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EDUCATION: A FUNCTIONAL ANALYSIS.

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

THE DOCTORAL PROGRAM IN A SELECTED COLLEGE OF
EDUCATION: A FUNCTIONAL ANALYSIS

A DISSERTATION
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JAMES DONALD BEDNAR
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THE DOCTORAL PROGRAM IN A SELECTED COLLEGE OF
EDUCATION: A FUNCTIONAL ANALYSIS

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print. Filmed as received.**

UNIVERSITY MICROFILMS.

**TO: ANITA, MY LODESTAR
AND WIFE**

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THE DOCTORAL PROGRAM IN A SELECTED COLLEGE
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CHAPTER I

THE PROBLEM

Introduction

Higher education becomes increasingly important in our society each year. Degree-credit enrollment in institutions of higher education in the United States has increased every year since the early 1950's, rising from 2.1 million in 1951 to 6.9 million in 1968 with an estimated 7.6 million in 1970.¹ This trend reflects not only a substantial growth in the number of young persons of college age, but also an increased awareness of the importance of a college education. Each year since 1951 there has been a rise in the proportion of young people enrolled in college. In 1951 there were thirteen college students for each 100 persons eighteen to twenty-four years of age in the population; by 1968 there were thirty college students per 100 persons, an increase of

¹U.S. Department of Health, Education, and Welfare, Digest of Educational Statistics, 1970 Edition (Washington, D.C.: U.S. Government Printing Office, September, 1970), p. 61.

130.8 per cent.¹ These trends clearly indicate the increasing importance of higher education in our society.

Along with the greatly expanded college enrollment there has been a concomitant increase in earned degrees conferred. The increase in degrees conferred has particularly characterized the decade of the '60's. The latest actual national figures are for the academic year 1968-69 (984,129)², and they reflect an increase of 105.4 per cent over 1959-60 (479,215).³ The estimated figure for 1969-70 was 1,025,400 or an increase of 110.4 per cent over 1959-60.⁴ Oklahoma's record for the '60's approaches closely that for the nation as a whole. The number of bachelor's and higher degrees conferred in 1969-70 (15,792) was 94.2 per cent greater than the number conferred in 1959-60 (8,131).⁵

An important part of the total phenomenon is the increase in the number of degrees at the doctoral level (Ph.D. and Ed.D.). Nationally, from 1959-60 to 1968-69 there was an increase of 166.4 per cent (9,829 to 26,188).⁶ The

¹Ibid.

²Ibid., p. 88.

³U.S. Department of Health, Education, and Welfare, Earned Degrees Conferred: 1959-60 (Washington, D.C.: U.S. Government Printing Office, 1962), p. 3.

⁴H.E.W., Digest, p. 88.

⁵Adapted from data in the files of the Oklahoma State Regents for Higher Education.

⁶H.E.W., Digest, p. 88.

estimate for 1969-70 is 29,000.¹ This would represent an increase of 195 per cent for the period 1959-60 to 1969-70. Comparable figures show that from 1959-60 to 1968-69 Oklahoma registered an increase of 282.6 per cent (92 to 352).² From 1959-60 to 1969-70 the production of doctor's degrees (Ph.D. and Ed.D.) in Oklahoma increased 426.1 per cent (92 to 484).³

Background

The doctorate in American higher education has its origin in the German university as it developed during the first half of the nineteenth century. During this period, the German university had come to represent the scientific faculty par excellence. The seminar, the specialist's lecture, the laboratory, and the monographic study were introduced as indispensable means of training scholars. As a result, the German universities became world famous for their success in joining teaching and research and for their ambitious goal of producing, not just the practitioner, but the creative scholar and original investigator in every field of professional endeavor.⁴ In 1815 the forerunners of the

¹ Ibid.

² James D. Bednar, Degrees Conferred in Oklahoma Higher Education: An Analysis of the Ten-Year Period 1958-59 Through 1968-69 (Oklahoma City: Oklahoma State Regents for Higher Education, March, 1970), p. 38.

³ Adapted from data in the files of the Oklahoma State Regents for Higher Education.

⁴ Friedrich Paulsen, German Education, Past and Present (London: T. Fisher Unwin, 1908), p. 188-189.

American academic invasion--Edward Everett, George Ticknor, George Bancroft, and Joseph Green Gogwell--became the first Americans to receive the German Ph.D.¹ It has been estimated that more than ten thousand American students matriculated in German universities during the nineteenth century.²

By 1850 pressures were beginning to mount for change in American higher education. The increase in the body of knowledge, particularly in science, was creating demands which could not be satisfied through the classical curriculum of the American colleges. Knowledge was expanding much faster than the college program of studies.³ By introducing the high standards, teaching methodology, and scholarly apparatus of their model of excellence, the German university, the increasing number of German trained scholars in America aspired to reconstruct the entire system of American higher education.⁴

¹David B. Shumway, "Gottingen's American Students," American-German Review, III (June, 1937), 21-24 as cited by John S. Brubacher and Willis Rudy, Higher Education in Transition--An American History: 1636-1956 (New York: Harper and Brothers, 1958), p. 173.

²Everett Walters (ed.) Graduate Education Today (Washington, D.C.: American Council on Education, 1965), p. 6.

³Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill Co., Inc., 1960), p. 7.

⁴Richard T. Ely, "American Colleges and German Universities," Harper's Magazine, July, 1880, pp. 253-260 as cited by Brubacher and Rudy, Higher Education, p. 173.

During this period, America was becoming more urbanized and industrialized. There were needs of a practical, professional, and even vocational nature that the existing American system of elite colleges could not meet, but which were being well served in Germany by the German university.¹ In response to these pressures American higher education, in the German tradition, began to expand upward instead of outward, although both expansions eventually took place. Throughout this expansion and subsequent growth of the amorphous phenomenon in American higher education called graduate education, the one unifying principle has been the awarding of the doctorate, primarily the Ph.D.²

Yale became the first to establish work leading to the doctorate and to award the degree of Doctor of Philosophy. In 1860 the Corporation authorized the Scientific School to offer the Ph.D. so as to "retain in this country many young men, and especially students of science who now resort to German universities for advantages of study no greater than we are able to afford."³ In 1861 Ph.D.'s were awarded to three students who had already been studying in the department.⁴

¹Berelson, Graduate Education, p. 8.

²Charles M. Grigg, Graduate Education (New York: The Center for Applied Research in Education, Inc.), p. 59-60.

³George Wilson Pierson, Yale College: An Educational History, 1871-1921 (New Haven: Yale University Press, 1952), p. 704.

⁴Frederick Rudolph, The American College and University (New York: Vintage Books, 1962), p. 335.

Requirements for the first American Ph.D. called for two years of postbaccalaureate study, a final examination, a thesis "giving evidence of high attainment in the studies to which the student has attended, and an acquaintance with Latin and Greek if bachelor's degree did not show such knowledge."¹

Meanwhile, important changes were taking place in several other American universities. Harvard announced in 1872 that its faculty was prepared to offer formal graduate work for which the degrees Master of Arts, Doctor of Philosophy, and Doctor of Science would be offered. As at Yale, the Ph.D. was to be awarded after two years of postbaccalaureate study, the passing of an examination on the field of study, and the submission of a satisfactory dissertation. The S.D. was to be given to college graduates after three years of advance study (two years only for Harvard graduates) in at least two subjects, the completion of a thorough examination, and some contribution to science or attainment in some special scientific investigation. Harvard's first Ph.D. and S.D. were awarded in 1873.²

It was the establishment of Johns Hopkins in 1876, however, which permanently settled the issue of whether or

¹Ralph P. Rosenberg, "The First American Doctor of Philosophy Degree," Journal of Higher Education, (October, 1960), 388.

²Walters, Graduate Education, p. 10.

not with respect to graduate education and the doctorate in American higher education.¹ Within a few years Johns Hopkins had set the standards for graduate education in America. The level of scholarship and of research, the emphasis on freedom of teaching and research, and the excellence of the doctoral programs were soon copied at other universities, both those which had long been established and those which were just emerging.² Charles W. Eliot, while president of Harvard, summed up in 1902 the great contributions of Johns Hopkins:

I want to testify that the graduate school of Harvard University, started feebly in 1870 and 1871, did not thrive until the example of Johns Hopkins forced our faculty to put their strength into the development of our instruction for graduates. And what was true of Harvard was true of every other university in the land which aspired to create an advanced school of arts and sciences.³

The success of Johns Hopkins as a graduate institution proved to be the turning point in the establishment of the doctorate in American higher education. The doctorate flourished and demonstrated an amazing capacity to reproduce its own kind. Its successful adaptation and expansion verified that it was fulfilling an important function in American society.

¹Berelson, Graduate Education, p. 9.

²Walters, Graduate Education, p. 12.

³As quoted in W. Carson Ryan, Studies in Early Graduate Education: The Johns Hopkins, Clark University, The University of Chicago (New York: The Carnegie Foundation for the Advancement of Teaching, 1939), p. 4.

Although the doctorate in American higher education has become established and has flourished, it has always been surrounded by controversy. Its critics have viewed it as forcibly and unnaturally imported from Germany and imposed upon the traditional pattern of American higher education which was modeled on English institutions.¹ Despite the fact that the establishment and acceptance of the doctor's degree tend to belie the image of it as an unnatural hybrid, it has been one of the most severely criticized products of the American system of higher education.² Earl McGrath sees the doctor's degree and the influence of the German university as lying "at the root of most of our problems in higher education today."³ The controversy centers around the question of its purpose. In essence, what is the aim, the character, the function of this prototype of the German doctorate in American society? This question should be considered in the context of the degree's evolution as the child of science. It was conceived under the pressures of science. Its entire existence has been in an increasingly scientific

¹Moody E. Prior, "The Doctor of Philosophy Degree," Graduate Education Today, ed. Everett Walters, (Washington, D.C.: American Council on Education, 1965), p. 32.

²Oliver C. Carmichael, Graduate Education (New York: Harper and Brother, 1961), p. 122.

³Earl McGrath, The Graduate School and the Decline of Liberal Education (New York: Teachers College, Columbia University, 1959), p. 12.

and technological age.¹ It is not surprising, therefore, that the major critics of the doctorate have come primarily from the humanities and some of the social sciences.

Coupled with the doctorate's genus is the activity of research, the activity which quickly became its raison d'etre, its sine qua non in training the scholar.² The emphasis on independent investigation as a preparation for continued scholarly activity has been its most distinguishing characteristic. The Ph.D. has been protean with respect to the diversity of fields of study; it has, however, been relatively consistent in its approach to these fields.³

The academic requirements which have grown up around the Ph.D.--the specialized curriculum, the proficiency requirements, the examination in the field of study, and the dissertation, as well as the methodology, the lecture, the seminar, the prominence given to the library, the museum, and the laboratory--have as their aim the development of a learned scholar. The emphasis has been on "a depth of knowledge and on the cultivation of those tools and habits of mind which enable a man to go beyond what he has learned and to exercise independence in the understanding of his chosen branch of knowledge and in advancing it."⁴

¹Berelson, Graduate Education, p. 12.

²Ibid., p. 52.

³Prior, Graduate Education, p. 34.

⁴Ibid., p. 35.

Nevertheless, critics contend that the ideal purpose of the degree does not coincide with its actual, or primary, function in American society. At the same time the requirements and emphasis of the degree program still reflect the ideal purpose.¹ Considerable ambiguity about what the purpose or function of the degree is or should be arises from this presumed discrepancy. This predicament is best exemplified in the controversy about whether the doctoral program should train the student to teach or do research. On one hand the point is made that the Ph.D. is not a teaching degree. It does not certify, and was not created to certify, teaching ability.² On the other hand, over half of our Ph.D.'s go into teaching.³ In some subjects such as English literature, the proportion going into teaching has been as high as ninety per cent.⁴ In essence, the Ph.D. is by its heritage a research degree, while in fact it is fulfilling an important certification function in American higher education. Actually, the doctorate is more important if one plans to teach than if one plans to do research.⁵

¹F. W. Strothmann, The Graduate School Today and Tomorrow, Report on Behalf of the Committee of Fifteen, New York, December, 1955 (New York: Fund for the Advancement of Education, 1955), p. 4.

²Ibid., p. 12.

³Berelson, Graduate Education, p. 58.

⁴Strothmann, Graduate School, p. 13.

⁵Christopher Jencks and David Riseman, The Academic Revolution (Garden City, N.Y.: Doubleday and Company, Inc., 1968), p. 239.

This dilemma with respect to the actual and ideal function of the doctorate has persisted since its inception in American higher education. As early as 1909, Johns Hopkins inaugurated an experiment designed to alleviate this problem. The M.A. was established as a degree for college teachers; the Ph.D. would then be reserved for those who gave promise of making first-rate contributions to original research. Yale followed in 1910 by introducing a two-year M.A. intended for prospective college teachers.¹ These attempts to establish a teaching degree failed. Those planning to become college teachers demanded the Ph.D. They could not be indifferent to the logic of "no dissertation, no degree; no degree, no job."²

Having failed to set up an acceptable M.A. as a standard for college teachers, American universities found themselves saddled with a doctorate which was expected to fulfill two functions--teaching and research.³ It became increasingly clear that what William James had written about the tyranny of "the Ph.D. Octopus" contained an element of truth. A degree such as the Ph.D., he charged, stifles freedom of interest, does not guarantee success as a teacher, promotes

¹Brubacher and Rudy, Higher Education, p. 189.

²Ibid.

³Charles H. Judd, "Production of Good College Teaching," Association of American Colleges Bulletin, XV (March, 1929), 93-94, cited by Brubacher and Rudy, Higher Education, p. 189.

academic snobbery, and above all is a sham.¹ Then, as today, a large number of students taking the Ph.D. looked upon it as a professional degree, or more exactly as a "union card," necessary for teaching in a college or university.² Most graduate schools continued to orient the degree in the direction of potential research, even though various studies during the 1920's revealed that less than 20 per cent of American Ph.D.'s produced significant research after their dissertation.³

In an attempt to achieve a clearer distinction between a research degree and a teaching degree, Harvard introduced the Ed.D. in 1920. Although this degree has been widely copied, it has not helped to clarify the situation. Its status soon became as confused as that of the Ph.D. The Harvard Committee later reported that even at Harvard, the distinction between the Ph.D. and Ed.D. has been lost.⁴

From World War II to the present, the dilemma with respect to the function of the doctorate has progressively worsened. World War II brought significant changes to higher education. Perhaps most important was the exalted role of

¹William James, Memories and Studies (New York: Longmann, Green, and Co., 1911), p. 496.

²Carmichael, Graduate Education, p. 119.

³Brubacher and Rudy, Higher Education, p. 190.

⁴The Harvard Committee, Report of the Committee, The Graduate Study of Education (Cambridge, Mass.: Harvard University Press, 1966), p. 46-49.

research. During the war, research in every field of science (and in some social sciences) developed phenomenally. This did not stop after the war. Research was identified as a vital element in national security.¹

The effects on graduate education were widespread. The demand for Ph.D.'s increased. There was a demand for research itself from government and private industry as well as from within the universities. Equally important were the seemingly unlimited funds, both Federal and private, which accompanied this demand.²

By the 1950's another factor was having an effect upon the demand for Ph.D.'s. The college-age population seeking a college education was increasing every year. Degree-credit enrollment increased from 2.1 million in 1951 to 6.9 million in 1968.³ Equally important was the rise in the proportion of young people enrolled in college. The number of college students per 100 persons eighteen to twenty-four years of age increased from thirteen in 1951 to thirty in 1968, an increase of 130.8 per cent.⁴ This in turn created a new and heavy demand for college teachers. The annual production of Ph.D.'s could not satisfy this need and

¹Walters, Graduate Education, p. 22.

²Berelson, Graduate Education, p. 56.

³H.E.W., Digest, p. 61.

⁴Ibid.

the needs of government and industry as well.¹ Only in the late 1960's did the demand begin to decrease. The advent of the war babies and of sputnik at approximately the same time tended only to heighten the controversy of research versus teaching and to hinder the definition and clarification of the function of the doctor's degree in American society.

Some hold that the actual function of the doctorate is not to develop teachers or researchers per se, but to prepare professionals. From this viewpoint the emphasis is seen as preparing the individual for specific professional service. Those who take this position contend that the preparation is for professional service whether it be teaching, research, or whatever.² Unmistakably, there is a general lack of agreement as to the function of the doctorate.

As a result of this lack of agreement, the question of the function of the doctor's degree in American higher education remains a significant one. There is a need to clarify the degree's function. In order to investigate this general question, the study proposes to analyze the function of a particular doctoral program. The program is that of the College of Education, University of Oklahoma.³ The number

¹Walters, Graduate Education, p. 24-25.

²Prior, Graduate Education, p. 36-38.

³Technically the program may be viewed as one of the doctoral programs in the Graduate College, University of Oklahoma. In order to distinguish this program from the other doctoral programs in the Graduate College, it was designated as the doctoral program of the College of Education.

of doctor's degrees conferred through this program increased 326.7 per cent from 1959-60 (fifteen) to 1969-70 (sixty-four).¹ During this period, the College of Education granted a total of 415 doctor's degrees.² This is significant in light of the fact that there were only 2,866 produced in the entire state of Oklahoma during the same period.³ This program is, therefore, representative of the growth and expansion experienced at the state and national levels during the decade of the 1960's.

In a manner similar to that described earlier for the doctoral program in general, some may view this particular program primarily in the German tradition; that is, it should result in the learned scholar with a depth of knowledge, the tools and habits of mind, and the independence of understanding which would enable the individual to do independent investigation thereby advancing knowledge. Others may emphasize professionalization directed toward preparing the individual for specific professional service as the primary function of the program. Still others may view its function as primarily providing the individual with the skills to acquire and transmit a fund of specialized knowledge, skills essential for effective teaching.

¹Adapted from data in the files of the College of Education, University of Oklahoma.

²Ibid.

³Adapted from data in the files of the Oklahoma State Regents for Higher Education.

As in the case of the doctoral program in general, there is a need to clarify this program's function in terms of its general consequences or end results. The study proposes to do this by assessing the relative importance of sixteen possible outcomes as perceived by selected individuals who have completed the program.

Statement of Problem

The problem of the study is to assess the perceptions of selected individuals who have completed the doctoral program with respect to what the actual outcomes of the doctoral program were as opposed to what they should have been as perceived by these individuals.

Questions Under Investigation

The study is concerned with the following questions:

1. The degree of discrepancy between "what should have been" and "what was" the importance of each of sixteen items as outcomes of the doctoral program for the aggregate of all participants.
2. The degree of discrepancy between "what should have been" and "what was" the importance of each of sixteen items as outcomes of the doctoral program for each Area of Specialization.

In addition, the data were treated in order to obtain information concerning answers to the following related questions:

3. The degree to which each Area of Specialization rated each of the "what should have been" items significantly different than the other Areas of Specialization.

4. The degree to which each Area of Specialization rated each of the "what was" items significantly different than the other Areas of Specialization.

Finally, the data from the General Information Sheet were treated in order to obtain information concerning the following question:

5. The degree of relationship among the variables of Area of Specialization, Professional Position, Income, and Sex of the participants.

Organization

The problem of the study and the questions under investigation are presented in Chapter I. The methodology used to answer these questions is described in Chapter II. The results of the data analyses of the general information or "face sheet" including the degree of relationship among the Area of Specialization, Professional Position, Income, and Sex of the participants are presented in Chapter III. The results of the data analyses of the degree of discrepancy between "what should have been" and "what was" for the aggregate and by Area of Specialization are reported in Chapter IV. The results of the data analyses of the degree to which each Area of Specialization rated the outcomes significantly different than the other Areas of Specialization are also included in Chapter IV. Chapter V contains the summary, conclusions, and implications drawn from Chapters III and IV.

CHAPTER II

METHODOLOGY

Design

In Chapter I the purpose of the study was stated as an analysis of the function of the doctoral program of the College of Education in terms of its general consequences or end results. In order to conduct the analysis it was essential to assess the outcomes of the program and the criteria against which the outcomes could be evaluated. The problem of the study, therefore, was to assess the perceptions of selected individuals who have completed the doctoral program with respect to what the actual outcomes of the doctoral program were as opposed to what they should have been as perceived by these individuals.

