supported. Therefore, it was concluded that physical education majors perform as well on the NTE (Optional) as non-majors.

(5) The hypothesis that there was no significant correlation between all combinations of the following variables: entrance examination score, grade-point average, NTE (Common), and NTE (Optional), among majors, was untenable.

It was concluded that the six possible pairings of these variables are significantly related.

(6) The hypothesis that there was no significant correlation between all combinations of the following variables: entrance examination score, grade-point average, NTE (Common), and NTE (Optional), among non-majors was untenable. It was concluded that the six possible pairings of these variables are significantly related.

(7) The hypothesis that there was no significant difference between the participating schools on the three selected variables: entrance examination score, NTE (Common), and NTE (Optional), is untenable. It was concluded, therefore, that the participating schools differ significantly on each of the following variables: entrance examination score, NTE (Common), and NTE (Optional).

Since the NTE is a measure of teacher education courses and curriculum offering the low scores made by students attending the 26 participating institutions supports the conclusion that the total teacher education program in these schools needs upgrading.

Recommendations

On the basis of the findings of this study, the following recommendations are made:

There is a definite need to evaluate the general education requirements for students majoring in physical education within these schools.

There is a definite need to make concerted efforts to recruit students with higher intellectual ability (entrance exam scores) in the physical education professional programs within these schools.

There is a need to evaluate the curriculum content of physical education professional programs.

There is a need to study the qualifications and productivity of staff members teaching professional education courses.

There is a need to study the qualifications and productivity of staff members teaching general education courses.

Further Study

It is recommended that a study be made in the areas of curriculum offerings, course content, and staff qualifications.

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APPENDIX A

SAMPLES OF CORRESPONDENCE

Physical Education Department August 21, 1968

Mr. Arthur L. Benson, Director
National Teacher Examinations,
Educational Testing Service,
Princeton, New Jersey 08540

Dear Mr. Benson:

As a doctoral candidate in the area of Physical Education at the Oklahoma State University, I am interested in doing a study involving the National Teacher Examinations. Having served as Chairman of the Physical Education Department in a small land-grant college with a predominately Negro enrollment (Maryland State College), the writer would like to make a comparison of Academic Achievement and Success on the National Teacher Examinations taken by physical education majors and non-majors in selected predominately Negro colleges. Dr. Brobst, Director of Testing at the Oklahoma State University, recommended that I contact your office for assistance.

I am enclosing a copy of my proposal and do trust that I am not over-stepping my boundaries in asking that you kindly examine it and let me know whether your office can assist me in the project. I should, of course, be pleased to bear whatever expense might occur in furnishing statistics, records, or other pertinent data.

With many thanks for your attention, I am

Sincerely,

Howard Davis
Head, Department of Physical Education

enclosure
HD/s

Dear :

As a doctoral candidate in the area of Physical Education at the Oklahoma State University, I am interested in making a study which involves the National Teacher Examinations. My interest in the performances of students of various major disciplines on this examination originated during the years that I served as Chairman of the Department of Physical Education at a land-grant college whose enrollment is predominantly Negro. I propose to compare entrance examination scores, academic achievement (four year grade point averages), and the success on the National Teacher Examinations of physical education majors and such achievement and success of non-majors of the class of 1969, at selected predominantly Negro colleges and universities.

The purpose of this letter is to request your participation in the study. I am convinced that there is value in investigating and organizing a significant body of information about the physical education major, information which surely must have implications for curricula and teaching methodology beyond my own institution.

The proposed study can be undertaken only if participating institutions will make available the scores and grade point averages mentioned above and give written authorization to the Educational Testing Service in Princeton, New Jersey, for the release of scores of all students in all disciplines that took the 1969 National Teacher Examinations. I assure you that - as is ethical custom in such research - under no circumstances will information be identified with colleges and universities providing it.

Since the area of physical education has been neglected in the past, so far as federal funds are concerned, there is a good chance that this study will enhance the possibility of making federal funds more available to this discipline.

If you are interested in participating in the study, will you please complete the enclosed postal card and return it?

Each participating institution will receive a copy of the completed study.

Upon receipt of your consent to participate, I shall make further contact with you to discuss the written authorization to the Educational Testing Service as well as arrangements for obtaining entrance examination scores and grade point averages from your institutions.

As a Black professor who is extremely involved with Black students, and interested in the welfare and future of predominantly black institutions, I want you to know that whatever consideration you give to this proposal will be greatly appreciated.

Sincerely,

Howard Davis

HD/mrd

Enc.

Dear Mr. Davis:

( ) We will cooperate with you in your study.