In order to research the problem of the study, an opinionnaire (Appendix D) was mailed to selected individuals who had completed the doctoral program in the College of Education. The opinionnaire was designed to determine the extent to which these individuals perceived each of sixteen items as important outcomes of the doctoral program. They were asked, "What was the importance of the following items as outcomes of the doctoral program?" This provided an

assessment of the perceptions of these individuals with respect to the outcomes of the program.

In addition, they were asked to indicate the extent to which each of the items should be important outcomes of the doctoral program. Specifically, they were asked, "What should have been the importance of the following items as outcomes of the doctoral program?" This provided the criteria against which the outcomes of the program could be evaluated and an analysis of the doctoral program of the College of Education could be made.

Population

The population of the study was comprised of the 415 persons who received the doctor's degree from the College of Education, University of Oklahoma, for the period 1959-60 through 1969-70. It was determined that responses from a minimum sample of 208 (over fifty per cent) would be required for the purposes of the study.

Identification and Selection of Sample

The identification of the 415 recipients was conducted by using information in the files of the College of Education. The primary source was the commencement bulletins.

The selection of the sample was determined by two factors: the necessity of obtaining a correct address and a useable response for every recipient who would participate in the study. Addresses were obtained on 300 of the 415

recipients. The primary sources of these addresses proved to be the files of the College of Education and of the Alumni Office, as well as the College of Education faculty.

The first request was mailed to the 300 recipients for which addresses had been obtained. Each request contained a letter of introduction (Appendix A); a general information (face) sheet (Appendix B); instructions for the opinionnaire (Appendix C); an opinionnaire (Appendix D); and a stamped envelope addressed to the investigator.

Three weeks after the first request, a second request was sent. It was identical to the first with the exception that in the upper right hand corner of the letter of introduction, written in red ink, were the words "Second Request." The response to the first request was 209 and to the second, forty-four, for a total of 253. Of these 253 responses, 247 were usable for the purposes of the study. Consequently, the size of the sample selected proved to be 247.

Instrumentation

The instrument used in the study to assess the importance of certain items as outcomes of the doctoral program was a modification of The Task of Public Education developed by Downey, Seager and Slagle.¹ This instrument grew out of an attempt to identify the elements of the task or function

¹Lawrence W. Downey, The Task of Public Education (Chicago: Midwest Administrative Center, The University of Chicago, 1960), p. 61-88.

of public education in America. The identification was achieved through a review and synthesis of many notable statements of the task from the time of Horace Mann to the present. Thus identified, they were refined and ordered into a conceptual framework. The framework, in turn, guided the construction of an instrument through which respondents were permitted to consign importance to the various elements.

The Synthesis

The device employed in the synthesis was a simple grid, listing along its vertical axis the names of the authors or agencies whose contributions were included, and along its horizontal axis the classifications into which the various elements were grouped. These classifications were: (1) The intellectual; (2) the social; (3) the personal; and (4) the productive. When redundancy was eliminated, the following emerged as the synthesized statement of the task of public education:¹

In the "Intellectual Development" column the four elements which appeared with regularity were:

1. Command of fundamental processes.
2. Fundamental skills of communication.
3. Intellectual curiosity and eagerness for life-long learning.
4. Ability to think and evaluate constructively and creatively.

¹Ibid., p. 20-26.

The "Social Development" column also produced four elements, each one emphasizing a particular aspect of man's relationships with other people:

1. Civic rights and responsibilities and knowledge of American institutions.
2. Cultural heritage--common core of traditions and values.
3. Cooperation in living and working together.
4. Awareness of our relationship with the world community.

The "Personal Development" elements synthesized into five apparently unique and specific aspects of the individual's own development and well-being:

1. Physical and mental health.
2. Ethical behavior based on a sense of moral and spiritual values.
3. Effective work habits and self-discipline.
4. Aesthetic appreciation and self-expression in the arts.
5. Wise use of time, including constructive leisure pursuits.

Of the twenty-seven persons and organizations listed on the grid, eleven, including the American Federation of Teachers and the White House Conference, did not list any elements under "Productive Development." However, three such elements appeared with regularity in the other sixteen formulations:

1. Occupational information and training.
2. Homemaking--skill and satisfaction in home and family living.
3. Skills for carrying on the economic life of society.

The above synthesis was adopted as a preliminary statement. The ideas for the conceptualizing process follow:

The Conceptual Framework

Through the process of logic and simplification of the above synthesis, the basic elements of education's task were restated in simple, mutually exclusive unit functions which together made up the total task (Appendix E). Although the sixteen dimensions are not themselves mutually exclusive, they tend to become so within the context of their categorization.

This framework claims to include most of the important elements of education's task, as suggested by previous formulation; it claims that no one element is duplicated by any other; and it claims that each item is stated in such definitive terms that there is little chance of overlapping or ambiguity among items.

It should be noted that education's task is stated in terms of final products or outcomes. This particularly lends itself to the basic purpose of the study--to analyze the function of the doctoral program by establishing its general consequences or outcomes for selected individuals who have completed the program.

The Instrument

The next step was to proceed from the framework to the development of an instrument which would contain indications of the dimensions defined. An instrument was developed with respect to college (Appendix F). The elements were

randomly distributed so that their order would not affect the rating of the dimensions. This instrument was developed for the public. Its developers felt that the issues of the framework had to be rewritten at a vocabulary level understood by the general public. Because the study with respect to the doctoral program of the College of Education will deal with professional educators, a more sophisticated instrument was utilized. The modified version of the opinionnaire is illustrated in Figure 1.

The modified instrument was designed to measure the perceptions of the individual with respect to the importance of each item as an outcome of the doctoral program. The instrument was designed to measure these perceptions from two perspectives--ideally, what they should have been and actually, what they were. The purpose was to determine what the actual function of the program was, what it should be ideally, and to identify the areas of significant discrepancy between the two.

Each individual was asked to indicate the extent to which a given outcome was important as an outcome of the doctoral program. He was also asked to indicate the extent to which it should have been important. In addition to having an indication of the ideal as well as the actual outcomes of the doctoral program, this distinction provided some protection against the danger that the indications of the items' importance as actual outcomes would be simple an expression

DOCTORAL PROGRAM

What Should Have Been the Importance
of the Following Items as Outcomes
of the Doctoral Program?

What Was the Importance of the
Following Items as Outcomes of
the Doctoral Program?

WHAT SHOULD HAVE BEENWHAT WAS

- | | | |
|-----|--|-----|
| ___ | 1. Competency in using skills necessary for acquiring knowledge and skill in transmitting this knowledge through oral and written communication. | ___ |
| ___ | 2. An appreciation and enjoyment of cultural activities particularly with respect to leisure pursuits. | ___ |
| ___ | 3. An intelligent and responsible exercise of citizenship. | ___ |
| ___ | 4. Knowledge and understanding concerning bodily health and development. | ___ |
| ___ | 5. Loyalty to America and an understanding and appreciation of the postulates and principles of democratic processes. | ___ |
| ___ | 6. Specialized training resulting in a professional position. | ___ |
| ___ | 7. A continuing desire for knowledge--intellectual curiosity and an inquiring mind. | ___ |
| ___ | 8. Emotional stability and maturity which enables one to cope with reality and new situations. | ___ |
| ___ | 9. Ability to carry out an appropriate family role and perform those tasks related to family life. | ___ |
| ___ | 10. The tools and habits of mind to make independent judgments--the ability to think and evaluate constructively and creatively. | ___ |
| ___ | 11. Ethical and moral integrity in one's own thinking and relationships with others. | ___ |
| ___ | 12. A feeling of respect and tolerance for other people and the ability to live and work in harmony. | ___ |
| ___ | 13. Ability to function effectively economically--to make good consumer choices with respect to buying, selling, and investment. | ___ |
| ___ | 14. Knowledge and understanding of world affairs and of the need for intelligent and responsible interrelationships among peoples and nations. | ___ |
| ___ | 15. Information and guidance for wise career choice and professional advancement. | ___ |
| ___ | 16. Possession of a fund of information in a field of specialization and an understanding of the major concepts in related fields of knowledge. | ___ |

1 item should be marked ++ -- Of most importance of all items
 1 item should be marked 00 -- Of least importance of all items
 4 items should be marked + -- Of great importance
 4 items should be marked 0 -- Of little importance
 6 items should have no marks -- Of medium importance

Fig. 1--The Modified Opinionnaire

of personal preferences.

Upon examination, it became evident that some of the items of the opinionnaire were irrelevant with respect to the doctoral program. The purpose of utilizing the opinionnaire, however, was to provide the individual respondent with a synthesis of possible outcomes of the doctoral program. It was the responsibility or privilege of the respondent to indicate the extent of the importance of each item as an outcome of the doctoral program. If for example "bodily health and development" was unimportant as an outcome of the doctoral program, the individual could indicate it as such. The purpose of the opinionnaire, as stated previously, was to provide most of the possible outcomes of the doctoral program in order that the individual could indicate his perceptions as to the importance of each.

In the original T.E.P. opinionnaire, the Q-sort methodology devised by William Stephenson¹ was used. With such a technique, the items are presented to the subject on a deck of cards; and he is asked to place the items in order of his preference into categories according to a forced distribution. The modified form of the Q-sort technique used in the study is one developed by Jackson,² with the consulting

¹William Stephenson, The Study of Behavior: Q-Sort Technique and Its Methodology (Chicago: University of Chicago Press, 1953).

²David M. Jackson, "Development of a Measure of Orientation Toward Core and Subject Curriculum Theories," School Review, XLIV (1956), 250-255.

help of Stephenson.

Three factors of this technique give it special appeal for this study: (1) it does not violate any of the assumptions of the Q-sort technique; (2) the sixteen items of the opinionnaire can be printed on one sheet of paper with appropriate space for hand marking of symbols representing the five levels of importance; and (3) analysis of the data will be facilitated by the ease of coding the instrument.

Instructions for Opinionnaire

Participants in the study were given the following instructions:

You are being asked to indicate your perception of the importance of the following items as outcomes of the doctoral program. This is not a test of your knowledge or skill; there are no right or wrong answers or responses. You are merely asked to indicate your perception as to what should have been the importance of these items as outcomes of the doctoral program and what actually was the importance of these items as outcomes of the doctoral program.

PLEASE DO THE FOLLOWING:

1. Read the list of items and ask yourself the question, "Which outcomes should have been important and which should not have been important?"
2. Indicate the importance of these items in the following manner (in the left column):
 - a. Place a plus mark (+) in the space opposite those five (5) outcomes that you think should have been most important.
 - b. Place a zero (0) in the space opposite those five (5) outcomes that you think should have been least important.

- c. That means that there should be six outcomes that are not marked.
 - d. Now go back to those items you have marked with a plus mark (+) and place another plus mark in the space representing the outcome that you think should have been the most important outcome of all. (++)
 - e. Then go to the items you have marked with a zero (0) and place another zero in the space representing the outcome that you think should have been the least important of all. (00)
3. Now re-read the list of items and indicate what the importance actually was of these outcomes in the doctoral program in the following manner (in the right column):
- a. Place a plus mark (+) in the space opposite the five (5) outcomes that were most important.
 - b. Place a zero (0) in the space opposite the five (5) outcomes that were least important.
 - c. Place another plus mark (++) in the space opposite the outcome that was of greatest importance.
 - d. Place another zero (00) in the space opposite the outcome that was of least importance.

Psychological thought has used the concept of the "ideal" self contrasted with the "actual" self as perceived by the individual to define and evaluate such a vague and elusive term as "mental health."¹ Bennis suggests such an approach in developing the concept of "organizational health."² The approach to criteria employed in the study, therefore, is not new or unique. The contrast of "actual" with "ideal" as a means of analysis and evaluation is not exhaustive. It is, however, a realistic, workable approach to the problem.

¹Marie Jahoda, Current Concepts of Positive Mental Health (New York: Basic Book, Inc., 1958), p. 4.

²Warren G. Bennis, Changing Organizations (New York: McGraw-Hill Co., Inc., 1966), p. 36-41.

CHAPTER III

PRESENTATION OF RESULTS: RELATIONSHIPS AMONG AREA OF SPECIALIZATION, PROFESSIONAL POSITION, INCOME, AND SEX

The purpose of Chapter III is to present the general information obtained from the respondents in order to clarify the function of the doctoral program. Two hundred and forty-seven recipients of the doctor's degree participated in the study. Their average age at the time the study was conducted was 41.8 years. Their average age at the time they received the degree was 38.0 years. The responses to four variables on the General Information Sheet (Appendix B) were analyzed. They were: Area of Specialization, Professional Position, Income, and Sex. The chapter is organized as follows:

1. A presentation of the variables;
2. An analysis of the relationships among the variables and;
3. Summary of the findings.

The Variables

Area of Specialization

The information in Table 1 revealed that the sample was distributed into thirteen Areas of Specialization. The largest number was in the area of General Administration which accounted for 52 (21.1 per cent) of the sample, followed by Secondary (Secondary and Secondary Administration) with 49 (19.8 per cent); Elementary, 32 (13.0 per cent); and Business Education, 25 (10.1 per cent). These four Areas of Specialization accounted for 70 per cent (158) of the 247 participants.

TABLE 1

AREA OF SPECIALIZATION

Area of Specialization	Number	Percentage
Elementary	32	13.0
Secondary	49	19.8
General Administration	52	21.1
Counseling and Guidance	11	4.5
Educational Psychology	20	8.1
Educational Media	7	2.8
Higher Education	13	5.3
History and Philosophy	7	2.8
Special Education	16	6.5
Business Education	25	10.1
Science Education	9	3.6
Mathematics Education	4	1.6
Other	2	0.8
Total	247	100.0

Professional Position

The professional positions held by the respondents were analyzed from three perspectives. They were:

1. Professional Position by Type (A)
 - a. Administration
 - b. Teaching
 - c. Research
 - d. Counseling
 - e. Other
 - f. Administration and Teaching
 - g. Teaching and Research
 - h. Other Combinations
2. Professional Position by Sector (B)
 - a. Elementary and/or Secondary
 - b. Higher Education
 - c. Educational or Service Agency
3. Professional Position by Institutional Type (C)
 - a. Junior College
 - b. Senior College
 - c. University

In the discussion and tables that follow, Professional Position by Type will often be referred to as Professional Position (A), by Sector as Professional Position (B), and by Institutional Type as Professional Position (C).

Professional Position by Type. The information in Table 2 disclosed that in the sample 99 (40.1 per cent) were in Teaching, 98 (39.7 per cent) were in Administration, and 31 (12.6 per cent) were in a combination of the two. It was obvious that among the doctoral graduates who comprised the sample of the study, almost all (92.4 per cent) found themselves in positions involving Administration or Teaching or both.

TABLE 2

PROFESSIONAL POSITION BY TYPE (A)

Professional Position (A)	Number	Percentage
Administration	98	39.7
Teaching	99	40.1
Research	1	0.4
Counseling	7	2.8
Other	3	1.2
Administration and Teaching	31	12.6
Teaching and Research	4	1.6
Other Combination	4	1.6
Total	247	100.0

Professional Position by Sector. The information in Table 3 concerned the Sectors in which the respondents held their Professional Positions. Almost three-fourths, 180 (72.9 per cent), were in Higher Education. This compared with 46 (18.6 per cent) for Elementary and/or Secondary and 21 (8.5 per cent) for Educational or Service Agencies.

TABLE 3

PROFESSIONAL POSITION BY SECTOR (B)

Professional Position (B)	Number	Percentage
Elementary and/or Secondary	46	18.6
Higher Education	180	72.9
Educational or Service Agency	21	8.5
Total	247	100.0

Professional Position by Institutional Type. Of those who were in Higher Education (180), over half, 97 (53.9 per cent), were at the University level (Table 4). Seventy-one (39.4 per cent) were at the Senior College level and 12 (6.7 per cent) at the Junior College level.

TABLE 4
PROFESSIONAL POSITION BY INSTITUTIONAL TYPE (C)

Professional Position (C)	Number	Percentage
Junior College	12	6.7
Senior College	71	39.4
University	97	53.9
Total	180	100.0

Income

The median income was \$16,590. The information in Table 5 showed that the greatest concentration, 118 (47.8 per cent), appeared at the \$15,000 to \$19,999 level. The \$10,000 to \$14,999 level was next with 81 (32.8 per cent). Therefore, 80.6 per cent had an annual income within the range of \$10,000 to \$19,999.

Sex

Respondents were asked to indicate their sex. The sample included 213 (86.2 per cent) males and 34 (13.8 per cent) females.

TABLE 5

INCOME

Income ^a	Number	Percentage
Below \$10,000	5	2.0
\$10,000-14,999	81	32.8
\$15,000-\$19,999	118	47.8
\$20,000-\$24,999	33	13.4
\$25,000-\$29,999	9	3.6
Over \$30,000	1	0.4
Total	247	100.0

^aMedian income was \$16,590.

The Degree of Relationship Among Area of
Specialization, Professional Position,
Income, and Sex

The purpose of this section is to present the results of an analysis of the statistical significance of the relationships among the variables of Area of Specialization, Professional Position, Income, and Sex. A summary of the significance of these variables and their relationships will be presented in the following section.

Chi Square (χ^2)

The Chi Square test was used to describe statistically the relationship among the variables of Area of Specialization, Professional Position, Income, and Sex. Siegel has stated, "When frequencies in discrete categories (either nominal or ordinal) constitute the data of research, the χ^2

test may be used to determine the significance of the differences among k independent group."¹ The test is usually used to determine if two groups differ with respect to some characteristic and therefore with respect to the relative frequency with which group members fall in several categories. The number of cases from each group that fall in the various categories are counted and compared with the proportion of cases from one group in the various categories with the proportion of cases from the other group.² A high χ^2 (the statistic used in the test) would indicate that the difference among the variables under consideration signifies genuine population differences, while a low χ^2 would indicate merely chance variations such as are to be expected among samples from the same population. This statistical technique was appropriate for the desired analyses as the data were ordinal and thereby required the use of a non-parametric statistic.³

Throughout the data analyses of the study, a level of significance equal to or less than .05 ($p \leq .05$) was adopted. This was in keeping with the common convention for statistical analyses of this type.⁴

¹Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Co., Inc., 1956), p. 175.

²Ibid.

³Ibid., p. 21-29.

⁴George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Co., Inc., 1966), p. 164.

Area of Specialization and Professional
Position by Type (A)

The information in Table 6 disclosed that the Type of Professional Position held by the participants tended to vary with their Area of Specialization. For example, 61.2 per cent, 65.4 per cent, and 61.5 per cent of those who specialized in Secondary, General Administration, and Higher Education, respectively, were in Administration. On the other hand, 75.0 per cent (Math Education), 66.7 per cent (Science Education), 65.7 per cent (Elementary), 57.1 per cent (History and Philosophy), 56.0 per cent (Business Education), and 55.0 per cent (Educational Psychology) were in Teaching.

It is of interest to note that research per se as a Professional Position was a non-entity (0.4 per cent). The combination of Teaching and Research accounted for an additional 1.6 per cent.

When a 13 x 8 (Area of Specialization x Professional Position A) Chi Square was performed, the relationship between Area of Specialization and Professional Position by Type was significant at the 0.001 level (Table 7). Although Teaching and Administration were the two predominant Types of Professional Positions, the Area of Specialization was a significant variable as to the Type of Professional Position held by the respondents.

TABLE 6

THE DEGREE OF RELATIONSHIP BETWEEN AREA OF SPECIALIZATION
AND PROFESSIONAL POSITION BY TYPE (A)

Professional Position (A)	Elementary		Secondary		General Adminis- tration		Counseling and Guidance		Educational Psychology		Educational Media		Higher Education	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adminis- tration	5	15.6	30	61.2	34	65.4	4	36.4	6	30.0	--	--	8	61.5
Teaching	21	65.7	15	30.6	10	19.2	--	--	11	55.0	1	14.3	5	38.5
Research	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Counseling	--	--	--	--	--	--	3	27.3	1	5.0	--	--	--	--
Other	1	3.1	--	--	--	--	--	--	1	5.0	--	--	--	--
Administra- tion and Teaching	4	12.5	2	4.1	7	13.5	3	27.3	1	5.0	5	71.4	--	--
Teaching and Research	--	--	2	4.1	--	--	--	--	--	--	1	14.3	--	--
Other Com- binations	1	3.1	--	--	1	1.9	1	9.0	--	--	--	--	--	--
Total	32	100.0	49	100.0	52	100.0	11	100.0	20	100.0	7	100.0	13	100.0

TABLE 6--Continued

Professional Position (A)	History and Philosophy		Special Education		Business Education		Science Education		Math Education		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adminis- tration	2	28.6	3	18.8	5	20.0	--	--	1	25.0	--	--
Teaching	4	57.1	7	43.7	14	56.0	6	66.7	3	75.0	2	100.0
Research	--	--	--	--	1	4.0	--	--	--	--	--	--
Counseling	--	--	2	12.5	--	--	1	11.1	--	--	--	--
Other	1	14.3	--	--	--	--	--	--	--	--	--	--
Administra- tion and Teaching	--	--	3	18.8	4	16.0	2	22.2	--	--	--	--
Teaching and Research	--	--	--	--	1	4.0	--	--	--	--	--	--
Other Com- binations	--	--	1	6.2	--	--	--	--	--	--	--	--
Total	7	100.0	16	100.0	25	100.0	9	100.0	4	100.0	2	100.0

TABLE 7

CHI SQUARE PERFORMED FOR THE RELATIONSHIP
BETWEEN AREA OF SPECIALIZATION AND
PROFESSIONAL POSITION BY TYPE (A)

Variables	χ^2	df	P
Area of Specialization and Professional Position (A)	169.555	84	0.001

Area of Specialization and Professional
Position by Sector (B)

The information in Table 8 revealed that almost three-fourths (72.9 per cent) of the participants were in Higher Education. Over four-fifths of the respondents in Elementary (81.2 per cent), Higher Education (84.6 per cent), History and Philosophy (85.7 per cent), Science Education (88.9 per cent), and Math Education (100.0 per cent) were in Higher Education.

While the majority of the respondents in each Area of Specialization were in Higher Education, differences did exist between the Areas as to the relative frequency in which the respondents appeared in the three Sectors. For example, seven of the thirteen Areas of Specialization had no one in the Elementary and/or Secondary Sector. Four of the Areas had no one in the Educational or Service Agency Sector. When a 13 x 3 (Area of Specialization x Professional Position B) Chi Square was performed, the relationship between Area of Specialization and Professional Position by Sector was significant at the 0.05 level (Table 9).

TABLE 8

THE DEGREE OF RELATIONSHIP BETWEEN AREA OF SPECIALIZATION
AND PROFESSIONAL POSITION BY SECTOR (B)

Professional Position (B)	Elementary		Secondary		General Adminis- tration		Counseling and Guidance		Educational Psychology		Educational Media		Higher Education	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary and/or Secondary	6	18.8	14	28.6	19	36.5	7	18.8	20	100.0	--	--	--	--
Higher Education	26	81.2	33	67.3	28	53.9	7	18.8	20	100.0	11	100.0	11	84.6
Educational or Service Agency	--	--	2	4.1	5	9.6	2	18.8	20	100.0	--	--	2	15.4
Total	32	100.0	49	100.0	52	100.0	11	100.0	20	100.0	7	100.0	13	100.0

TABLE 8--Continued

Professional Position (B)	History and Philosophy		Special Education		Business Education		Science Education		Math Education		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary and/or Secondary	--	--	2	12.5	--	--	--	--	--	--	--	--
Higher Education	6	85.7	11	68.8	23	92.0	8	88.9	4	100.0	2	100.0
Educational or Service Agency	1	14.3	3	18.7	2	8.0	1	11.1	--	--	--	--
Total	7	100.0	16	100.0	25	100.0	9	100.0	4	100.0	2	100.0

TABLE 8

THE DEGREE OF RELATIONSHIP BETWEEN AREA OF SPECIALIZATION
AND PROFESSIONAL POSITION BY SECTOR (B)

Professional Position (B)	Elementary		Secondary		General Adminis- tration		Counseling and Guidance		Educational Psychology		Educational Media		Higher Education	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary and/or Secondary	6	18.8	14	28.6	19	36.5	2	18.2	3	15.0	--	--	--	--
Higher Education	26	81.2	33	67.3	28	53.9	7	63.6	14	70.0	7	100.0	11	84.6
Educational or Service Agency	--	--	2	4.1	5	9.6	2	18.2	3	15.0	--	--	2	15.4
Total	32	100.0	49	100.0	52	100.0	11	100.0	20	100.0	7	100.0	13	100.0

TABLE 8--Continued

Professional Position (B)	History and Philosophy		Special Education		Business Education		Science Education		Math Education		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary and/or Secondary	--	--	2	12.5	--	--	--	--	--	--	--	--
Higher Education	6	85.7	11	68.8	23	92.0	8	88.9	4	100.0	2	100.0
Educational or Service Agency	1	14.3	3	18.7	2	8.0	1	11.1	--	--	--	--
Total	7	100.0	16	100.0	25	100.0	9	100.0	4	100.0	2	100.0

TABLE 9

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
AREA OF SPECIALIZATION AND PROFESSIONAL
POSITION BY SECTOR (B)

Variables	χ^2	df	P
Area of Specialization and Professional Position (B)	41.371	24	0.05

In summary, the majority of the respondents in each Area of Specialization were in the Higher Education Sector. The Area of Specialization was, however, a significant variable as to the relative frequency the respondents appeared in the three Sectors.

Area of Specialization and Professional Position
by Institutional Type (C)

Six Areas of Specialization had a relatively high percentage of their graduates in Higher Education at the University level (Table 10). They were, in descending order, Counseling and Guidance (85.7 per cent), Educational Psychology (78.6 per cent), Elementary (73.1 per cent), Special Education (72.7 per cent), Educational Media (71.4 per cent), and History and Philosophy (66.6 per cent). On the other hand, Science Education (87.5 per cent), Business Education (60.9 per cent), and Secondary (51.5 per cent) had the majority of their graduates in Higher Education at the Senior College level. Only 6.7 per cent of those in Higher Education were at the Junior College level. General Administration

TABLE 10

THE DEGREE OF RELATIONSHIP BETWEEN AREA OF SPECIALIZATION
AND PROFESSIONAL POSITION BY INSTITUTIONAL TYPE (C)

Professional Position (C)	Elementary		Secondary		General Adminis- tration		Counseling and Guidance		Educational Psychology		Educational Media		Higher Education	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Junior College	--	--	1	3.0	5	17.9	--	--	--	--	--	--	1	9.0
Senior College	7	26.9	17	51.5	11	39.3	1	14.3	3	21.4	2	28.6	4	36.5
University	19	73.1	15	45.5	12	42.8	6	85.7	11	78.6	5	71.4	6	54.5
Total	26	100.0	33	100.0	28	100.0	7	100.0	14	100.0	7	100.0	11	100.0

TABLE 10--Continued

Professional Position (C)	History and Philosophy		Special Education		Business Education		Science Education		Math Education		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Junior College	1	16.7	2	18.2	1	4.3	--	--	1	25.0	--	--
Senior College	1	16.7	1	9.1	14	60.9	7	87.5	2	50.0	1	50.0
University	4	66.6	8	72.7	8	34.8	1	12.5	1	25.0	1	50.0
Total	6	100.0	11	100.0	23	100.0	8	100.0	4	100.0	2	100.0

with five had the highest number at the Junior College level.

When a 13 x 3 (Area of Specialization x Professional Position C) Chi Square was performed, the relationship between Area of Specialization and Professional Position by Institutional Type was significant at the 0.01 level (Table 11). Area of Specialization was, therefore, a significant variable as to the Institutional Type in which the respondents in Higher Education held their Professional Positions.

TABLE 11

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
AREA OF SPECIALIZATION AND PROFESSIONAL
POSITION BY INSTITUTIONAL TYPE

Variables	χ^2	df	P
Area of Specialization and Professional Position (C)	42.996	24	0.01

Professional Positions by Type (A)
and by Sector (B)

The information in Table 12 revealed that the Type of Professional Position held by the participants tended to vary with the Sector in which it was held. For example, of the participants in Higher Education, only 26.1 per cent were in Administration, while 84.7 per cent of those in Elementary and/or Secondary and 57.1 per cent in Educational or Service Agencies were in Administration. On the other hand, 51.6 per cent of those in Higher Education were in Teaching compared

with 8.7 per cent and 9.5 per cent for Elementary and/or Secondary and Educational or Service Agencies, respectively. At the same time, 23.8 per cent of the participants in Educational or Service Agencies were in Counseling contrasted with 2.2 per cent (Elementary and/or Secondary) and 0.5 per cent (Higher Education). In addition, all of the participants in the combinations of Administration and Teaching and Teaching and Research were in Higher Education.

TABLE 12

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY TYPE (A) AND PROFESSIONAL
POSITION BY SECTOR (B)

Professional Position	Elementary and/or Secondary		Higher Education		Educational or Service Agency	
	No.	%	No.	%	No.	%
Administration	39	84.7	47	26.1	12	57.1
Teaching	4	8.7	93	51.6	2	9.5
Research	--	--	1	0.5	--	--
Counseling	1	2.2	1	0.5	5	23.8
Other	1	2.2	1	0.5	1	4.8
Administration and Teaching	--	--	31	17.2	--	--
Teaching and Research	--	--	4	2.4	--	--
Other Combi- nations	1	2.2	2	1.2	1	4.8
Total	46	100.0	180	100.0	21	100.0

When an 8 x 3 (Professional Position A x Professional Position B) Chi Square was performed, the relationship between the Type of Professional Position and the Sector in which it was held was significant at the 0.001 level (Table 13). The Sector in which the respondents were employed was, therefore, a significant variable as to the Type of Professional Position they held.

TABLE 13

CHI SQUARE PERFORMED FOR THE RELATIONSHIP
BETWEEN PROFESSIONAL POSITION BY
TYPE AND BY SECTOR

Variables	χ^2	df	P
Professional Positions (A) and (B)	109.970	14	0.001

Professional Position by Type (A) and by
Institutional Type (C)

The frequency of the Type of Professional Position varied significantly with the Institutional Type. For example, 83.3 per cent of the respondents in Junior Colleges were in Administration (Table 14). This compared with 15.5 per cent and 26.8 per cent for the Senior Colleges and Universities, respectively. The opposite was found with respect to Teaching. In the Junior Colleges 16.7 per cent were in Teaching with 60.6 per cent in the Senior Colleges and 49.5 per cent in the Universities.

TABLE 14

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY TYPE (A) AND PROFESSIONAL
POSITION BY INSTITUTIONAL TYPE (C)

Professional Position (A)	Junior College		Senior College		University	
	No.	%	No.	%	No.	%
Administration	10	83.3	11	15.5	26	26.8
Teaching	2	16.7	43	60.6	48	49.5
Research	--	--	--	--	1	1.0
Counseling	--	--	--	--	1	1.0
Other	--	--	1	1.4	--	--
Administration and Teaching	--	--	15	21.1	16	16.5
Teaching and Research	--	--	1	1.4	3	3.1
Other Com- binations	--	--	--	--	2	2.1
Total	12	100.0	71	100.0	97	100.0

When an 8 x 3 (Professional Position A x Professional Position C) Chi Square was performed, the relationship between the Type of Professional Position and the Institutional Type was significant at the 0.01 level (Table 15). The Institutional Type was a significant variable, therefore, as to the Type of Professional Position held by the respondents in Higher Education.

Area of Specialization and Income

The numbers and percentages at each level of income and the median incomes by Area of Specialization were

presented in Table 16. There was a rather high degree of variance with respect to the median incomes. They were, in descending order, General Administration (\$18,400), Higher Education (\$18,125), Counseling and Guidance and Math Education (\$17,500), Science Education (\$16,250), Elementary (\$16,176), and Educational Psychology (\$16,111), Secondary (\$15,865), Educational Media (\$15,833), Business Education (\$15,750), Special Education (\$15,714), Other (\$15,000), and History and Philosophy (\$12,500).

TABLE 15

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY TYPE (A) AND
BY INSTITUTIONAL TYPE (C)

Variables	χ^2	df	P
Professional Positions (A) and (C)	30.646	14	0.01

The median income for the aggregate sample was \$16,590. Consequently, the median incomes for the Areas of General Administration, Higher Education, Counseling and Guidance, and Math Education fell above the aggregate median income, while Science Education, Elementary Education, Educational Psychology, Secondary, Educational Media, Business Education, Special Education, Other, and History and Philosophy fell below.

When a 13 x 6 (Area of Specialization x Income) Chi Square was performed, the relationship between Area of

TABLE 16
THE DEGREE OF RELATIONSHIP BETWEEN AREA
OF SPECIALIZATION AND INCOME

Income	Elementary		Secondary		General Adminis- tration		Counseling and Guidance		Educational Psychology		Educational Media		Higher Education	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below \$10,000	2	6.3	--	--	--	--	1	9.1	--	--	--	--	--	--
\$10,000- \$14,999	10	31.2	20	40.8	9	17.3	2	18.2	8	40.0	3	42.9	4	30.8
\$15,000- \$19,999	17	53.1	26	53.1	25	48.1	5	45.4	9	45.0	3	42.9	4	30.8
\$20,000- \$24,999	3	9.4	1	2.0	14	26.9	3	27.3	3	15.0	1	14.2	3	23.1
\$25,000- \$29,999	--	--	2	4.1	4	7.7	--	--	--	--	--	--	2	15.3
Over \$30,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	32	100.0	49	100.0	52	100.0	11	100.0	20	100.0	7	100.0	13	100.0
Median Income: \$16,176			\$15,865		\$18,400		\$17,500		\$16,111		\$15,833		\$18,125	

TABLE 16--Continued

Income	History and Philosophy		Special Education		Business Education		Science Education		Math Education		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below \$10,000	1	14.3	--	--	--	--	1	11.1	--	--	--	--
\$10,000- \$14,999	5	71.4	6	37.5	11	44.0	2	22.2	--	--	1	50.0
\$15,000- \$19,999	1	14.3	7	43.8	10	40.0	6	66.7	4	100.0	1	50.0
\$20,000- \$24,999	--	--	3	18.7	2	8.0	--	--	--	--	--	--
\$25,000- \$29,999	--	--	--	--	1	4.0	--	--	--	--	--	--
Over \$30,000	--	--	--	--	1	4.0	--	--	--	--	--	--
Total	7	100.0	16	100.0	25	100.0	9	100.0	4	100.0	2	100.0
Median Income: \$12,500			\$15,714		\$15,750		\$16,250		\$17,500		\$15,000	

Specialization and Income was not statistically significant (Table 17). Although there was a rather high degree of variance with respect to the median incomes, Area of Specialization was not a significant variable as to Income.

TABLE 17

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
AREA OF SPECIALIZATION AND INCOME

Variables	χ^2	df	P
Area of Specialization and Income	75.362	60	0.10

Professional Position by Type (A) and Income

The information in Table 18 revealed that 20.4 per cent in Administration were at the \$20,000 to \$24,999 level, 7.2 per cent at the \$25,000 to \$29,999 level, and 1 per cent at the over \$30,000 level for a total of 28.6 per cent making \$20,000 or above. Conversely, only 6.0 per cent in Teaching were making \$20,000 to \$24,999 with no one making \$25,000 or above. It was evident that the Type of Professional Position held did determine to a significant degree the Income of the respondents.

This was exemplified by the median incomes for the various Types of Professional Positions. They were, in descending order, Administration (\$17,717), Administration and Teaching (\$17,361), Other (\$16,250), Teaching (\$15,372), Teaching and Research (\$15,000), Other Combinations (\$15,000),

TABLE 18

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY TYPE (A) AND INCOME

Income	Adminis- tration		Teaching		Research		Counsel- ing		Other		Adminis- tration and Teaching		Teaching and Research		Other Combina- tions	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below \$10,000	--	--	3	3.0	--	--	1	14.2	1	33.3	--	--	--	--	--	--
\$10,000- \$14,999	24	24.5	43	43.5	1	100.0	3	42.9	--	--	7	22.6	2	50.0	1	25.0
\$15,000- \$19,999	46	46.9	47	47.5	--	--	3	42.9	2	66.7	18	58.1	1	25.0	1	25.0
\$20,000- \$24,999	20	20.4	6	6.0	--	--	--	--	--	--	4	12.9	1	25.0	2	50.0
\$25,000- \$29,999	7	7.2	--	--	--	--	--	--	--	--	2	6.4	--	--	--	--
Over \$30,000	1	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	98	100.0	99	100.0	1	100.0	7	100.0	3	100.0	31	100.0	4	100.0	4	100.0
Median Income:	\$17,717		\$15,372		\$12,500		\$14,167		\$16,250		\$17,361		\$15,000		\$15,000	

Counseling (\$14,167), and Research (\$12,500).

When an 8 x 6 (Professional Position A x Income) Chi Square was performed, the relationship between Type of Professional Position and Income was significant at the 0.01 level (Table 19). The Type of Professional Position held by the respondents was, therefore, a significant variable as to their Income.

TABLE 19

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY TYPE (A) AND INCOME

Variables	χ^2	df	P
Professional Position (A) and Income	50.076	35	0.01

Professional Position by Sector (B)
and Income

The information in Table 20 showed that 19.0 per cent of the respondents in the Educational or Service Agency Sector were at the \$20,000 to \$24,999 level, 14.3 per cent at the \$25,000 to \$29,999 level, and 4.8 per cent at the over \$30,000 level for a total of 38.1 per cent making \$20,000 or above. This compared with 17.3 per cent (Elementary and/or Secondary) and 11.6 per cent (Higher Education) at the \$20,000 to \$24,999 level, 2.2 per cent (Elementary and/or Secondary) and 2.8 per cent (Higher Education) at the \$25,000 to \$29,999 level with no one at the over \$30,000 level for

either Elementary and/or Secondary or Higher Education. Therefore, the percentage making \$20,000 or above in each Sector was, in descending order, Educational or Service Agency (38.1 per cent), Elementary and/or Secondary (19.5 per cent), and Higher Education (14.4 per cent). The median incomes for the three Sectors were, in descending order, Educational or Service Agency (\$18,214), Higher Education (\$16,595), and Elementary and/or Secondary (\$15,882).

TABLE 20

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY SECTOR (B) AND INCOME

Income	Elementary and/or Secondary		Higher Education		Educational or Service Agency	
	No.	%	No.	%	No.	%
Below \$10,000	3	6.5	1	0.6	1	4.8
\$10,000-\$14,999	17	37.0	59	32.8	5	23.8
\$15,000-\$19,999	17	37.0	94	52.2	7	33.3
\$20,000-\$24,999	8	17.3	21	11.6	4	19.0
\$25,000-\$29,999	1	2.2	5	2.8	3	14.3
Over \$30,000	--	--	--	--	1	4.8
Total	46	100.0	180	100.0	21	100.0
Median Income:	\$15,882		\$16,595		\$18,214	

When a 3 x 6 (Professional Position B x Income) Chi Square was performed, the relationship between Professional Position by Sector and Income was significant at the 0.001 level (Table 21). The Sector in which the respondents were

employed, therefore, was a significant variable with respect to their Income.

TABLE 21

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY SECTOR (B) AND INCOME

Variables	χ^2	df	P
Professional Position (B) and Income	30.227	10	0.001

Professional Position by Institutional
Type (C) and Income

The information in Table 22 showed a relatively even distribution of income among the three Types of Institutions. The median incomes were, in descending order, Junior College (\$17,500), University (\$16,833), and Senior College (\$16,220). This is consistent with the data for the Type of Professional Position (A) as 83.3 per cent of those at the Junior College level are in Administration.

When a 3 x 6 (Professional Position C x Income) Chi Square was performed, the relationship between Professional Position by Institutional Type and Income was not statistically significant (Table 23). The Type of Institution in which the respondents in Higher Education were employed was not, therefore, a significant variable with respect to Income.