( ) We will not be able to participate in your study.

( ) Our teacher education program students do not take the National Teacher Examination prior to graduation.

Sincerely,

Dear :

Thank you for agreeing to participate in the study (A Comparison of Academic Achievement and Success on the National Teacher Examinations of Physical Education Majors and Non-Majors in Selected Predominantly Negro Colleges). Please have a member of your staff complete the enclosed data sheet and return it to me as early as possible. Preferably not later than April 1, 1970.

Dr. Arthur L. Benson, Program Director at the Education Testing Center in Princeton, New Jersey, has agreed to furnish the National Teacher Examinations scores (Common and Optional) of all subjects involved in the study providing the participating institutions give written authorization for the release of these data. If NTE scores of students that took the examinations in 1969 are not on file at your institution please authorize Dr. Benson to furnish me with these scores. As stated in my initial letter, I assure you that - as is ethical custom in such research - under no circumstances will information be identified with colleges and universities providing it.

Thank you very much for your cooperation,

Sincerely,

Howard Davis

HD/mrd

Enc.

APPENDIX B

SAMPLE OF DATA SHEET

DATA SHEET

Entrance Examination Scores, Academic Achievement, and the National Teacher Examination Scores of 1969 Graduates in teacher education.

Name	Entrance Exams Scores (Indicate SAT, ACT, etc.)	4 Yr. Grade Point Ave. (2.5, etc.)	NTE Scores (If Available		Disciplines (Sci. Ed. Phy. Ed., etc.
			Common	Optional	

If the National Teacher Examinations scores are not on file please write Dr. Author L. Benson, Director, National Teacher Examinations, Education Testing Service, Princeton, New Jersey 08540 and ask him to please send NTE scores of the individuals listed above to Howard Davis, Oklahoma State University, Colvin Physical Education Center, Stillwater, Oklahoma 74074.

APPENDIX C

CONVERSION TABLES FOR ACT, SAT, AND SCAT SCORES

TABLE X

TABLE OF ACT AND SAT COMPARABLE SCORES*

ACT Verbal Mean of Tests 1, 3, and 4	*SAT* Verbal	*ACT* Test 2 Mathematics	*SAT* Math	*ACT* Composite	*SAT* Total (V+M)
32	721	34	755	32	1440
31	706	33	732	31	1405
30	690	32	705	30	1362
29	665	31	674	29	1317
28	643	30	650	28	1263
27	616	29	628	27	1201
26	588	28	603	26	1150
25	558	27	580	25	1100
24	532	26	558	24	1051
23	499	25	532	23	998
22	473	24	505	22	948
21	444	23	484	21	909
20	419	22	467	20	872
19	392	21	450	19	825
18	373	20	433	18	792
17	351	19	418	17	754
16	336	18	405	16	719
15	321	17	377	15	680
14	294	16	354	14	630
13	277	15	345	13	605
12	260	14	323	12	582
11	243	13	308	11	547
10	226	12	288	10	512
9	209	11	273	9	477

*This table of comparable scores on the *ACT* and *SAT* scales was established by means of the equal percentile method (see page 752 ff. in *Educational Measurement*, published by the American Council on Education, E. F. Lindquist, editor). The data were obtained from a sample of 1,656 high school students who took both the *SAT* and the *NMSQT* tests in the spring of 1959. Since the *NMSQT* uses the same scale as the *ACT* test, this table applies both to the *ACT* and *NMS* tests.

TABLE XI

TABLE FOR CONVERTING ACT COMPOSITE TO SCAT TOTAL*

ACT Comp.	SCAT Total	ACT Comp.	SCAT Total
35	110	17	56
34	107	16	52
33	105	15	49
32	103	14	45
31	101	13	41
30	99	12	38
29	97	11	35
28	95	10	33
27	92	9	30
26	89	8	27
25	85	7	23
24	81	6	20
23	77	5	18
22	74	4	15
21	70	3	13
20	66	2	11
19	62	1	10
18	59		

	MEAN	S.D.
ACT Comp.	18.17	6.54
SCAT Total	60.5	22.2

r = 0.917

SEE = 0.888

N = 950

*"Table for Converting ACT Composite to SCAT Total," The American College Testing Program, Lubbock, Texas.