TABLE 22

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY INSTITUTIONAL TYPE (C) AND INCOME

Income	Junior College		Senior College		University	
	No.	%	No.	%	No.	%
Below \$10,000	--	--	--	--	1	1.0
\$10,000-\$14,999	3	25.0	25	35.2	31	32.0
\$15,000-\$19,999	6	50.0	43	60.6	45	46.4
\$20,000-\$24,999	2	16.7	3	4.2	16	16.5
\$25,000-\$29,999	1	8.3	--	--	4	4.1
Over \$30,000	--	--	--	--	--	--
Total	12	100.0	71	100.0	97	100.0
Median Income:	\$17,500		\$16,220		\$16,833	

TABLE 23

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY INSTITUTIONAL
TYPE AND INCOME

Variables	χ^2	df	P
Professional Position (C) and Income	12.317	8	0.20

Area of Specialization and Sex

The information in Table 24 indicated that over half (58.8 per cent) of the females specialized in one of two Areas, Elementary (35.3 per cent) or Business Education (23.5 per cent). Four Areas--Elementary, Business Education, Secondary, and Special Education--accounted for 82.4 per cent of the female respondents.

TABLE 24

THE DEGREE OF RELATIONSHIP BETWEEN AREA
OF SPECIALIZATION AND SEX

Area of Specialization	Male		Female	
	No.	%	No.	%
Elementary	20	9.4	12	35.3
Secondary	45	21.1	4	11.8
General Administration	52	24.4	--	--
Counseling and Guidance	9	4.2	2	5.9
Educational Psychology	18	8.5	2	5.9
Educational Media	7	3.3	--	--
Higher Education	12	5.6	1	2.9
History and Philosophy	7	3.3	--	--
Special Education	12	5.6	4	11.8
Business Education	17	8.0	8	23.5
Science Education	9	4.2	--	--
Mathematics Education	4	1.9	--	--
Other	1	0.5	1	2.9
Total	213	100.0	34	100.0

The males were more evenly distributed. Two Areas, General Administration (24.4 per cent) and Secondary (21.1 per cent), did however account for 45.5 per cent of the males. These two Areas accounted for 0.0 per cent and 11.8 per cent of the females, respectively.

When a 13 x 2 (Area of Specialization x Sex) Chi Square was performed, the relationship between Area of Specialization and Sex was significant at the 0.001 level (Table 25). The Sex of the respondents, therefore, was a

significant variable with respect to their Area of Specialization.

TABLE 25

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
AREA OF SPECIALIZATION AND SEX

Variables	χ^2	df	P
Area of Specialization and Sex	40.832	12	0.001

Professional Position by Type (A) and Sex

The information in Table 26 showed that 44.1 per cent of the males were in Administration contrasted with 11.8 per cent of the females. Conversely, 64.7 per cent of the females were in Teaching, while only 36.2 per cent of the males fell in this category. About equal percentages of the males (12.7 per cent) and females (11.8 per cent) in the sample were in a position involving a combination of Administration and Teaching.

When an 8 x 2 (Professional Position A x Sex) Chi Square was performed, the relationship between Professional Position by Type and Sex was significant at the 0.01 level (Table 27). Sex, therefore, was a significant variable with respect to the Type of Professional Position held by the respondents.

TABLE 26

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY TYPE (A) AND SEX

Professional Position (A)	Male		Female	
	No.	%	No.	%
Administration	94	44.1	4	11.8
Teaching	77	36.2	22	64.7
Research	1	0.5	--	--
Counseling	6	2.8	1	2.9
Other	2	0.9	1	2.9
Administration and Teaching	27	12.7	4	11.8
Teaching and Research	4	1.9	--	--
Other Combinations	2	0.9	2	5.9
Total	213	100.0	34	100.0

TABLE 27

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY TYPE (A) AND SEX

Variables	χ^2	df	P
Professional Position (A) and Sex	19.918	7	0.01

Professional Position by Sector (B) and Sex

The data in Table 28 indicated that a proportionate number of males and females could be found in the three Sectors of Professional Position. Higher Education, for example, is depicted as accessible to females as to males.

significant variable with respect to their Area of Specialization.

TABLE 25

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
AREA OF SPECIALIZATION AND SEX

Variables	χ^2	df	P
Area of Specialization and Sex	40.832	12	0.001

Professional Position by Type (A) and Sex

The information in Table 26 showed that 44.1 per cent of the males were in Administration contrasted with 11.8 per cent of the females. Conversely, 64.7 per cent of the females were in Teaching, while only 36.2 per cent of the males fell in this category. About equal percentages of the males (12.7 per cent) and females (11.8 per cent) in the sample were in a position involving a combination of Administration and Teaching.

When an 8 x 2 (Professional Position A x Sex) Chi Square was performed, the relationship between Professional Position by Type and Sex was significant at the 0.01 level (Table 27). Sex, therefore, was a significant variable with respect to the Type of Professional Position held by the respondents.

TABLE 26

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY TYPE (A) AND SEX

Professional Position (A)	Male		Female	
	No.	%	No.	%
Administration	94	44.1	4	11.8
Teaching	77	36.2	22	64.7
Research	1	0.5	--	--
Counseling	6	2.8	1	2.9
Other	2	0.9	1	2.9
Administration and Teaching	27	12.7	4	11.8
Teaching and Research			--	--
Other Combinations			2	5.9
Total			34	100.0

CHI SQUARE PERFORMED BETWEEN
PROFESSIONAL POSITION AND SEX

Variables		df	P
Professional Position (A) and Sex	19.918	7	0.01

Professional Position by Sector (B) and Sex

The data in Table 28 indicated that a proportionate number of males and females could be found in the three Sectors of Professional Position. Higher Education, for example, is depicted as accessible to females as to males.

TABLE 28

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL
POSITION BY SECTOR (B) AND SEX

Professional Position (B)	Male		Female	
	No.	%	No.	%
Elementary and/or Secondary	39	18.3	7	20.6
Higher Education	154	72.3	26	76.5
Educational or Service Agency	20	9.4	1	2.9
Total	213	100.0	34	100.0

When a 3 x 2 (Professional Position B x Sex) Chi Square was performed, the relationship between Professional Position by Sector and Sex was not statistically significant (Table 29). Sex, therefore, was not a significant variable with respect to the Sector in which the respondents were employed.

TABLE 29

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
PROFESSIONAL POSITION BY SECTOR (B) AND SEX

Variables	χ^2	df	P
Professional Position (B) and Sex	1.586	2	0.50

Professional Position by Institutional
Type (C) and Sex

The information in Table 30 showed a proportionate number of males and females in the three Institutional Types.

There was, however, a tendency for a greater percentage of males to be at the University level than females.

TABLE 30

THE DEGREE OF RELATIONSHIP BETWEEN PROFESSIONAL POSITION BY INSTITUTIONAL TYPE (C) AND SEX

Professional Position (C)	Male		Female	
	No.	%	No.	%
Junior College	9	5.8	3	11.5
Senior College	59	38.4	12	46.2
University	86	55.8	11	42.3
Total	154	100.0	26	100.0

When a 3 x 2 (Professional Position C x Sex) Chi Square was performed, the relationship between Professional Position by Institutional Type and Sex was not statistically significant (Table 31). The Type of Institution in which the respondents in Higher Education were employed was not, therefore, significantly related to Sex.

TABLE 31

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN PROFESSIONAL POSITION BY INSTITUTIONAL TYPE (C) AND SEX

Variables	χ^2	df	P
Professional Position (C) and Sex	2.185	2	0.50

Sex and Income

The data in Table 32 revealed that there were no females making \$20,000 or above, while 20.2 per cent of the males were making \$20,000 or above. In addition, 61.8 per cent of the females were making below \$15,000 annually compared with 30.5 per cent of the males.

TABLE 32
THE DEGREE OF RELATIONSHIP BETWEEN
SEX AND INCOME

Income	Male		Female	
	No.	%	No.	%
Below \$10,000	2	0.9	3	8.8
\$10,000-\$14,999	63	29.6	18	53.0
\$15,000-\$19,999	105	49.3	13	38.2
\$20,000-\$24,999	33	15.5	--	--
\$25,000-\$29,999	9	4.2	--	--
Over \$30,000	1	0.5	--	--
Total	213	100.0	34	100.0
Median Income:	\$16,976		\$13,889	

The median incomes were males (\$16,976) and females (\$13,889). This discrepancy may have been reinforced by the fact that a much larger percentage of males (44.1 per cent) than females (11.8 per cent) were in Administration (See Table 26). As established earlier, Type of Professional Position was a significant variable with respect to Income.

When a 2 x 6 (Sex x Income) Chi Square was performed, the relationship between Sex and Income was significant at the 0.001 level (Table 33). Sex, therefore, was a significant variable with respect to Income for the participants in the study.

TABLE 33

CHI SQUARE PERFORMED FOR THE RELATIONSHIP BETWEEN
SEX AND INCOME

Variables	χ^2	df	P
Sex and Income	21.499	5	0.001

The presentation of the results of the analyses concerning the relationships among the variables of Area of Specialization, Professional Position, Income, and Sex established that ten of the fourteen relationships analyzed were statistically significant at a level equal to or less than 0.05. Five of the relationships were highly significant at the 0.001 level. They were: Area of Specialization and Professional Position by Type; Professional Position by Type and by Sector; Professional Position by Sector and Income; Area of Specialization and Sex; and Sex and Income. Four relationships--Area of Specialization and Professional Position by Institutional Type, Professional Position by Type and by Institutional Type, Professional Position by Type and Income, and Professional Position by Type and Sex--were statistically significant at the 0.01 level. The relationship between Area

of Specialization and Professional Position by Sector was significant at the 0.05 level.

Four of the relationships--Area of Specialization and Income, Professional Position by Institutional Type and Income, Professional Position by Sector and Sex, and Professional Position by Institutional Type and Sex--were not statistically significant at the 0.05 level. Following is a summary of the significance of these results as they relate to the function of the doctor's degree.

Summary

The 247 respondents were divided into thirteen Areas of Specialization. General Administration and Secondary led the way with fifty-two and forty-nine, respectively. Combined with Elementary (thirty-two) and Business Education (twenty-five), they accounted for 158 (70 per cent) of the sample.

Teaching, 99 (40.1 per cent), and Administration, 98 (39.7 per cent), were the two primary Types of Professional Positions. Almost three-fourths, 180 (72.9 per cent), of the respondents were employed in Higher Education as compared with 46 (18.6 per cent) in Elementary and/or Secondary and 21 (8.5 per cent) in Educational or Service Agencies. Of those in Higher Education, over half, 97 (53.9 per cent), were at the University level.

The median income for the respondents was \$16,590 annually with 118 (47.8 per cent) of the participants making

from \$15,000 to \$19,999. There were 213 males (86.2 per cent) and 34 females (13.8 per cent).

A statistically significant relationship existed between the respondents' Area of Specialization and the Type of Professional Position they held. Over 60 per cent of those who specialized in General Administration, Secondary, and Higher Education were in Administration, while over 60 per cent of those who specialized in Math Education, Science Education, and Elementary were in Teaching. The Sector and, for those in Higher Education, the Institutional Type in which the respondents held positions varied significantly with their Area of Specialization.

A statistically significant relationship existed between the Type of Professional Position the respondents held and the Sector in which they were employed. For example, 94.0 per cent of those in Teaching were in Higher Education as compared with 48.0 per cent of those in Administration. This varied significantly, however, with Institutional Type. Of the twelve who were in Junior Colleges, 10 (83.3 per cent) were Administration.

The median incomes for the Areas of Specialization ranged from \$18,400 (General Administration) to \$12,500 (History and Philosophy). The relationship between Area of Specialization and Income was not, however, statistically significant. The Type of Professional Position engaged in was significantly related to Income. Administration led the

way with a median income of \$17,717 as compared, for example, with Teaching, \$15,372. Statistically significant differences in Income also existed with respect to the Sector in which the respondents were employed. The median incomes for the Sectors were: Educational or Service Agencies (\$18,214), Higher Education (\$16,595), and Elementary and/or Secondary (\$15,822). For those in the Higher Education Sector, the differences among the median incomes by Institutional Type were not statistically significant. They were Junior College (\$17,500), University (\$16,833), and Senior College (\$16,220). This is consistent with the fact that 83.3 per cent of the respondents at the Junior College level were in Administration.

Sex was a significant factor with respect to Area of Specialization. Almost three-fifths (58.8 per cent) of the females specialized in Elementary (35.3 per cent) or Business Education (23.5 per cent) contrasted with 9.4 per cent and 8.0 per cent, respectively, for the males. On the other hand, 24.4 per cent of the males specialized in General Administration when no females specialized in this Area.

A significant difference between males and females existed with respect to Type of Professional Position held. Of the females, 64.7 per cent were in Teaching as compared with 36.2 per cent of the males. This compared with 44.1 per cent of the males and 11.8 per cent of the females in Administration. Sex was not an important variable, however, with

respect to the Sector or Institutional Type in which the respondents were employed.

Sex and Income were significantly related. This was indicated by the median incomes for males, \$16,976, and females, \$13,889. In addition, 20.2 per cent of the males were making \$20,000 or above, while no female was making \$20,000. This discrepancy with respect to income may have been reinforced by the fact that only 11.8 per cent of the females were in Administration as compared with 44.1 per cent of the males.

As an aggregate, the respondents in the thirteen Areas of Specialization were in positions of Teaching and/or Administration. This was primarily in Higher Education at the University level. Their median income was \$16,590. The Sex of the respondent was an important determinant as to Area of Specialization, Type of Professional Position, and Income.

CHAPTER IV

PRESENTATION OF RESULTS: THE IMPORTANCE OF SIXTEEN ITEMS AS OUTCOMES OF THE DOCTORAL PROGRAM

The purpose of Chapter IV is to present the results of the analysis of the data obtained from the respondents as to "what should have been" and "what was" the importance of each of sixteen items as outcomes of the doctoral program. The data were taken from the opinionnaire (Appendix D) completed by each of the participants in the study. The findings were organized as follows:

1. The outcomes: "What should have been" and "what was" their importance.
2. The degree of discrepancy between "what should have been" and "what was" the importance of each of the outcomes of the doctoral program for the aggregate of all participants.
3. The degree of discrepancy between "what should have been" and "what was" the importance of each of sixteen items as outcomes of the doctoral program for each Area of Specialization.
4. The degree to which each Area of Specialization rated each of the "what should have been" items significantly different than the other Areas of Specialization.
5. The degree to which each Area of Specialization rated each of the "what was" items significantly different than the other Areas of Specialization.

The Outcomes

The respondents rated each outcome on a five point scale from greatest importance (5) to least importance (1). In order to facilitate the discussion of the relative importance of the outcomes as indicated by the respondents, the phrases listed below were used. Each phrase represented a range of mean scores on the rating scale as indicated.

1. Of great importance: mean score equal to or greater than 3.5
2. Of medium importance: mean score equal to or greater than 3.0; less than 3.5
3. Of little importance: mean score equal to or greater than 2.5; less than 3.0
4. Of no importance: mean score less than 2.5

Rating of Outcomes That Should Have Been Important

Intellectual Outcomes. These were identified as outcomes that should have been of great importance. As shown by the information in Table 34, Analytical Judgment was rated as the outcome which should have been the most important. All four of the Intellectual outcomes were rated higher than any of the others listed in the instrument. In order of descending rank after Analytical Judgment were, (2) Desire for Knowledge, (3) Intellectual Skills, and (4) Possession of Knowledge.

Social Outcomes. All of these were rated lower in importance than the Intellectual outcomes. As indicated by the information in Table 34, the outcomes identified as Man

TABLE 34

RATING OF OUTCOMES THAT SHOULD HAVE BEEN
IMPORTANT: MEANS AND RANKS FOR THE
AGGREGATE RESPONDENT SAMPLE

Doctoral Program Outcomes	Item ^a No.	What Should Have Been	
		$\bar{X}$	Rank
Intellectual:			
Possession of Knowledge	16	3.989	4
Intellectual Skills	1	3.947	3
Analytical Judgment	10	4.170	1
Desire for Knowledge	7	3.983	2
Social:			
Man to Man	12	3.226	7
Man to State	3	2.753	10
Man to Country	5	2.748	11
Man to World	14	3.012	9
Personal:			
Physical	4	1.692	16
Emotional	8	3.133	8
Ethical	11	3.307	6
Aesthetic	2	2.153	13
Productive:			
Vocation-Selective	15	2.668	12
Vocation-Preparative	6	3.323	5
Home and Family	9	1.987	15
Consumer	13	1.995	14

^aFor a statement of each outcome see the corresponding item number on the Opinionnaire (Appendix D).

to Man and Man to World were rated of medium importance. The others in the group, Man to State and Man to Country, were rated of little importance.

Personal Outcomes. Two of these, Emotional and Ethical, were rated of medium importance. The other two listed under this heading, Physical and Aesthetic, were rated of no importance. These last two were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral program by the sample population included in the study (Table 34).

Productive Outcomes. One of these, Vocation-Preparative, was rated of medium importance. Another, Vocation-Selective, was rated of little importance. The other two under this heading, Home and Family and Consumer, were rated of no importance. These last two were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral program by the respondents in the study (Table 34).

Summary of Ratings

The respondents indicated that the following four outcomes of the doctoral program should have been of great importance. In descending order beginning with the one rated highest, they were:

1. Analytical Judgment: The tools and habits of mind to make independent judgments--the ability to think and

evaluate constructively and creatively.

2. Desire for Knowledge: A continuing desire for knowledge--intellectual curiosity and an inquiring mind.

3. Intellectual Skills: Competency in using skills necessary for acquiring knowledge and skill in transmitting this knowledge through oral and written communication.

4. Possession of Knowledge: Possession of a fund of information in a field of specialization and an understanding of the major concepts in related fields of knowledge.

Arranged in descending order or rank, the five outcomes listed below were rated of medium importance.

1. Vocation-Preparative: Specialized training resulting in a professional position.

2. Ethical: Ethical and moral integrity in one's own thinking and relationships with others.

3. Man to Man: A feeling of respect and tolerance for other people and the ability to live and work in harmony.

4. Emotional: Emotional stability and maturity which enables one to cope with reality and new situations.

5. Man to World: Knowledge and understanding of world affairs and of the need for intelligent and responsible interrelationships among peoples and nations.

Rating of Outcomes That Were Important

Intellectual Outcomes. These were identified as outcomes that were of great importance. Three of these outcomes

were rated higher than any of the others listed in the instrument. As shown by the information in Table 35, Intellectual Skills was rated as the most important outcome. In order of descending rank after Intellectual Skills were, (2) Possession of Knowledge, (3) Analytical Judgment, and (5) Desire for Knowledge.

Social Outcomes. All of these were rated lower in importance than the Intellectual outcomes. As indicated by the information in Table 35, the outcome identified as Man to Man was rated of medium importance. The others in the group--Man to State, Man to Country, and Man to World--were rated of little importance.

Personal Outcomes. Two of these, Emotional and Ethical, were rated of medium importance. The other two, Physical and Aesthetic, were rated of no importance. These last two were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral program by the sample population included in the study (Table 35).

Productive Outcomes. The respondents rated one of these, Vocation-Preparative, of great importance. This outcome ranked fourth in importance relative to all the other outcomes. Another, Vocation-Selective, was rated of little importance. The other two listed under this heading, Physical and Aesthetic, were rated of no importance. These last

TABLE 35

RATING OF OUTCOMES THAT WERE IMPORTANT: MEANS
AND RANKS FOR THE AGGREGATE
RESPONDENT SAMPLE

Doctoral Program Outcomes	Item ^a No.	What Was	
		$\bar{X}$	Rank
Intellectual:			
Possession of Knowledge	16	4.028	2
Intellectual Skills	1	4.064	1
Analytical Judgment	10	3.769	3
Desire for Knowledge	7	3.668	5
Social:			
Man to Man	12	3.186	6
Man to State	3	2.757	11
Man to Country	5	2.716	12
Man to World	14	2.793	10
Personal:			
Physical	4	1.919	16
Emotional	8	3.068	7
Ethical	11	3.064	8
Aesthetic	2	2.157	14
Productive:			
Vocation-Selective	15	2.825	9
Vocation-Preparative	6	3.684	4
Home and Family	9	2.125	15
Consumer	13	2.165	13

^aFor a statement of each outcome see the corresponding item number on the Opinionnaire (Appendix D).

two were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral program by the respondents in the study (Table 35).

Summary of Ratings

The respondents indicated that the following five outcomes of the doctoral program were of great importance. In descending order beginning with the one rated highest, they were:

1. Intellectual Skills: Competency in using skills necessary for acquiring knowledge and skill in transmitting this knowledge through oral and written communication.

2. Possession of Knowledge: Possession of a fund of information in a field of specialization and an understanding of the major concepts in related fields of knowledge.

3. Analytical Judgment: The tools and habits of mind to make independent judgments--the ability to think and evaluate constructively and creatively.

4. Vocation-Preparative: Specialized training resulting in a professional position.

5. Desire for Knowledge: A continuing desire for knowledge--intellectual curiosity and an inquiring mind.

Three outcomes were rated of medium importance. In descending order or rank, they were:

1. Man to Man: A feeling of respect and tolerance for other people and the ability to live and work in harmony.

2. Emotional: Emotional stability and maturity which enables one to cope with reality and new situations.

3. Ethical: Ethical and moral integrity in one's own thinking and relationships with others.

Although the participants in the study did not perceive the actual outcomes of the doctoral program quite as clearly intellectual as they indicated it should have been, they identified its nature as primarily intellectual. Placement in a professional position as a result of the intellectual training was seen as an important aspect of the doctoral program.

The Degree of Discrepancy Between What Should
Have Been and What Was the Importance
of the Outcomes

Degree of Discrepancy for the Aggregate
Respondent Sample

The data in Table 36 compared the means, ranks, and mean differences for what should have been and what was the importance of each of the sixteen items as outcomes of the doctoral program for the aggregate respondent sample. The mean and rank of an outcome indicated its importance relative to the other outcomes. Its mean difference indicated the degree of discrepancy and whether the outcome should have been of greater or lesser importance. A plus (+) mean difference indicated that an outcome should have been of greater importance, a minus (-) mean difference that it should have been of lesser importance.

TABLE 36

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES
OF DOCTORAL PROGRAM OUTCOMES FOR THE
AGGREGATE RESPONDENT SAMPLE

The Outcomes	What Should Have Been		What Was		Mean Dif- ference ^a ±
	$\bar{X}$	Rank	$\bar{X}$	Rank	
Intellectual:					
Possession of Knowledge	3.898	4	4.028	2	-0.130
Intellectual Skills	3.947	3	4.064	1	-0.117
Analytical Judgment	4.170	1	3.769	3	+0.401
Desire for Knowledge	3.983	2	3.668	5	+0.315
Social:					
Man to Man	3.226	7	3.186	6	+0.040
Man to State	2.753	10	2.757	11	-0.004
Man to Country	2.748	11	2.716	12	+0.032
Man to World	3.012	9	2.793	10	+0.219
Personal:					
Physical ^b	1.692	16	1.919	16	-0.217
Emotional	3.133	8	3.068	7	+0.068
Ethical	3.307	6	3.064	8	+0.243
Aesthetic ^b	2.153	13	2.157	14	-0.004
Productive:					
Vocation-Selective	2.668	12	2.825	9	-0.157
Vocation-Preparative	3.323	5	3.684	4	-0.361
Home and Family ^b	1.987	15	2.125	15	-0.138
Consumer ^b	1.995	14	2.165	13	-0.170

^a±Difference indicates the following:
 + should have been of greater importance
 - should have been of lesser importance

^bRated of no importance as an outcome of the doctoral program.

Wilcoxon

The Wilcoxon matched-pairs signed-ranks test was used to describe statistically the degree of discrepancy between what should have been and what was the importance of each of sixteen items listed in the instrument as outcomes of the doctoral program. Siegel has stated:

With behavioral data, it is not uncommon that the researcher can (a) tell which member of a pair is "greater than" which, i.e., tell the sign of the difference between any pair, and (b) rank the differences in order of absolute size. That is, he can make the judgment of "greater than" between any pair's two performances, and also can make that judgment between any two difference scores arising from any two pairs. With such information, the experimenter may use the Wilcoxon test.¹

The Wilcoxon describes the magnitude as well as the direction of the difference within pairs.² A numerically small T (the statistic used in the test) would indicate genuine difference between the pair's two performances, while a numerically large T would indicate merely chance difference. This statistical technique was appropriate for the desired analyses as the data were ordinal and the two assumptions stated above could be met.

Intellectual Outcomes. The Intellectual outcomes were rated by the respondents as of great importance both for

¹Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Co., Inc., 1956), p. 75-76.

²Ibid., p. 75.

what should have been and what was. However, there was discrepancy for each of the Intellectual items (Table 36).

Analytical Judgment and Desire for Knowledge had plus discrepancies. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancies between what should have been and what was for both Analytical Judgment and Desire for Knowledge were significant at the 0.0001 level (Table 37).

TABLE 37

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN
WHAT SHOULD HAVE BEEN AND WHAT WAS THE
IMPORTANCE OF THE INTELLECTUAL
OUTCOMES FOR THE AGGREGATE
RESPONDENT SAMPLE

Outcome	K	T	Z	P
Possession of Knowledge	101	1815.50	2.57	0.01
Intellectual Skills	86	1301.00	2.45	0.05
Analytical Judgment	112	957.00	6.41	0.0001
Desire for Knowledge	116	1511.00	5.18	0.0001

N=247

Possession of Knowledge and Intellectual Skills had minus discrepancies. When the same statistical test was performed for these outcomes, the differences between what the outcomes should have been and what they were turned out to be significant at the 0.01 level for Possession of Knowledge and at the 0.05 level for Intellectual Skills (Table 37).

These data seemed to indicate that the participants in the study thought that the outcomes described under

Analytical Judgment and Desire for Knowledge should have been more important than they were. Further, although Possession of Knowledge and Intellectual Skills were considered to be outcomes that should have been of great importance, analysis of the response data suggested that the participants thought they should have been of lesser importance than Analytical Judgment and Desire for Knowledge.

Social Outcomes. With the exception of Man to World, the discrepancies between what should have been and what was the importance were not significant. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Man to World was significant at the 0.0001 level (Table 38).

TABLE 38

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN
WHAT SHOULD HAVE BEEN AND WHAT WAS THE
IMPORTANCE OF THE SOCIAL OUTCOMES
FOR THE AGGREGATE RESPONDENT
SAMPLE

Outcome	K	T	Z	P
Man to Man	92	1938	0.78	0.50
Man to State	70	1231	0.07	0.95
Man to Country	73	1228	0.67	0.50
Man to World	84	777	4.50	0.0001

N=247

The statistically significant discrepancy for the Man to World outcome seemed to indicate that according to the respondents the development of a world perspective should have been of much greater importance as an outcome of the doctoral program than it was.

Personal Outcomes. Emotional and Ethical had plus discrepancies. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Emotional was not statistically significant, while the discrepancy for Ethical was significant at the 0.0001 level (Table 39). These data seemed to indicate that the participants in the study thought that the Ethical outcome should have been more important than it was.

TABLE 39

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE PERSONAL OUTCOMES FOR THE AGGREGATE RESPONDENT SAMPLE

Outcome	K	T	Z	P
Emotional	107	2543.50	1.07	0.30
Ethical	98	1239.50	4.20	0.0001

N=247

The other two listed under this heading, Physical and Aesthetic, were rated of no importance by the respondents in the study. These were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral

program. Therefore, they were not included in this section.

Productive Outcomes. These outcomes all had minus discrepancies. The Home and Family and Consumer outcomes were rated of no importance by the respondents in the study. They were rated so low that they were considered to be rejected as legitimate outcomes of the doctoral program. Therefore, they were not included in this section.

When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Vocation-Selective was significant at the 0.05 level and for Vocation-Preparative at the 0.0001 level (Table 40). These data seemed to indicate that the participants in the study thought that these two outcomes should have been less important than they were.

TABLE 40

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE PRODUCTIVE OUTCOMES FOR THE AGGREGATE RESPONDENT SAMPLE

Outcome	K	T	Z	P
Vocation-Selective	119	2713.50	2.27	0.05
Vocation-Preparative	115	1382.50	5.45	0.0001

N=247

Degree of Discrepancy by Area of Specialization

Thirteen Areas of Specialization were represented among the respondents. However, the Area of Specialization

entitled "Other" which included two respondents was not included. This section presents and analyzes the data in terms of the significant discrepancies by Area of Specialization for those outcomes of the doctoral program which were indicated as important.

Seven of the twelve Areas of Specialization had significant discrepancies for one or more of the twelve outcomes considered in the analyses (Table 41). These were included in this section. The other five Areas--Counseling and Guidance, Higher Education, Special Education, Science Education, and Math Education--had no statistically significant discrepancies for the twelve outcomes. Therefore, they were not included in this section.

Elementary. Ethical and Vocation-Preparative had a plus and minus discrepancy, respectively. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Ethical was significant at the 0.01 level and for Vocation-Preparative at the 0.05 level (Table 42).

The data seemed to indicate that the Elementary respondents thought that the Ethical outcome should have been more important than it was. Further, the Vocation-Preparative outcome should have been less important than it was.

TABLE 41
STATISTICALLY SIGNIFICANT DISCREPANCIES
BY AREA OF SPECIALIZATION

Area of Specialization	Outcome ^a	What Should Have Been	What Was	Mean Difference
		$\bar{X}$	$\bar{X}$	$\pm$
Elementary:	Ethical	3.312	2.875	+0.437
	Vocation-Preparative	3.250	3.687	-0.437
Secondary:	Possession of Knowledge	3.857	4.102	-0.245
	Analytical Judgment	4.204	3.755	+0.449
	Desire for Knowledge	3.979	3.469	+0.510
	Ethical	3.469	2.979	+0.490
	Vocation-Preparative	3.265	3.571	-0.306
General Administration:	Analytical Judgment	4.134	3.750	+0.384
	Desire for Knowledge	3.865	3.615	+0.250
	Vocation-Selective	2.653	2.942	-0.289
	Vocation-Preparative	3.346	3.730	-0.384
Educational Psychology:	Analytical Judgment	4.600	3.500	+1.100
	Vocation-Selective	2.650	3.250	-0.600
Educational Media:	Analytical Judgment	4.000	3.000	+1.000
History and Philosophy:	Desire for Knowledge	4.428	3.714	+0.714
	Vocation-Selective	2.285	3.428	-1.143
Business Education:	Analytical Judgment	4.320	3.960	+0.360
	Vocation-Preparative	3.400	3.760	-0.360

^aPhysical, Aesthetic, Home and Family, and Consumer outcomes were not included because they were rated of no importance as outcomes of the doctoral program.

TABLE 42

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT
SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE
OF THE OUTCOMES FOR ELEMENTARY

Outcome	K	T	Z	P
Ethical	12	4.50	2.71	0.01
Vocation-Preparative	17	33.50	2.04	0.05

N=32

Secondary. Analytical Judgment, Desire for Knowledge, and Ethical had plus discrepancies. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for both Analytical Judgment and Ethical was significant at the 0.01 level and for Desire for Knowledge at the 0.0001 level (Table 43).

TABLE 43

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT
SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE
OF THE OUTCOMES FOR SECONDARY

Outcome	K	T	Z	P
Possession of Knowledge	18	40.00	1.98	0.05
Analytical Judgment	22	32.00	3.07	0.01
Desire for Knowledge	27	46.00	3.44	0.001
Ethical	29	84.00	2.89	0.01
Vocation-Preparative	25	84.50	2.10	0.05

N=49

Possession of Knowledge and Vocation-Preparative had minus discrepancies. When the same statistical test was performed for these outcomes, the discrepancies between what should have been and what was for both Possession of Knowledge and Ethical were significant at the 0.05 level (Table 43).

The data seemed to indicate that the Secondary respondents thought that the Analytical Judgment, Desire for Knowledge, and Ethical outcomes should have been more important than they were. Further, the Possession of Knowledge and Vocation-Preparative outcomes should have been less important than they were.

General Administration. Analytical Judgment and Desire for Knowledge had plus discrepancies. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Analytical Judgment was significant at the 0.01 level and for Desire for Knowledge at the 0.05 level (Table 44).

Vocation-Selective and Vocation-Preparative had minus discrepancies. When the same statistical test was performed for these outcomes, the discrepancy for Vocation-Selective was significant at the 0.05 level and for Vocation-Preparative at the 0.01 level (Table 44).

The data seemed to indicate that the General Administration respondents thought that the Analytical Judgment and

Desire for Knowledge outcomes should have been more important than they were. Further, the Vocation-Selective and Vocation-Preparative outcomes should have been less important than they were.

TABLE 44

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE OUTCOMES FOR GENERAL ADMINISTRATION

Outcome	K	T	Z	P
Analytical Judgment	18	13.00	3.16	0.01
Desire for Knowledge	17	30.00	2.20	0.05
Vocation-Selective	22	59.00	2.19	0.05
Vocation-Preparative	21	27.00	3.08	0.01

N=52

Educational Psychology. Analytical Judgment and Vocation-Selective had a plus and minus discrepancy, respectively. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Analytical Judgment was significant at the 0.001 level and for Vocation-Selective at the 0.05 level (Table 45).

The data seemed to indicate that the Educational Psychology respondents thought that the Analytical Judgment outcome should have been more important than it was. Further, the Vocation-Selective outcome should have been less important than it was.

TABLE 45

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE OUTCOMES FOR EDUCATIONAL PSYCHOLOGY

Outcome	K	T	Z	P
Analytical Judgment	17	6.50	3.31	0.001
Vocation-Selective	13	16.00	2.06	0.05

N=20

Educational Media. Analytical Judgment had a plus discrepancy. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancy between what should have been and what was for Analytical Judgment was significant at the 0.05 level (Table 46). The data seemed to indicate that the Educational Media respondents thought the Analytical Judgment outcome should have been more important than it was.

TABLE 46

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE OUTCOMES FOR EDUCATIONAL MEDIA

Outcome	K	T	Z	P
Analytical Judgment	5	0.0	2.02	0.05

N=7

History and Philosophy. Desire for Knowledge and Vocation-Selective had a plus and minus discrepancy, respectively. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancies between what should have been

and what was for both Desire for Knowledge and Vocation-Selective were significant at the 0.05 level (Table 47).

TABLE 47

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF THE OUTCOMES FOR HISTORY AND PHILOSOPHY

Outcome	K	T	Z	P
Desire for Knowledge	5	0.0	2.02	0.05
Vocation-Selective	6	0.0	2.20	0.05

N=7

The data seemed to indicate that the History and Philosophy respondents thought that the Desire for Knowledge outcome should have been more important than it was. Further, the Vocation-Selective outcome should have been less important than it was.

Business Education. Analytical Judgment and Vocation-Preparative had a plus and minus discrepancy, respectively. When a Wilcoxon matched-pairs signed-ranks test was performed, the discrepancies between what should have been and what was for both Analytical Judgment and Vocation-Preparative were significant at the 0.05 level (Table 48).

The data seemed to indicate that the Business Education respondents thought that the Analytical Judgment outcome should have been more important than it was. Further, the Vocation-Preparative outcome should have been less important than it was.

TABLE 48

WILCOXONS PERFORMED FOR THE DISCREPANCY BETWEEN WHAT
SHOULD HAVE BEEN AND WHAT WAS THE IMPORTANCE OF
THE OUTCOMES FOR BUSINESS EDUCATION

Outcome	K	T	Z	P
Analytical Judgment	10	5.00	2.29	0.05
Vocation-Preparative	9	4.00	2.19	0.05

N=25

The Degree to Which Each Area of Specialization
Rated the Outcomes Significantly Different
Than the Other Areas of Specialization

The purpose of this section is to identify the outcomes rated significantly different by the Areas of Specialization. The four outcomes which were indicated by the aggregate respondent sample as of no importance as outcomes of the doctoral program were not included. In addition, the Area of Specialization entitled "Other" which included two respondents was not included. The statistical table which follows each Area of Specialization included those outcomes which that Area of Specialization rated significantly higher.

Mann-Whitney U

The Mann-Whitney U test was used to describe statistically the degree to which each Area of Specialization rated each of the "what should have been" and the "what was" items significantly different than the other Areas of Specialization. Siegel has stated, "When at least ordinal measurement has been achieved, the Mann-Whitney U test may be used to

test whether two independent groups have been drawn from the same population."¹ For the purposes of the study, a numerically small U (the statistic used in this test) would indicate genuine population differences as to the scores, while a numerically large U would indicate merely chance differences such as are to be expected between two random samples from the same population. Since the data were ordinal, this test was appropriate for the desired analyses.

In the study, the U scores were converted to Z scores when n_2 (the largest group) was equal to or greater than twenty. In addition, a correction factor for ties was used in the program which converted the U scores to Z scores. This resulted in identical U scores in some cases being converted into slightly different Z scores because the number of ties differed between the groups.

Rating of Outcomes That Should Have Been Important:
The Significant Differences by Area
of Specialization

Although there was a high degree of agreement among the respondents as to what the importance of the outcomes should have been, there were significant differences by Area of Specialization. These differences represented the tendencies of the respondents from certain Areas of Specialization to rate particular outcomes significantly higher or lower than those from other Areas of Specialization.

¹Ibid., p. 116.

Number of Significant Differences

The data in Table 49 indicated the number of significant differences for each Area of Specialization. The greatest number were recorded by the History and Philosophy respondents. The Educational Media respondents recorded no significant differences and the others were as indicated.

Areas of Specialization Compared

The information contained in Tables 50 through 60 shows how each Area of Specialization compared with the other Areas. The comparisons are in terms of the outcomes that were rated significantly higher by each Area in relation to the other Areas. The Educational Media respondents did not rate any outcomes significantly higher than the other Areas of Specialization. Therefore, no table is included for them.

Tendencies of Perceptions to Differ by Area of Specialization

The information in Table 61 revealed that the respondents in some Areas of Specialization tended to rate what should have been the importance of certain outcomes significantly higher or lower than respondents in other Areas. Discussed in the following sub-sections are the tendencies of those in each Area of Specialization to differ significantly from the other Areas in their perceptions of what should have been the importance of the respective outcomes.