APPENDIX D

NORMS FOR THE AMERICAN COLLEGE TEST AND NATIONAL TEACHER EXAMINATIONS

TABLE XII

NATIONAL PERCENTILE RANKS FOR
COLLEGE-BOUND
HIGH SCHOOL SENIORS

(1965)
(American College Test)

standard score	Test 1 English	Test 2 mathematics	Test 3 social studies	Test 4 natural science	Test 1-4 composite	standard score
36		99.9				36
35		99.8				35
34		99.3	99.9	99.9		34
33		98.5	99.8	99.6		33
32		97	99.2	98.9	99.9	32
31	99.9	95	98	98	99.6	31
30	99.7	93	96	96	98.8	30
29	99.1	91	93	93	97	29
28	98	88	89	89	95	28
27	96	85	85	84	91	27
26	92	81	80	79	87	26
25	88	77	74	73	82	25
24	81	72	69	67	75	24
23	74	66	63	60	68	23
22	67	61	57	55	61	22
21	59	56	51	49	53	21
20	51	51	45	44	46	20
19	42	46	38	39	38	19
18	34	40	33	33	31	18
17	27	34	28	27	25	17
16	21	28	22	22	19	16
15	16	22	17	18	15	15
14	13	18	13	15	11	14
13	10	14	10	11	8	13
12	7	10	8	9	5	12
11	5	8	6	7	4	11
10	4	6	4	5	2	10
9	3	4	3	3	1	9
8	2	3	2	2		8
7	2	2	2	2		7
6	1	2	1	1		6
5		1				5
4						4
3						3
2						2
1						1

Source: "National Percentile Ranks for College-Bound High School Seniors," The American College Testing Program (Iowa City).

TABLE XIII

PERCENTILE RANKS OF THE WEIGHTED COMMON EXAMINATIONS
TOTAL SCORE (1969)

Percentile Rank	*Education in the Elem. School*	*Early Childhood Education*	*Biology and General Science*	*English Language and Literature*	*Industrial Arts Education*	*Mathematics*	*Chem., Physics, and General Science*	*Social Studies*	*Business Education*	*Music Education*	*Home Economics Education*	*Art Education*	*Men's Physical Education*	*Women's Physical Education*	*Reading Specialist—Elem. School**	*Percentile Rank*
99	757	744	774	789	713	806	789	783	737	794	762	781	704	748	796	99
95	716	702	743	754	658	751	768	740	680	706	710	740	663	699	737	95
90	692	684	717	730	639	728	753	724	660	683	686	711	641	669	711	90
85	677	663	696	718	627	710	732	709	642	667	668	690	626	653	689	85
80	664	654	686	706	617	699	715	694	627	657	656	677	610	636	683	80
75	653	643	675	694	597	688	698	683	617	645	639	663	597	620	675	75
70	641	635	663	685	588	678	686	671	606	636	629	647	582	609	654	70
60	622	620	646	664	574	658	670	649	589	619	612	622	566	584	628	60
50	603	605	631	645	557	643	655	628	573	596	594	603	549	568	612	50
40	583	581	612	626	524	623	640	609	550	572	575	584	527	555	589	40
30	561	562	592	607	501	601	620	591	530	550	557	563	505	533	566	30
25	549	552	579	595	485	589	608	580	517	538	544	552	493	523	554	25
20	535	539	569	584	472	576	592	565	503	520	523	541	476	512	520	20
15	518	520	554	572	454	553	578	547	477	508	509	531	461	488	506	15
10	497	506	522	549	438	531	545	520	452	494	484	509	444	471	485	10
5	456	479	483	517	390	495	499	470	420	468	449	457	422	435	458	5
1	381	398	440	448	343	423	434	395	362	408	383	396	375	388	383	1
No. of Srs.	4179	511	352	1402	265	640	250	1144	563	389	427	332	392	373	128*	

*Based on graduate students described in Table 4A.

Source: "Prospectus for School and College Officials," The National Teacher Examinations (Princeton, New Jersey: Educational Testing Service, 1970).

TABLE XIV

PERCENTILE RANKS FOR THE TEACHING AREA EXAMINATIONS (1969)