TABLE 49

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 NUMBERS AND PERCENTAGES OF THE TYPES OF
 SIGNIFICANT DIFFERENCES BY AREA
 OF SPECIALIZATION

Area of Specialization	Significant Differences					
	Higher		Lower		Total	
	No.	%	No.	%	No.	%
History and Philosophy	10	15.4	16	24.6	26	20.0
Educational Psychology	9	13.8	11	16.9	20	15.4
Special Education	10	15.4	7	10.7	17	13.1
Business Education	6	9.2	9	13.8	15	11.5
General Administration	9	13.8	5	7.7	14	10.8
Secondary	6	9.2	3	4.6	9	6.9
Elementary	4	6.2	5	7.7	9	6.9
Science Education	5	7.7	4	6.2	9	6.9
Counseling and Guidance	3	4.6	1	1.5	4	3.1
Math Education	2	3.1	2	3.1	4	3.1
Higher Education	1	1.5	2	3.1	3	2.3
Educational Media	--	--	--	--	--	--
Total	65	100.0	65	100.0	130	100.0

TABLE 50

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY HISTORY AND
 PHILOSOPHY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Ethical	7	32	62	1.98	0.05
Secondary	Emotional	7	49	98	2.03	0.05
General Administration	Ethical	7	52	83	2.68	0.01
Educational Psychology	Desire for Knowledge	7	20	34	1.99	0.05
	Emotional	7	20	34	2.00	0.05
	Ethical	7	20	34	2.28	0.05
	Man to Man	7	20	33	2.31	0.05
Business Education	Ethical	7	25	33	2.93	0.01
	Man to Man	7	25	40	2.54	0.05
Math Education	Ethical	4	7	1	--	0.05

TABLE 51

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U'S PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY EDUCATIONAL
 PSYCHOLOGY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Analytical Judgment	20	32	144	3.58	0.001
Secondary	Analytical Judgment	20	49	327	2.38	0.05
General Administration	Analytical Judgment	20	52	292	3.36	0.001
History and Philosophy	Analytical Judgment	7	20	34	2.23	0.05
	Possession of Knowledge	7	20	36	2.78	0.01
Special Education	Analytical Judgment	16	20	65	3.26	0.01
	Possession of Knowledge	16	20	109	2.23	0.05
Science Education	Possession of Knowledge	9	20	54	2.57	0.01
	Vocation-Preparative	9	20	51	1.99	0.05

TABLE 52

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY SPECIAL
 EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Emotional	16	32	158	2.32	0.05
Secondary	Emotional	16	49	202	3.20	0.01
General Administration	Emotional	16	52	223	3.04	0.01
Counseling and Guidance	Emotional	11	16	39	--	0.05
Educational Psychology	Emotional	16	20	84	2.78	0.01
	Man to Man	16	20	95	2.30	0.05
Higher Education	Emotional	13	16	52	--	0.05
Business Education	Emotional	16	25	123	2.26	0.05
	Man to Man	16	25	117	2.54	0.05
Science Education	Emotional	9	16	36	--	0.05

TABLE 53

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY BUSINESS
 EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
History and Philosophy	Intellectual Skills	7	25	39	2.45	0.05
	Man to Country	7	25	45	2.16	0.05
	Possession of Knowledge	7	25	48	2.04	0.05
Special Education	Analytical Judgment	16	25	123	2.23	0.05
	Possession of Knowledge	16	25	135	1.98	0.05
Science Education	Possession of Knowledge	9	25	67	2.02	0.05

TABLE 54

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY GENERAL
 ADMINISTRATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Analytical Judgment	32	52	653	1.99	0.05
Educational Psychology	Intellectual Skills	20	52	329	2.73	0.01
	Man to Man	20	52	365	2.32	0.05
History and Philosophy	Intellectual Skills	7	52	39	3.76	0.001
	Man to Country	7	52	89	2.52	0.05
Special Education	Intellectual Skills	16	52	285	2.13	0.05
	Analytical Judgment	16	52	304	2.02	0.05
Business Education	Intellectual Skills	25	52	483	2.07	0.05
	Man to Man	25	52	454	2.58	0.01

TABLE 55

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY
 SECONDARY RESPONDENTS

Area of Specialization	Outcome	n_1	n_2	U	Z	P
Elementary	Analytical Judgment	32	49	583	2.16	0.05
Higher Education	Ethical	8	49	197	2.44	0.05
History and Philosophy	Intellectual Skills	7	49	49	3.57	0.001
	Man to Country	7	49	85	2.41	0.05
Special Education	Analytical Judgment	16	49	272	2.02	0.05
Math Education	Ethical	13	49	44	2.05	0.05

TABLE 56

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY ELEMENTARY
 RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Educational Psychology	Intellectual Skills	20	32	224	2.08	0.05
History and Philosophy	Intellectual Skills	7	32	27	3.53	0.001
	Man to Country	7	32	55	2.37	0.05
Business Education	Man to Man	25	32	300	2.00	0.05

TABLE 57

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY SCIENCE
 EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
General Administration	Desire for Knowledge	9	52	128	2.39	0.05
Educational Psychology	Desire for Knowledge	9	20	44	2.62	0.01
History and Philosophy	Intellectual Skills	7	9	10	--	0.05
	Man to Country	7	9	12	--	0.05
Business Education	Desire for Knowledge	9	25	66	2.20	0.05

TABLE 58

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY COUNSELING
 AND GUIDANCE RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Educational Psychology	Man to Man	11	20	63	2.12	0.05
History and Philosophy	Intellectual Skills	7	11	12	--	0.05
Business Education	Man to Man	11	25	78	2.34	0.05

TABLE 59

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY MATH
 EDUCATION RESPONDENTS

Area of Specialization	Outcome	n_1	n_2	U	Z	P
General Administration	Analytical Judgment	4	52	44	2.39	0.05
History and Philosophy	Intellectual Skills	4	7	2	--	0.05

TABLE 60

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
 MANN-WHITNEY U's PERFORMED FOR OUTCOMES RATED
 SIGNIFICANTLY HIGHER BY HIGHER
 EDUCATION RESPONDENTS

Area of Specialization	Outcome	n_1	n_2	U	Z	P
History and Philosophy	Intellectual Skills	7	13	13	--	0.05

TABLE 61

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
THE NUMBER OF SIGNIFICANT DIFFERENCES BY
AREA OF SPECIALIZATION AND OUTCOME^a

Outcome		Elementary	Secondary	General Administration	Counseling and Guidance	Educational Psychology	Educational Media	Higher Education	History and Philosophy	Special Education	Business Education	Science Education	Math Education
Possession of Knowledge	H	--	--	--	--	3	--	--	--	--	3	--	--
	L	--	--	--	--	--	--	--	2	2	--	2	--
Intellectual Skills	H	2	1	4	1	--	--	1	--	--	1	1	1
	L	--	--	--	--	2	--	--	8	1	1	--	--
Analytical Judgment	H	--	2	2	--	5	--	--	--	--	1	--	1
	L	3	1	2	--	--	--	--	1	4	--	--	--
Desire for Knowledge	H	--	--	--	--	--	--	--	1	--	--	3	--
	L	--	--	1	--	2	--	--	--	--	1	--	--
Man to Man	H	1	--	2	2	--	--	--	2	2	--	--	--
	L	--	--	--	--	4	--	--	--	--	5	--	--
Man to State	H	--	--	--	--	--	--	--	--	--	--	--	--
	L	--	--	--	--	--	--	--	--	--	--	--	--
Man to Country	H	1	1	1	--	--	--	--	--	--	1	1	--
	L	--	--	--	--	--	--	--	5	--	--	--	--
Man to World	H	--	--	--	--	--	--	--	--	--	--	--	--
	L	--	--	--	--	--	--	--	--	--	--	--	--
Emotional	H	--	--	--	--	--	--	--	2	8	--	--	--
	L	1	2	1	1	2	--	1	--	--	1	1	--
Ethical	H	--	2	--	--	--	--	--	5	--	--	--	--
	L	1	--	1	--	1	--	1	--	--	1	--	2
Vocation- Selective	H	--	--	--	--	--	--	--	--	--	--	--	--
	L	--	--	--	--	--	--	--	--	--	--	--	--
Vocation- Preparative	H	--	--	--	--	1	--	--	--	--	--	--	--
	L	--	--	--	--	--	--	--	--	--	--	1	--

^aH = Significantly Higher
L = Significantly Lower

History and Philosophy. The History and Philosophy respondents demonstrated the greatest tendency to differ significantly from the other Areas of Specialization. They rated Intellectual Skills significantly lower than the respondents in eight Areas of Specialization. Also, they rated the importance of Man to Country significantly lower than the respondents in five Areas. Further, they rated the importance of the Ethical outcome significantly higher than the respondents in five Areas (Table 61).

Educational Psychology. The Educational Psychology respondents rated Analytical Judgment significantly higher than the respondents in five Areas of Specialization and the Possession of Knowledge significantly higher than the respondents in three Areas. At the same time, they rated Man to Man significantly lower than the respondents in four Areas (Table 61).

Special Education. The Special Education respondents rated the Emotional outcome significantly higher than the respondents in eight Areas of Specialization. At the same time, they rated Analytical Judgment significantly lower than the respondents in four Areas (Table 61).

Business Education. The Business Education respondents rated Man to Man significantly lower than the respondents in five Areas of Specialization. In addition, they rated Possession of Knowledge significantly higher than the

respondents in three Areas (Table 61). It should be pointed out that, although the Consumer outcome was not discussed because it was rejected as of no importance by the aggregate respondent sample, the Business Education respondents rated this outcome significantly higher than the respondents in ten of the other eleven Areas of Specialization (Appendix G).

General Administration. The General Administration respondents indicated Intellectual Skills should have been the most important outcome (Appendix G). They rated this outcome significantly higher than the respondents in four Areas (Table 61).

Science Education. The Science Education respondents indicated that Desire for Knowledge should have been the most important outcome (Appendix G). They rated this outcome significantly higher than the respondents in three Areas (Table 61).

Elementary. The Elementary respondents rated Analytical Judgment significantly lower than the respondents in three Areas (Table 61).

Secondary, Counseling and Guidance, Educational Media, Higher Education, and Math Education. The respondents in these five Areas of Specialization did not consistently demonstrate any tendencies to differ significantly (Table 61).

Summary of Tendencies to Differ by Area of Specialization

As was established earlier in the chapter, the aggregate respondent sample indicated that twelve of the sixteen items on the opinionnaire should have been important as outcomes of the doctoral program. It has been determined, however, that respondents in certain Areas of Specialization demonstrated tendencies to differ significantly from the other Areas as to what should have been the importance of particular outcomes. The information presented in Table 62 summarized these tendencies. The History and Philosophy respondents tended to differ more significantly than the respondents in the other Areas. They were followed in order by the Educational Psychology, Special Education, Business Education, General Administration, Science Education, and Elementary respondents. The two tendencies of most significance were that the History and Philosophy respondents rated the Intellectual Skills outcome significantly lower than the respondents in eight Areas and that the Special Education respondents rated the Emotional outcome significantly higher than the respondents in eight Areas.

Tendencies of Perception to Differ by Outcome

The data in Table 63 indicated the number of significant differences for each outcome. The greatest number were recorded for Intellectual Skills. Man to State, Man to World,

TABLE 62

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
SUMMARY OF TYPES AND NUMBERS OF SIGNIFICANT
DIFFERENCES OF THE OUTCOMES BY
AREA OF SPECIALIZATION

Area of Specialization	Significant Differences	
	Higher Outcome (No.)	Lower Outcome (No.)
History and Philosophy	Ethical (5)	Intellectual Skills (8) Man to Country (5)
Educational Psychology	Analytical Judgment (5) Possession of Knowledge (3)	Man to Man (4)
Special Education	Emotional (8)	Analytical Judgment (4)
Business Education ^a	Possession of Knowledge (3)	Man to Man (4)
General Administration	Intellectual Skills (3)	
Science Education	Desire for Knowledge (3)	
Elementary		Analytical Judgment (3)

^aRated the Consumer outcome which was not included because of its relatively low importance significantly higher than the respondents in ten Areas.

TABLE 63

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
NUMBERS AND PERCENTAGES OF SIGNIFICANT
DIFFERENCES BY OUTCOME

Outcome	Significant Differences	
	No.	%
Intellectual Skills	24	18.6
Analytical Judgment	22	16.9
Emotional	20	15.4
Man to Man	18	13.8
Ethical	14	10.7
Possession of Knowledge	12	9.2
Man to Country	10	7.7
Desire for Knowledge	8	6.2
Vocation-Preparative	2	1.5
Man to State	--	--
Man to World	--	--
Vocation-Selective	--	--
Total	130	100.0

and Vocation-Selective had no significant differences and the others were as indicated. The following subsections identify the factors which accounted for the significant differences by outcome.

Intellectual Skills. The significant differences of this outcome were characterized by two factors. One, the History and Philosophy respondents rated it significantly lower than the respondents in eight Areas. Two, the General Administration respondents rated it significantly higher than the respondents in four Areas (Table 61).

Analytical Judgment. The significant differences of this outcome were characterized by two factors. One, the Educational Psychology respondents rated it significantly higher than the respondents in three Areas. Two, the Business Education respondents also rated it significantly higher than the respondents in three Areas (Table 61).

Emotional. One factor characterized the significant differences of this outcome. The Special Education respondents rated it significantly higher than the respondents in eight Areas (Table 61).

Man to Man. Two factors characterized the significant differences of this outcome. One, the Business Education respondents rated it significantly lower than the respondents in five Areas. Two, the Educational Psychology

respondents rated it significantly lower than the respondents in four Areas (Table 61).

Ethical. One factor characterized the significant differences of this outcome. The History and Philosophy respondents rated it significantly higher than the respondents in five Areas (Table 61).

Possession of Knowledge. Two factors characterized the significant differences of this outcome. One, the Educational Psychology respondents rated it significantly higher than the respondents in three Areas. Two, the Business Education respondents rated it significantly higher than the respondents in three Areas (Table 61).

Man to Country. One factor characterized the significant differences of this outcome. The History and Philosophy respondents rated it significantly lower than the respondents in five Areas (Table 61).

Desire for Knowledge. One factor characterized the significant differences of this outcome. The Science Education respondents rated it significantly higher than the respondents in three Areas (Table 61).

Vocation-Preparative, Man to State, Man to World, and Vocation-Selective. The Educational Psychology respondents rated the Vocation-Preparative outcome significantly

higher than the Science Education respondents and vice versa. There were no significant differences as to what should have been the importance of the Man to State, Man to World, and Vocation-Selective outcomes (Table 61).

Summary of the Tendencies
to Differ by Outcome

In Table 64, the factors which accounted for the significant differences were summarized by outcome. The Areas of Specialization and the number of times they rated an outcome significantly higher or lower were identified.

Rating of Outcomes That Should Have Been Important:
A Comparison of the Areas of Specialization
With Respect to Their Significant
Differences

A summary of all significant differences as to what should have been the importance of the outcomes was presented by Area of Specialization in Table 65. The information in the table made it possible to compare the Areas of Specialization with respect to their significant differences. For example, to compare General Administration and History and Philosophy, looking down the General Administration column at the top of the page to the space adjacent to History and Philosophy, we find that the General Administration respondents rated the Intellectual Skills and Man to Country outcomes significantly higher than the History and Philosophy respondents. The reverse is also true; the History and Philosophy respondents rated the Intellectual Skills and the

TABLE 64

RATINGS OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT:
SUMMARY OF TYPES AND NUMBERS OF SIGNIFICANT
DIFFERENCES OF THE AREAS OF SPECIALI-
ZATION BY OUTCOME

Outcome	Significant Differences	
	Higher	Lower
	Area of Spe- cialization (No.)	Area of Spe- cialization (No.)
Intellectual Skills	General Adminis- tration (4)	History and Philosophy (8)
Analytical Judgment	Educational Psychology (5)	Special Education (4) Elementary (3)
Emotional	Special Education (8)	
Man to Man		Business Education (5) Educational Psychology (4)
Ethical	History and Philosophy (5)	
Possession of Knowledge	Educational Psychology (3) Business Education (3)	
Man to Country		History and Philosophy (5)
Desire for Knowledge	Science Education (3)	

TABLE 65

RATING OF OUTCOMES THAT SHOULD HAVE BEEN IMPORTANT: SUMMARY OF ALL SIGNIFICANT DIFFERENCES BY AREA OF SPECIALIZATION^a

Area of Specialization	Elementary	Secondary	General Administration	Counseling and Guidance	Educational Psychology	Educational Media	Higher Education	History and Philosophy	Special Education	Business Education	Science Education	Math Education
Elementary		Judgment	Judgment		Judgment			Ethical	Emotional			
Secondary					Judgment			Emotional	Emotional			
General Administration					Judgment			Ethical	Emotional		Desire	Judgment
Counseling and Guidance									Emotional			
Educational Psychology	Skills		Skills Man to Man	Man to Man				Desire Emotional Ethical Man to Man	Emotional Man to Man		Desire	
Educational Media												
Higher Education		Ethical							Emotional			
History and Philosophy	Skills Man to Country	Skills Man to Country	Skills Man to Country	Skills	Judgment Knowledge		Skills			Skills Man to Country Knowledge	Skills Man to Country	Skills
Special Education		Judgment	Skills Judgment		Judgment Knowledge					Judgment Knowledge		
Business Education	Man to Man		Skills Man to Man	Man to Man				Ethical Man to Man	Emotional Man to Man		Desire	
Science Education					Knowledge Voc.-Prep.				Emotional	Knowledge		
Math Education		Ethical						Ethical				

^aThe Area of Specialization above a specific outcome rated that outcome significantly higher than the Area of Specialization adjacent to the outcome and vice versa.

Man to Country outcomes significantly lower than the General Administration respondents.

Now looking down the History and Philosophy column at the top of the page to the space adjacent to General Administration, we find that the History and Philosophy respondents rated the Ethical outcome significantly higher than the General Administration respondents. Conversely, the General Administration respondents rated the Ethical outcome significantly lower than the History and Philosophy respondents.

To compare Educational Psychology and Special Education, looking down the Educational Psychology column, we find that the Educational Psychology respondents rated the Analytical Judgment and Possession of Knowledge outcomes significantly higher than the Special Education respondents and vice versa. Now looking down the Special Education column, we find that the Special Education respondents rated the Emotional and Man to Man outcomes significantly higher than the Educational Psychology respondents and vice versa. The significant differences between any two Areas of Specialization can be compared in this manner.

Rating of Outcomes That Were Important:
The Significant Differences by
Area of Specialization

There was a higher degree of agreement among the Areas of Specialization as to "what should have been" than

for "what was" the importance of the outcomes. The "what was" differences represented the tendencies of the respondents from certain Areas of Specialization to rate particular outcomes significantly higher or lower than those from other Areas of Specialization.

Number of Significant Differences

The data in Table 66 indicated the number of significant differences for each Area of Specialization. The greatest number were recorded by the History and Philosophy respondents. The Math Education respondents had the least number and the others were as indicated.

Areas of Specialization Compared

The information contained in Tables 67 through 78 shows how each Area of Specialization compared with the other Areas. The comparisons are in terms of the outcomes that were rated significantly higher by each Area in relation to the other Areas.

Tendencies of Perceptions to Differ by Area of Specialization

The information in Table 79 revealed that the respondents in some Areas of Specialization tended to rate what was the importance of certain outcomes significantly higher or lower than respondents in other Areas. Discussed in the following subsections are the tendencies of those in each Area of Specialization to differ significantly from the other

TABLE 66

RATING OF OUTCOMES THAT WERE IMPORTANT: NUMBERS
AND PERCENTAGES OF THE TYPES OF SIGNIFICANT
DIFFERENCES BY AREA OF SPECIALIZATION

Area of Specialization	Significant Differences					
	Higher		Lower		Total	
	No.	%	No.	%	No.	%
History and Philosophy	22	19.8	19	17.4	41	18.5
Elementary	16	14.4	11	9.9	27	12.2
Educational Psychology	16	14.4	8	7.1	24	10.8
Business Education	7	6.3	17	15.3	24	10.8
Secondary	10	9.0	11	9.9	21	9.5
General Administration	13	11.8	5	4.5	18	8.1
Science Education	4	3.6	10	9.0	14	6.3
Educational Media	6	5.4	7	6.3	13	5.8
Counseling and Guidance	5	4.5	8	7.1	13	5.8
Special Education	6	5.4	6	5.4	12	5.4
Higher Education	4	3.6	5	4.5	9	4.1
Math Education	2	1.8	4	3.6	6	2.7
Total	111	100.0	111	100.0	222	100.0

TABLE 67

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY HISTORY AND PHILOSOPHY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Emotional	7	32	61	2.04	0.05
	Ethical	7	32	51	2.54	0.05
	Man to Man	7	32	27	3.42	0.001
	Vocation- Selective	7	32	58	2.04	0.05
Secondary	Emotional	7	49	98	1.96	0.05
	Man to Man	7	49	62	2.92	0.01
	Vocation- Selective	7	49	86	2.27	0.05
General Administration	Man to Man	7	52	43	3.53	0.001
	Man to World	7	52	108	1.96	0.05
Counseling and Guidance	Emotional	7	11	15	--	0.05
	Ethical	7	11	15	--	0.05
	Man to Man	7	11	12	--	0.05
Educational Psychology	Man to Man	7	20	10	3.44	0.001
Higher Education	Man to Man	7	13	7	--	0.05
	Vocation- Selective	7	13	19	--	0.05
Special Education	Man to Man	7	16	12	--	0.05
Business Education	Ethical	7	25	50	1.96	0.05
	Man to Man	7	25	5	3.97	0.0001
	Man to World	7	25	47	2.06	0.05
	Vocation- Selective	7	25	40	2.33	0.05
Science Education	Man to Man	7	9	10	--	0.05
Math Education	Vocation- Selective	4	7	2	--	0.05

TABLE 68

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY ELEMENTARY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Secondary	Desire for Knowledge	32	49	548	2.46	0.05
	Man to World	32	49	570	2.44	0.05
General Administration	Man to World	32	52	591	2.61	0.01
Counseling and Guidance	Man to World	11	32	119	2.01	0.05
Educational Psychology	Man to Man	20	32	204	2.39	0.05
	Man to World	20	32	226	2.16	0.05
History and Philosophy	Intellectual Skills	7	32	31	3.41	0.001
	Man to Country	7	32	60	2.32	0.05
	Vocation-Preparative	7	32	62	1.98	0.05
Special Education	Intellectual Skills	16	32	163	2.44	0.05
	Man to World	16	32	180	2.03	0.05
Business Education	Intellectual Skills	25	32	297	1.98	0.05
	Man to Man	25	32	221	3.23	0.01
	Man to World	25	32	258	2.72	0.01
Science Education	Possession of Knowledge	9	32	68	2.61	0.01
Math Education	Man to World	4	32	32	1.98	0.05

TABLE 69

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY EDUCATIONAL PSYCHOLOGY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Vocation-Preparative	20	32	211	2.21	0.05
	Vocation-Selective	20	32	200	2.36	0.05
Secondary	Vocation-Preparative	20	49	306	2.64	0.01
	Vocation-Selective	20	49	307	2.59	0.01
General Administration	Vocation-Preparative	20	52	372	2.00	0.05
Counseling and Guidance	Emotional	11	20	61	2.17	0.05
Higher Education	Vocation-Selective	13	20	70	2.37	0.05
History and Philosophy	Intellectual Skills	7	20	27	2.68	0.01
	Man to Country	7	20	34	2.43	0.05
	Vocation-Preparative	7	20	20	2.93	0.01
	Possession of Knowledge	7	20	34	2.14	0.05
Business Education	Vocation-Preparative	20	25	176	1.97	0.05
	Vocation-Selective	20	25	145	2.57	0.01
Science Education	Vocation-Preparative	9	20	41	2.40	0.05
	Possession of Knowledge	9	20	32	2.95	0.01
Math Education	Vocation-Selective	4	20	9	2.56	0.05

TABLE 70

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY BUSINESS EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Secondary	Desire for Knowledge	25	49	436	2.16	0.05
Counseling and Guidance	Emotional	11	25	84	2.10	0.05
Educational Media	Analytical Judgment	7	25	33	2.61	0.01
History and Philosophy	Intellectual Skills	7	25	45	2.15	0.05
	Vocation-Preparative	7	25	35	2.76	0.01
Science Education	Vocation-Preparative	9	25	67	2.04	0.05
	Possession of Knowledge	9	25	48	2.73	0.01

TABLE 71

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY SECONDARY RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Man to State	32	49	608	1.98	0.05
Educational Psychology	Man to Man	20	49	306	2.63	0.01
Educational Media	Analytical Judgment	7	49	70	2.78	0.01
Higher Education	Man to State	13	49	204	2.25	0.05
History and Philosophy	Intellectual Skills	7	49	59	3.19	0.01
	Man to Country	7	49	84	2.49	0.05
Special Education	Intellectual Skills	16	49	278	2.03	0.05
	Man to Country	16	49	268	2.18	0.05
Business Education	Man to Man	25	49	338	3.46	0.001
Science Education	Possession of Knowledge	9	49	68	2.61	0.01

TABLE 72

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY GENERAL ADMINISTRATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Man to State	32	52	651	2.01	0.05
	Ethical	32	52	645	1.98	0.05
Educational Psychology	Intellectual Skills	20	52	384	2.02	0.05
	Man to Man	20	52	371	2.04	0.05
Educational Media	Analytical Judgment	7	52	75	2.85	0.01
Higher Education	Man to State	13	52	214	2.41	0.05
History and Philosophy	Intellectual Skills	7	52	41	3.74	0.001
	Vocation-Preparative	7	52	94	2.22	0.05
Special Education	Intellectual Skills	16	52	228	3.15	0.01
Business Education	Intellectual Skills	25	52	422	2.88	0.01
	Man to Man	25	52	417	2.81	0.01
Science Education	Possession of Knowledge	9	52	138	2.13	0.05
Math Education	Vocation-Selective	4	52	42	2.11	0.05

TABLE 73

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY SCIENCE EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Educational Psychology	Analytical Judgment	9	20	48	2.15	0.05
Educational Media	Analytical Judgment	7	20	6	--	0.05
History and Philosophy	Man to Country	7	9	12	--	0.05
Business Education	Man to Man	20	25	59	2.26	0.05

TABLE 74

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY EDUCATIONAL MEDIA RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Emotional	7	32	55	2.30	0.05
Secondary	Emotional	7	49	96	2.04	0.05
Counseling and Guidance	Emotional	7	11	12	--	0.05
History and Philosophy	Intellectual Skills	7	7	8	--	0.05
	Vocation- Preparative	7	7	6	--	0.05
Business Education	Man to Man	7	25	47	1.99	0.05

TABLE 75

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
 U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
 HIGHER BY COUNSELING AND
 GUIDANCE RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Educational Psychology	Man to Man	11	20	65	1.96	0.05
Educational Media	Analytical Judgment	7	11	11	--	0.05
History and Philosophy	Intellectual Skills	7	11	15	--	0.05
	Vocation- Preparative	7	11	15	--	0.05
Business Education	Man to Man	11	25	69	2.55	0.05

TABLE 76

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
 U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
 HIGHER BY SPECIAL EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Elementary	Emotional	16	32	147	2.57	0.01
Secondary	Emotional	16	49	243	2.42	0.05
General Administration	Emotional	16	52	265	2.30	0.05
Counseling and Guidance	Emotional	11	16	35	--	0.05
Educational Media	Analytical Judgment	7	16	18	--	0.05
Science Education	Possession of Knowledge	9	16	36	--	0.05

TABLE 77

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY HIGHER EDUCATION RESPONDENTS

Area of Specialization	Outcome	n ₁	n ₂	U	Z	P
Educational Media	Analytical Judgment	7	13	20	--	0.05
History and Philosophy	Intellectual Skills	7	13	14	--	0.05
Business Education	Man to Man	13	25	103	2.07	0.05
Science Education	Possession of Knowledge	9	13	28	--	0.05

TABLE 78

RATING OF OUTCOMES THAT WERE IMPORTANT: MANN-WHITNEY
U's PERFORMED FOR OUTCOMES RATED SIGNIFICANTLY
HIGHER BY MATH EDUCATION RESPONDENTS

Area of Specialization	Outcome	n_1	n_2	U	Z	P
Secondary	Vocation- Preparative	4	49	43	2.00	0.05
Business Education	Vocation- Preparative	4	25	23	2.02	0.05

TABLE 79

RATING OF OUTCOMES THAT WERE IMPORTANT: THE NUMBER
OF SIGNIFICANT DIFFERENCES BY AREA OF
SPECIALIZATION AND OUTCOME^a

Outcome		Elementary	Secondary	General Administration	Counseling and Guidance	Educational Psychology	Educational Media	Higher Education	History and Philosophy	Special Education	Business Education	Science Education	Math Education
Possession of Knowledge	H	1	1	1	--	2	--	1	--	1	1	--	--
	L	--	--	--	--	--	--	--	1	--	--	7	--
Intellectual Skills	H	3	2	4	1	1	1	1	--	--	1	--	--
	L	--	--	--	--	1	--	--	8	3	2	--	--
Analytical Judgment	H	--	1	1	1	--	--	1	--	1	1	2	--
	L	--	--	--	--	1	7	--	--	--	--	--	--
Desire for Knowledge	H	1	--	--	--	--	--	--	--	--	1	--	--
	L	--	2	--	--	--	--	--	--	--	--	--	--
Man to Man	H	2	2	2	2	--	1	1	9	--	--	1	--
	L	1	1	1	1	5	--	1	--	1	8	1	--
Man to State	H	--	2	2	--	--	--	--	--	--	--	--	--
	L	2	--	--	--	--	--	2	--	--	--	--	--
Man to Country	H	1	2	--	--	1	--	--	--	--	--	1	--
	L	--	--	--	--	--	--	--	4	1	--	--	--
Man to World	H	7	--	--	--	--	--	--	2	--	--	--	--
	L	--	1	2	1	1	--	--	--	1	2	--	1
Emotional	H	--	--	--	--	1	3	--	3	4	1	--	--
	L	3	3	1	5	--	--	--	--	--	--	--	--
Ethical	H	--	--	1	--	--	--	--	3	--	--	--	--
	L	2	--	--	1	--	--	--	--	--	1	--	--
Vocation- Selective	H	--	--	1	--	5	--	--	5	--	--	--	--
	L	2	2	--	--	--	--	2	--	--	2	--	3
Vocation- Preparative	H	1	--	1	1	6	1	--	--	--	2	--	2
	L	1	2	1	--	--	--	--	6	--	2	2	--

^aH = Significantly Higher
L = Significantly Lower

Areas in their perceptions of what was the importance of the respective outcomes.

History and Philosophy. The History and Philosophy respondents demonstrated the greatest tendency to differ significantly from the other Areas of Specialization. They rated Man to Man significantly higher than the respondents in nine Areas. At the same time they rated Vocation-Selective significantly higher than the respondents in five Areas. They rated both Emotional and Ethical significantly higher than the respondents in three Areas. On the other hand, they rated Intellectual Skills, Vocation-Preparative, and Man to Country significantly lower than the respondents in eight, six, and four Areas, respectively (Table 79).

Elementary. The Elementary respondents had the second greatest number of significant differences. They rated Man to World and Intellectual Skills significantly higher than the respondents in seven and three Areas, respectively. At the same time, they rated Emotional significantly lower than the respondents in three Areas (Table 79).

Educational Psychology. The Educational Psychology respondents rated Vocation-Preparative and Vocation-Selective significantly higher than the respondents in six and five Areas, respectively. In addition, they rated Man to Man significantly lower than the respondents in five Areas (Table 79).

Business Education. The Business Education respondents rated Man to Man significantly lower than the respondents in eight of the other eleven Areas (Table 79). It should be noted that, although the Consumer outcome was not included because it was rejected as of no importance by the aggregate respondent sample, the Business Education respondents rated this outcome significantly higher than the respondents in ten of the other eleven Areas of Specialization (Appendix G).

Secondary Education, General Administration, Science Education, Educational Media, Counseling and Guidance, Special Education, Higher Education, and Math Education.

The respondents in these eight Areas of Specialization accounted for less than half (47.7 per cent) of the total significant differences (Table 66). Their tendencies to differ significantly were as follows: The Secondary respondents rated the Emotional outcome significantly lower than the respondents in three Areas; the General Administration respondents rated Intellectual Skills significantly higher than the respondents in four Areas; the Science Education respondents rated the Possession of Knowledge significantly lower than the respondents in seven Areas; the Educational Media respondents rated Emotional significantly higher and Analytical Judgment significantly lower than the respondents in three and seven Areas, respectively; the Counseling and

Guidance respondents rated Emotional significantly lower than the respondents in five Areas; the Special Education respondents rated Emotional significantly higher and Intellectual Skills significantly lower than the respondents in four and three Areas, respectively; and the Math Education respondents rated Vocation-Selective significantly lower than the respondents in three Areas. The Higher Education respondents did not demonstrate any consistent tendency to differ significantly from the other Areas (Table 79).

Summary of Tendencies to Differ
by Area of Specialization

It was established that respondents in certain Areas of Specialization demonstrated tendencies to differ significantly from the other Areas as to what was the importance of particular outcomes. The information in Table 80 summarized these tendencies. The History and Philosophy respondents tended to differ more significantly than the respondents in the other Areas. They were followed in order by the Elementary, Educational Psychology, Business Education, Secondary, General Administration, Science Education, Educational Media, Counseling and Guidance, Special Education, and Math Education respondents. The most significant tendencies were that the History and Philosophy respondents rated Man to Man significantly higher and Intellectual Skills significantly lower than the respondents in nine and eight Areas, respectively. Further, the Business Education respondents rated Man to Man

TABLE 80

RATING OF OUTCOMES THAT WERE IMPORTANT: SUMMARY OF
TYPES AND NUMBERS OF SIGNIFICANT DIFFERENCES OF
THE OUTCOMES BY AREA OF SPECIALIZATION

Area of Specialization	Significant Differences	
	Higher Outcome (No.)	Lower Outcome (No.)
History and Philosophy	Man to Man (9) Vocation- Selective (5) Emotional (3) Ethical (3)	Intellectual Skills (8) Vocation- Preparative (6) Man to Country (4)
Elementary	Man to World (7) Intellectual Skills (3)	Emotional (3)
Educational Psychology	Vocation- Preparative (6) Vocation- Selective (5)	Man to Man (5)
Business Education ^a Secondary		Man to Man (8) Emotional (3)
General Administration	Intellectual Skills (4)	
Science Education		Possession of Knowledge (7)
Educational Media	Emotional (3)	Analytical Judgment (7)
Counseling and Guidance		Emotional (5)
Special Education	Emotional (4)	Intellectual Skills (3)
Math Education		Vocation- Selective (3)

^aRated the Consumer outcome which was not included because of its relatively low importance significantly higher than the respondents in ten Areas.

significantly lower than the respondents in eight Areas. In addition, the Elementary respondents rated Man to World significantly higher than the respondents in seven Areas. The Science Education respondents rated Possession of Knowledge and the Educational Media respondents rated Analytical Judgment significantly lower than the respondents in seven Areas of Specialization.

Tendencies of Perceptions to Differ by Outcome

The data in Table 81 indicated the number of significant differences for each outcome. The greatest number were recorded for Man to Man. Desire for Knowledge had the least number of significant differences and the others were as indicated. The following subsections identify the factors which accounted for the significant differences by outcome.

Man to Man. Three factors characterized the differences of this outcome. One, the History and Philosophy respondents rated it significantly higher than the respondents in nine Areas. Two, the Business Education respondents rated it significantly lower than the respondents in eight Areas. Three, the Educational Psychology respondents rated it significantly lower than the respondents in five Areas (Table 79).

Intellectual Skills. Four factors characterized the significant differences of this outcome. One, the History and Philosophy respondents rated it significantly lower than

TABLE 81

RATING OF OUTCOMES THAT WERE IMPORTANT: NUMBERS
AND PERCENTAGES OF SIGNIFICANT DIFFERENCES
BY OUTCOME

Outcome	Significant Differences	
	No.	%
Man to Man	40	18.0
Intellectual Skills	28	12.6
Vocation-Preparative	28	12.6
Emotional	24	10.9
Vocation-Selective	22	9.9
Man to World	18	8.1
Analytical Judgment	16	7.2
Possession of Knowledge	16	7.2
Man to Country	10	4.5
Ethical	8	3.6
Man to State	8	3.6
Desire for Knowledge	4	1.8

the respondents in eight Areas of Specialization. Two, the General Administration respondents rated it significantly higher than the respondents in four Areas. Three, the Special Education respondents rated it significantly lower than the respondents in three Areas. Four, the Elementary respondents rated it significantly higher than the respondents in three Areas (Table 79).

Vocation-Preparative. Two factors characterized the significant differences of this outcome. One, the Educational Psychology respondents rated it significantly higher than the respondents in six Areas. Two, the History and Philosophy respondents rated it significantly lower than the respondents in six Areas (Table 79).

Emotional. Six factors characterized the significant differences of this outcome. One, the Special Education respondents rated it significantly higher than the respondents in four Areas. Two, the Educational Media respondents rated it significantly higher than the respondents in three Areas. Three, the History and Philosophy respondents rated it significantly higher than the respondents in three Areas. On the other hand, four, the Counseling and Guidance respondents rated it significantly lower than the respondents in five Areas. Five, the Elementary respondents rated it significantly lower than the respondents in three Areas. Six, the respondents in Secondary rated it significantly lower than

the respondents in three Areas (Table 79).

Vocation-Selective. Three factors characterized the significant differences of this outcome. One, the Educational Psychology respondents rated it significantly higher than the respondents in five Areas. Two, the History and Philosophy respondents rated it significantly higher than the respondents in five Areas. Three, the Math Education respondents rated it significantly lower than the respondents in three Areas (Table 79).

Man to World. The significant differences of this outcome were characterized by one factor. The Elementary respondents rated it significantly higher than the respondents in seven Areas (Table 79).

Analytical Judgment. The significant differences of this outcome were characterized by one factor. The Educational Media respondents rated it significantly lower than the respondents in seven Areas (Table 79).

Possession of Knowledge. The significant differences of this outcome were characterized by one factor. The Science Education respondents rated it significantly lower than the respondents in seven Areas (Table 79).

Man to Country. The significant differences of this outcome were characterized by one factor. The History and

Philosophy respondents rated it significantly lower than the respondents in four Areas (Table 79).

Ethical. The significant differences of this outcome were characterized by one factor. The History and Philosophy respondents rated it significantly higher than the respondents in three Areas (Table 79).

Summary of the Tendencies
to Differ by Outcome

In Table 82, the factors which accounted for the significant differences were summarized by outcome. The Areas of Specialization and the number of times they rated an outcome significantly higher or lower were identified.

Rating of Outcomes That Were Important: A
Comparison of the Areas of Specializa-
tion With Respect to Their
Significant Differences

A summary of all significant differences as to what was the importance of the outcomes is presented in Table 83. The information in the table made it possible to compare the Areas of Specialization with respect to their significant differences. For example, looking down the Elementary column, we find that the Elementary respondents rated Intellectual Skills, Man to Country, and Vocation-Preparative significantly higher than the History and Philosophy respondents. Conversely, the History and Philosophy respondents rated those outcomes significantly lower than the Elementary respondents.

TABLE 82

RATING OF OUTCOMES THAT WERE IMPORTANT: SUMMARY OF
TYPES AND NUMBERS OF SIGNIFICANT DIFFERENCES
OF THE AREA OF SPECIALIZATION BY OUTCOME

Outcome	Significant Differences	
	Higher	Lower
	Area of Specialization (No.)	Area of Specialization (No.)
Man to Man	History and Philosophy (9)	Business Education (8) Educational Psychology (5)
Intellectual Skills	General Administration (4) Elementary (3)	History and Philosophy (8) Special Education (3)
Vocation-Preparative	Educational Psychology (6)	History and Philosophy (6)
Emotional	Special Education (4) Educational Media (3) History and Philosophy (3)	Counseling and Guidance (5) Elementary (3) Secondary (3)
Vocation-Selective	Educational Psychology (5) History and Philosophy (5)	Math Education (3)
Man to World	Elementary (7)	
Analytical Judgment		Educational Media (7)
Possession of Knowledge		Science Education (7)
Man to Country		History and Philosophy (4)
Ethical	History and Philosophy (3)	

TABLE 83
 RATING OF OUTCOMES THAT WERE IMPORTANT: SUMMARY OF ALL SIGNIFICANT
 DIFFERENCES BY AREA OF SPECIALIZATION^a

Area of Specialization	Elementary	Secondary	General Administration	Counseling and Guidance	Educational Psychology	Educational Media	Higher Education	History and Philosophy	Special Education	Business Education	Science Education	Math Education
Elementary		Man to State	Man to State Ethical		Voc.- Prep. Voc.- Selec.	Emo- tional		Emo- tional Ethical Man to Man Voc.- Selec.	Emo- tional			
Secondary	Desire Man to World				Voc.- Prep. Voc.- Selec.	Emo- tional		Emo- tional Man to Man Voc.- Selec.	Emo- tional	Desire		Voc.- Prep.
General Administration	Man to World				Voc.- Prep.			Man to Man Man to World	Emo- tional			
Counseling and Guidance	Man to World				Emo- tional	Emo- tional		Emo- tional Ethical Man to Man	Emo- tional	Emo- tional		
Educational Psychology	Man to Man Man to World	Man to Man	Skills Man to Man	Man to Man				Man to Man			Judg- ment	
Educational Media		Judgment	Judgment	Judgment			Judg- ment		Judgment	Judgment	Judg- ment	
Higher Education		Man to State	Man to State		Voc.- Selec.			Man to Man Voc.- Selec.				
History and Philosophy	Skills Man to Country Voc.- Prep.	Skills Man to Country	Skills Voc.- Prep.	Skills Voc.- Prep.	Skills Man to Country Voc.- Prep. Knowl- edge	Skills Voc.- Prep.	Skills			Skills Voc.- Prep.	Man to Country	
Special Education	Skills Man to World	Skills Man to Country	Skills					Man to Man				
Business Education	Skills Man to Man Man to World	Man to Man	Skills Man to Man	Man to Man	Voc.- Prep. Voc.- Selec.	Man to Man	Man to Man	Ethical Man to Man Man to World Voc.- Selec.			Man to Man	Voc.- Prep.
Science Education	Knowl- edge	Knowl- edge	Knowl- edge		Voc.- Prep. Knowl- edge		Knowl- edge	Man to Man	Knowl- edge	Voc.- Prep. Knowl- edge		
Math Education	Man to World		Voc.- Selec.		Voc.- Selec.			Voc.- Selec.				