Percentile Rank	Education in the Elem. School	Early Childhood Education	Biology and General Science	English Language and Literature	Industrial Arts Education	Mathematics	Chem., Physics, and General Science	Social Studies	Business Education	Music Education	Home Economics Education	Art Education	Men's Physical Education	Women's Physical Education	Reading Specialist—Elem. School*	Percentile Rank
99	779	789	809	774	767	827	803	802	768	801	764	779	815	816	784	99
95	742	756	782	739	723	779	764	767	737	742	732	736	774	777	771	95
90	723	741	746	716	709	746	735	743	719	720	712	713	736	757	746	90
85	710	724	731	704	693	723	714	728	706	704	701	694	715	740	732	85
80	698	716	719	692	682	709	695	713	694	690	692	681	699	728	720	80
75	689	704	711	681	670	695	685	701	684	677	683	669	687	713	705	75
70	680	694	704	668	658	686	676	691	674	665	671	656	675	699	694	70
60	664	676	685	648	640	662	653	669	660	646	653	640	661	683	671	60
50	646	659	666	628	623	643	632	650	639	626	638	621	639	667	645	50
40	627	637	654	607	601	622	612	630	620	603	622	601	614	639	621	40
30	606	617	635	586	581	600	590	605	599	579	605	579	594	616	596	30
25	596	605	618	573	568	587	579	592	586	564	592	566	582	603	565	25
20	581	592	607	558	556	566	562	574	568	549	576	545	568	586	541	20
15	563	564	598	539	534	550	540	554	545	531	558	532	549	570	519	15
10	537	546	581	523	497	532	515	531	516	508	544	511	524	550	487	10
5	494	509	546	486	471	500	477	501	491	472	489	473	494	509	439	5
1	418	416	480	423	438	434	426	438	418	425	421	378	424	421	379	1
No. of Srs.	4179	511	352	1402	265	640	250	1144	563	389	427	332	392	373	128*	

*Based on graduate students described in Table 4A.

Source: "Prospectus for School and College Officials," The National Teacher Examinations (Princeton, New Jersey: Educational Testing Service, 1970).

TABLE XV

PERCENTILE RANKS FOR THE NTE
COMPOSITE SCORES (1969)

Percentile Rank	Education in the Elem. School	Early Childhood Education	Biology and General Science	English Language and Literature	Industrial Arts Education	Mathematics	Chem., Physics, and General Science	Social Studies	Business Education	Music Education	Home Economics Education	Art Education	Men's Physical Education	Women's Physical Education	Reading Specialist—Elem. School*	Percentile Rank
99	1520	1503	1556	1543	1442	1598	1572	1576	1454	1596	1504	1532	1528	1554	1586	99
95	1448	1444	1510	1478	1358	1508	1508	1498	1400	1425	1426	1447	1423	1445	1481	95
90	1405	1399	1453	1442	1342	1455	1465	1455	1361	1389	1389	1411	1371	1412	1437	90
85	1378	1379	1426	1412	1313	1427	1425	1429	1337	1359	1356	1391	1333	1384	1410	85
80	1355	1360	1401	1389	1288	1397	1410	1405	1321	1337	1337	1346	1291	1352	1388	80
75	1337	1345	1379	1371	1259	1380	1378	1378	1295	1317	1319	1331	1278	1331	1371	75
70	1317	1331	1363	1351	1245	1357	1357	1355	1281	1303	1304	1301	1261	1306	1354	70
60	1286	1294	1327	1312	1208	1319	1323	1319	1247	1265	1260	1250	1224	1270	1309	60
50	1249	1257	1296	1273	1181	1284	1289	1278	1218	1224	1233	1226	1194	1233	1255	50
40	1215	1228	1271	1236	1132	1251	1251	1241	1173	1175	1201	1191	1154	1199	1219	40
30	1172	1185	1237	1194	1081	1203	1219	1200	1132	1129	1162	1147	1102	1155	1139	30
25	1147	1164	1208	1175	1061	1182	1198	1180	1111	1103	1334	1122	1076	1135	1122	25
20	1124	1135	1187	1147	1028	1154	1161	1150	1075	1078	1102	1097	1055	1097	1083	20
15	1090	1101	1157	1120	1002	1120	1124	1116	1032	1053	1073	1067	1022	1066	1037	15
10	1045	1064	1107	1084	950	1077	1073	1057	967	1025	1031	1032	988	1035	980	10
5	959	994	1049	1016	865	998	994	977	910	954	932	958	926	942	909	5
1	796	817	919	883	793	888	866	840	791	831	833	773	799	823	787	1
No. of Srs.	4179	511	352	1402	265	640	250	1144	563	389	427	332	392	373	128*	

*Based on graduate students described in Table 4A.

Source: "Prospectus for School and College Officials," The National Teacher Examinations (Princeton, New Jersey: Educational Testing Service, 1970).

APPENDIX E

ELIGIBLE NON-PARTICIPATING INSTITUTIONS

ELIGIBLE NON-PARTICIPATING INSTITUTIONS

Alabama Agricultural and Mechanical College

Alcorn Agricultural and Mechanical College

Florida Agricultural and Mechanical University

Howard University

Southern University and Agricultural and Mechanical College

Winston-Salem State College

APPENDIX F

MEANS AND STANDARD DEVIATIONS

TABLE XVI

ENTRANCE EXAMINATION SCORES (ACT)

School Code	Mean	Standard Deviation
2.	12.24706	5.29128
3.	15.36585	2.37440
4.	14.14074	2.83412
6.	12.73729	2.93162
7.	14.84884	2.58281
8.	15.00000	3.89711
9.	13.08527	3.50005
11.	14.28358	3.75421
12.	13.29333	3.12070
13.	14.14062	2.40282
14.	13.45349	3.42216
15.	16.08365	2.31666
16.	13.58511	3.77429
17.	13.79894	3.29921
18.	14.21875	3.47983
19.	13.86735	2.46055
20.	13.64368	2.60579
21.	14.47337	2.57056
22.	14.75806	2.96804
23.	13.73196	2.99483
25.	14.50485	3.11501
26.	13.54545	4.32827

TABLE XVII

NATIONAL TEACHER EXAMINATIONS (COMMON)

School Code	Mean	Standard Deviation
1.	411.23828	54.40439
2.	450.04224	78.02834
3.	501.00000	37.40256
4.	492.02197	68.30728
5.	433.80542	48.00262
6.	444.35913	58.23137
7.	480.09082	50.89784
8.	466.70581	47.53123
9.	462.90747	78.21590
10.	421.25635	43.66232
11.	488.01318	71.18530
12.	458.98462	69.51047
13.	545.65625	63.24051
14.	479.40552	75.85628
15.	591.69946	57.84619
16.	504.83325	83.67809
17.	467.81470	66.95030
18.	476.54614	77.53209
19.	483.87744	61.32469
20.	468.29541	63.18430
21.	484.96411	61.14452
22.	489.07080	61.01033
23.	495.59790	67.37726
24.	416.03979	46.89339
25.	492.92212	62.66737
26.	483.67261	77.79013

TABLE XVIII

NATIONAL TEACHER EXAMINATIONS (OPTIONAL)

School Code	Mean	Standard Deviation
1.	460.33105	59.97105
2.	480.08472	73.02353
3.	553.33325	65.39423
4.	533.91992	58.11845
5.	463.57129	55.75525
6.	497.47925	58.77574
7.	511.25000	74.08783
8.	471.76465	55.36641
9.	492.07690	64.95888
10.	447.94849	50.48071
11.	515.29395	73.05945
12.	501.22339	74.02895
13.	592.34375	65.31310
14.	504.88867	70.45313
15.	619.39160	58.42380
16.	528.33325	81.93260
17.	482.97900	70.25880
18.	500.61523	75.76724
19.	521.26514	57.76117
20.	491.63623	57.43042
21.	523.77563	66.33946
22.	540.25635	61.74818
23.	528.55664	72.91513
24.	428.79980	52.11603
25.	522.42700	61.02798
26.	513.45435	70.34859

VITA

Howard Davis

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARISON OF ACADEMIC ACHIEVEMENT AND SUCCESS ON THE NATIONAL TEACHER EXAMINATIONS OF PHYSICAL EDUCATION MAJORS AND NON-MAJORS IN SELECTED PREDOMINANTLY NEGRO COLLEGES AND UNIVERSITIES

Major Field: Higher Education

Biographical:

Personal Data: Born May 5, 1930, in Westville, South Carolina, the son of Mr. and Mrs. Charlie Davis.

Education: Graduated from Mather Academy, Camden, South Carolina, 1950; B. S. Degree from Allen University, Columbia, South Carolina, 1953; M. A. Degree from New York University, New York, 1956. Attended Indiana University at Bloomington during the summers of 1959 and 1965. Completed requirements for the Doctor of Education degree, May, 1971.

Professional Experience: Head of Physical Education Department and Coach, Howard High School, Georgetown, South Carolina, 1956-1965; Assistant Recreation Director of the City of Georgetown, Georgetown, South Carolina, 1962-1964; Acting Chairman of the Physical Education Department and Chairman of the Faculty Athletic Committee at Maryland State College, Princess Anne, Maryland, 1964-1969; Head Basketball Coach 1965-66 and Assistant Director of the Maryland State College Upward Bound Program during the summers of 1965 and 1966; Graduate Assistant in the Department of Health, Physical Education and Recreation at Oklahoma State University during the fall of 1969; Head Resident in the Department of Single Student Housing during the spring of 1970 at Oklahoma State University.

Professional Organizations: National Education Association; American Association for Health, Physical Education, and Recreation; Oklahoma Association for Health, Physical Education, and Recreation; Central Intercollegiate Athletic

Association; Young Men's Christian Association; Phi Delta Kappa; The Maryland State College Men's Professional Club.