^aThe Area of Specialization above a specific outcome rated that outcome significantly higher than the Area of Specialization adjacent to the outcome and vice versa.

at the same time, looking down the History and Philosophy column, we find that the History and Philosophy respondents rated Emotional, Ethical, Man to Man, and Vocation-Selective significantly higher than the Elementary respondents, while the Elementary respondents rated these outcomes significantly lower than the History and Philosophy respondents. The significant differences between any two Areas of Specialization can be compared in this manner.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

Although it is generally agreed that the doctor's degree is fulfilling an important function in American society, there is disagreement about what this function is and/or should be. A great deal has been written about this issue in American higher education, but there has been little systematic or empirical study of the function of the degree itself. The study reported herein is one such attempt.

One approach to studying such questions, and the one utilized in this study, is to focus on the study of a particular doctoral program. The program of the College of Education, University of Oklahoma, which was representative of the growth experienced at the state and national levels during the decade of the '60's was selected. The study focuses on the perceptions of selected individuals who completed the program between 1959-60 and 1969-70.

The Problem

The problem of the study was to assess the perceptions of selected individuals who completed the doctoral

program with respect to what the actual outcomes of the doctoral program were as opposed to what they should have been as perceived by these individuals.

Design of Study

The basic research instrument was a mailed opinionnaire which included sixteen possible educational outcomes of the doctoral program. Each respondent was asked to indicate, from least (1) to most (5), what the relative importance of each outcome was as an outcome of the doctoral program. In addition, they were asked to indicate what the relative importance of each outcome should have been as an outcome of the doctoral program. This provided an assessment of the actual and ideal functions of the doctoral program as perceived by these individuals and an opportunity to analyze the discrepancy between the two. Respondents were also asked to provide general information about their Age, Sex, Area of Specialization, Professional Position, Income, and Age at the time they received the doctor's degree.

The findings, conclusions, and implications which follow should be viewed with the limitations of the study in mind. The responses of those who participated in the study were limited to the items listed in the instrument. The purpose of the opinionnaire, as stated previously, was to provide most of the possible outcomes of the doctoral program in order that the individual participant could indicate his

perceptions as to the importance of each. Further, there is the usual question of what constitutes an adequate sample. The sample consisted of 247 of the 415 individuals who received the doctor's degree from the College of Education, University of Oklahoma, between 1959-60 and 1969-70.

Findings

General Information

An analysis of the general information obtained from the respondents was made. Statistical analyses were performed to determine the degree of relationship among the variables of Area of Specialization, Professional Position, Income, and Sex. The sample was distributed into twelve Areas of Specialization. In addition, there was a thirteenth Area entitled "Other" which included two respondents. The mean age at the time of receiving the degree was 38.0 years and at the time of the study, 41.8 years. The findings with respect to the general information were as follows:

I. Professional Position

A. By Type

1. Administration and/or Teaching--92.4 per cent
 - a) Administration--39.7 per cent
 - b) Teaching--40.1 per cent
 - c) Combination of Administration and Teaching--12.6 per cent
2. Research--0.4 per cent
3. Combination of Teaching and Research--1.6 per cent

B. By Sector

1. Elementary and/or Secondary--18.6 per cent

- a) Administration--84.7 per cent
- b) Teaching--8.7 per cent

2. Higher Education--72.9 per cent

- a) Administration--26.1 per cent
- b) Teaching--51.6 per cent
- c) By Institutional Type

- (1) Junior College--6.7 per cent
- (2) Senior College--39.4 per cent
- (3) University--53.9 per cent

3. Educational or Service Agency--8.5 per cent

- a) Administration--57.1 per cent
- b) Teaching--9.5 per cent

C. The relationships between Area of Specialization and the following variables were statistically significant.

- 1. Type of Professional Position
- 2. Sector
- 3. Institutional Type

D. The relationship between Type of Professional Position and Sector was statistically significant.

II. Income

A. Median Annual Income--\$16,590

1. By Area of Specialization

- a) From \$12,500 (History and Philosophy)
- b) To \$18,400 (General Administration)

2. By Type of Professional Position

- a) \$17,717 (Administration)
- b) \$15,372 (Teaching)

3. By Sector

- a) \$18,214 (Educational or Service Agency)
- b) \$16,595 (Higher Education)
- c) \$15,882 (Elementary and/or Secondary)

4. By Institutional Type

- a) \$17,500 (Junior College)
- b) \$16,833 (University)
- c) \$16,220 (Senior College)

5. By Sex

- a) \$16,976 (Males)
- b) \$13,889 (Females)

B. The relationships between Income and the following variables were statistically significant.

- 1. Type of Professional Position
- 2. Sector
- 3. Sex

III. Sex

A. Aggregate Sample--247 (100.0 per cent)

- 1. Males--213 (86.2 per cent)
- 2. Females--34 (13.8 per cent)

B. Areas of Specialization

- 1. Elementary and Business Education--
 - 17.4 per cent of Males
 - 58.8 per cent of Females
 - a) Elementary-- 9.4 per cent of Males
35.3 per cent of Females
 - b) Business Education--
 - 8.0 per cent of Males
 - 23.5 per cent of Females
- 2. General Administration--
 - 24.4 per cent of Males
 - 0.0 per cent of Females

C. Type of Professional Position

1. Administration--44.1 per cent of Males
11.8 per cent of Females
2. Teaching--36.2 per cent of Males
64.7 per cent of Females

D. The relationships between Sex and the following variables were significant.

1. Area of Specialization
2. Type of Professional Position

Significant Discrepancies Between the Ideal and Actual Functions of the Doctoral Program for the Aggregate Respondent Sample

The aggregate respondent sample indicated that there were significant discrepancies between the actual and ideal functions of the doctoral program as perceived by these individuals. The discrepancies were as follows:

I. Intellectual Outcomes

- A. The doctoral program did emphasize Intellectual outcomes but not to the degree respondents thought it should have. Further, the respondents indicated the need for a reordering of priorities among the Intellectual outcomes.
 1. Analytical Judgment: This outcome should be given greater emphasis and the highest priority of the outcomes.
 2. Desire for Knowledge: This outcome should be given greater emphasis and the second highest priority of the outcomes.
 3. Intellectual Skills and Possession of Knowledge: These two outcomes should be of great importance but should have lower priority in relation to the Analytical Judgment and Desire for Knowledge outcomes.

II. Vocational Outcomes

- A. The doctoral program emphasized the Vocational outcomes more than the respondents thought it should have.

III. Social Outcomes

- A. The respondents indicated the need for greater emphasis in the doctoral program on the development of social perspective.

IV. Personal Outcomes

- A. The respondents indicated the need for greater emphasis in the doctoral program on the development of moral and ethical integrity.

Significant Discrepancies Between the Ideal and Actual Functions of the Doctoral Program by Area of Specialization

The respondents in seven of the twelve Areas of Specialization indicated that there were significant discrepancies between the actual and ideal functions of their doctoral programs as they perceived them. The discrepancies were as follows:

I. Secondary

A. Intellectual Outcomes

1. Analytical Judgment: This outcome should be given greater emphasis and the highest priority of the outcomes.
2. Desire for Knowledge: This outcome should be given greater emphasis and second highest priority of the outcomes.
3. Possession of Knowledge: This outcome should be of great importance but should have lower priority than the other Intellectual outcomes.

B. Vocational Outcomes

1. Vocation-Preparative: This outcome should have less emphasis and lower priority than the Intellectual and Ethical outcomes.

C. Personal Outcomes

1. Ethical: This outcome should have greater emphasis with only the Intellectual outcomes having higher priority.

II. General Administration

A. Intellectual Outcomes

1. Analytical Judgment: This outcome should be given greater emphasis with only the Intellectual Skills outcome having higher priority.
2. Desire for Knowledge: This outcome should be given greater emphasis with only the other Intellectual outcomes having higher priority.

B. Vocational Outcomes

1. Vocation-Preparative: This outcome should be given less emphasis and lower priority than the Intellectual outcomes.
2. Vocation-Selective: This outcome should be given less emphasis and lower priority than both the Intellectual and Social outcomes.

III. Elementary

A. Vocational Outcomes

1. Vocation-Preparative: This outcome should be given less emphasis and lower priority than both the Intellectual and Ethical outcomes.

B. Personal Outcomes

1. Ethical: This outcome should be given greater emphasis with only the Intellectual outcomes having higher priority.

IV. Educational Psychology

A. Intellectual Outcomes

1. Analytical Judgment: This outcome should be given greater emphasis and the highest priority of the outcomes.
2. Vocation-Selective: This outcome should be given less emphasis and lower priority than the Intellectual, Social, and Personal outcomes.

V. History and Philosophy

A. Intellectual Outcomes

1. Desire for Knowledge: This outcome should be given greater emphasis and the highest priority of the outcomes.

B. Vocational Outcomes

1. Vocation-Selective: This outcome should be given less emphasis and lower priority than the Intellectual, Social, and Personal outcomes.

VI. Business Education

A. Intellectual Outcomes

1. Analytical Judgment: This outcome should be given greater emphasis and the highest priority of the outcomes.

B. Vocational Outcomes

1. Vocation-Preparative: This outcome should be given less emphasis and lower priority than the Intellectual outcomes.

VII. Educational Media

A. Intellectual Outcomes

1. Analytical Judgment: This outcome should be given greater emphasis and along with Desire for Knowledge, the highest priority of the outcomes.

Rating of Outcomes That Should Have
Been Important: Significant Dif-
ferences by Area of Specialization

The respondents in seven of the twelve Areas of Specialization varied from the other Areas in their perceptions of the outcomes that should have been important. In descending order of their number of significant differences, these Areas of Specialization tended to rate the outcomes significantly more or less important than the other Areas as follows:

I. History and Philosophy

- A. Ethical: Tended to rate this outcome more important.
- B. Intellectual Skills and Man to Country: Tended to rate these outcomes less important.

II. Educational Psychology

- A. Analytical Judgment and Possession of Knowledge: Tended to rate these outcomes more important.
- B. Man to Man: Tended to rate this outcome less important.

III. Special Education

- A. Emotional: Tended to rate this outcome more important.
- B. Analytical Judgment: Tended to rate this outcome less important.

IV. Business Education

- A. Possession of Knowledge and Consumer: Tended to rate these outcomes more important.
- B. Man to Man: Tended to rate this outcome less important.

V. General Administration

- A. Intellectual Skills: Tended to rate this outcome more important.

VI. Science Education

- A. Desire for Knowledge: Tended to rate this outcome more important.

VII. Elementary

- A. Analytical Judgment: Tended to rate this outcome less important.

Rating of Outcomes That Were Important: Significant Differences by Area of Specialization

There were more significant differences among the Areas of Specialization in rating the outcomes that were important than in rating the outcomes that should have been important. This indicated a lower degree of agreement among the Areas as to the actual function than to the ideal function of the doctoral program. In descending order of their number of significant differences, the Areas of Specialization tended to rate the outcomes significantly more or less important than the other Areas as follows:

I. History and Philosophy

- A. Man to Man, Vocation-Selective, Ethical, and Emotional: Tended to rate these outcomes more important.
- B. Intellectual Skills, Vocation-Preparative, and Man to Country: Tended to rate these outcomes less important.

II. Elementary

- A. Man to World and Intellectual Skills: Tended to rate these outcomes more important.
- B. Emotional: Tended to rate this outcome less important.

III. Educational Psychology

- A. Vocation-Preparative and Vocation-Selective: Tended to rate these outcomes more important.
- B. Man to Man: Tended to rate this outcome less important.

IV. Business Education

- A. Consumer: Tended to rate this outcome more important.
- B. Man to Man: Tended to rate this outcome less important.

V. Secondary

- A. Emotional: Tended to rate this outcome less important.

VI. General Administration

- A. Intellectual Skills: Tended to rate this outcome more important.

VII. Science Education

- A. Possession of Knowledge: Tended to rate this outcome less important.

VIII. Educational Media

- A. Emotional: Tended to rate this outcome more important.
- B. Analytical Judgment: Tended to rate this outcome less important.

IX. Counseling and Guidance

- A. Emotional: Tended to rate this outcome less important.

X. Special Education

- A. Emotional: Tended to rate this outcome more important.
- B. Intellectual Skills: Tended to rate this outcome less important.

XI. Math Education

- A. Vocation-Selective: Tended to rate this outcome less important.

XII. Higher Education

- A. Did not tend to rate any of the outcomes more or less important than the other Areas.

Conclusions

The following conclusions can be drawn from the study:

1. The emphasis of the doctoral program should be the traditional emphasis on the cultivation of those tools and habits of mind which enable the individual to go beyond that he has learned and to exercise independence in understanding and judgment.
2. The traditional concept of the doctoral program should be expanded to include the dimensions of social perspective and moral and ethical integrity.
3. There was a strong vocational emphasis in the doctoral program.

4. The primary discrepancy in the doctoral program was an overemphasis on the practical in relation to the theoretical outcomes in certain Areas of Specialization.

5. The function of the doctoral program tended to be unique with the Area of Specialization.

a) Basically different educational philosophies appeared to be operative among the Areas of Specialization in their perceptions of the ideal function of the doctoral program.

b) There was a low degree of agreement among the Areas of Specialization in their perceptions of the actual function of the doctoral program.

6. Graduates of the doctoral program found employment in a narrow range of professional positions.

7. The educational and vocational functions of the doctoral program for females were more limited than for males.

Implications

1. The need to give highest priority in the doctoral program to the theoretical, abstract outcomes such as Analytical Judgment and Desire for Knowledge implies the need to determine just what experiences would be most closely related to the realization of these outcomes.

2. Further study would be warranted to determine what types of experiences would contribute to the achievement of social perspective and moral and ethical integrity through the doctoral program.

3. The primary discrepancy in the doctoral program, an overemphasis on the practical at the expense of the theoretical outcomes, was especially evident in those Areas of Specialization, Secondary and General Administration, which had the dual functions of the doctoral program and the certification of administrators. This suggests the dilemma of trying to fulfill two basically unique functions through one program. Further study would be warranted to determine if this dilemma exists and, if it does, the feasibility of devising a division of labor within these Areas in order to serve these two important, but possibly conflicting, functions.

4. The limited function of the doctoral program for females needs to be analyzed in the broader societal perspective of the supply and demand for professionally qualified females. On the basis of this study, it would not be reasonable, for example, to recommend that greater emphasis be given to the training of female administrators if they could not obtain positions which would allow them to exercise their expertise. This problem is part of the larger cultural problem of the definition, or re-definition, of the feminine roll in American society. Without this broader societal perspective, it is not feasible to make recommendations about expanding the educational and vocational opportunities for females through the doctoral program.

5. Area of Specialization appeared to be importantly related to several of the findings from the study. Further study would be warranted to determine which factors among the following contributed most to these findings:

- a) The unique qualities of the faculty members in the respective Areas of Specialization.
- b) The unique characteristics of the students who specialized in each Area.
- c) The relationship between the characteristics of the students and the professional position they held.
- d) The relationship between choice of an Area of Specialization by the students and their desire to be prepared for and obtain a particular type of professional position.

The study was intended to clarify the actual and ideal functions of the doctoral program and to identify areas of significant discrepancy between the two. If this research can help to focus attention on the needs existing in the program while providing a point of departure for constructively and effectively serving these needs, then it will have achieved its most important purpose.

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APPENDIX A

LETTER OF INTRODUCTION

APPENDIX A

We need your assistance in obtaining information about the quality of our alumni and the nature of our educational programs. By answering the questions of the attached opinionnaire and information sheet, you will provide us with some valuable data.

Institutional research is becoming an increasingly important phenomenon in institutions of higher education. An extremely important aspect of this process is a long term assessment by the institution of the quality as well as the quantity of its outputs using external, less academic, more total measures of the economic, social, and personal attributes of alumni. It is equally important to provide the alumni with the opportunity to evaluate the educational programs of the institution. As a graduate of the doctoral program of the College of Education, University of Oklahoma, you can provide us with some immeasurably helpful information.

First, the general information sheet will provide us with information about you personally. Second, the opinionnaire will provide you with the opportunity to evaluate the doctoral program with respect to the importance of sixteen items as outcomes of the doctoral program. It is necessary that we have this information. The time you spend in providing this information will be your contribution to a significant project.

I would like to extend in advance my sincere appreciation for your assistance in this endeavor.

Cordially,

James D. Bednar
Director of Registration

JDB:sd

Enclosures 4

APPENDIX B

GENERAL INFORMATION SHEET

APPENDIX B

GENERAL INFORMATION

1. Name (optional) _____
2. Sex: Male _____ Female _____
3. Age _____
4. Area of Specialization in the Doctoral Program. (Check one.)

_____ Elementary	_____ Higher Education
_____ Secondary	_____ History and Philosophy
_____ General Administration	_____ Special Education
_____ Counseling and Guidance	_____ Business Education
_____ Educational Psychology	_____ Science Education
_____ Other (Specify) _____	
5. Professional Position:
 - A. _____ Administration
 _____ Teaching
 _____ Research
 _____ Counseling
 _____ Other (Specify) _____
 - B. _____ Elementary and/or Secondary

_____ Public	_____ Private
_____ Higher Education	
_____ Junior College	
_____ Senior College	
_____ University	
_____ Public	_____ Private
 - C. _____ Educational or Service Agency

_____ Public	_____ Private
--------------	---------------
6. Income:

_____ Below \$10,000	_____ \$20,000 - \$24,999
_____ \$10,000 - \$14,999	_____ \$25,000 - \$29,999
_____ \$15,000 - \$19,999	_____ Over \$30,000
7. Your age at the time you received the doctor's degree _____.
8. The year in which you received the doctor's degree _____.

APPENDIX C

INSTRUCTIONS FOR OPINIONNAIRE

APPENDIX C

INSTRUCTIONS FOR OPINIONNAIRE

You are being asked to indicate your perception of the importance of the following items as outcomes of the doctoral program. This is not a test of your knowledge or skill; there are no right or wrong answers or responses. You are merely asked to indicate your perception as to what should have been the importance of these items as outcomes of the doctoral program and what actually was the importance of these items as outcomes of the doctoral program.

PLEASE DO THE FOLLOWING:

1. Read the list of items and ask yourself the question, "Which outcomes should have been important and which should not have been important?"
2. Indicate the importance of these items in the following manner (in the left column):
 - a. Place a plus mark (+) in the space opposite those five (5) outcomes that you think should have been most important.
 - b. Place a zero (0) in the space opposite those five (5) outcomes that you think should have been least important.
 - c. That means that there should be six outcomes that are not marked.
 - d. Now go back to those items you have marked with a plus mark (+) and place another plus mark in the space representing the outcome that you think should have been the most important outcome of all. (++)
 - e. Then go to the items you have marked with a zero (0) and place another zero in the space representing the outcome that you think should have been the least important of all. (00)
3. Now re-read the list of items and indicate what the importance actually was of these outcomes in the doctoral program in the following manner (in the right column):
 - a. Place a plus mark (+) in the space opposite the five (5) outcomes that were most important.
 - b. Place a zero (0) in the space opposite the five (5) outcomes that were least important.
 - c. Place another plus mark (++) in the space opposite the outcome that was of greatest importance.
 - d. Place another zero (00) in the space opposite the outcome that was of least importance.

APPENDIX D

THE OPINIONNAIRE

- ```

1 item should be marked ++ -- Of most importance of all items
1 item should be marked 00 -- Of least importance of all items
4 items should be marked + -- Of great importance
4 items should be marked 0 -- Of little importance
6 items should have no marks -- Of medium importance

```

## **APPENDIX E**

### **THE TASK OF PUBLIC EDUCATION: A CONCEPTUAL FRAMEWORK**

## APPENDIX F

## A. Intellectual Dimensions

1. POSSESSION OF KNOWLEDGE: A fund of information. Concepts.
2. COMMUNICATION OF KNOWLEDGE: Skill to acquire and transmit.
3. CREATION OF KNOWLEDGE: Discrimination and imagination, a habit.
4. DESIRE FOR KNOWLEDGE: A love for learning.

## B. Social Dimensions

5. MAN TO MAN: Cooperation in day-to-day relations.
6. MAN TO STATE: Civic rights and duties.
7. MAN TO COUNTRY: Loyalty to one's own country.
8. MAN TO WORLD: Inter-relationships of peoples.

## C. Personal Dimensions

9. PHYSICAL: Bodily health and development.
10. EMOTIONAL: Mental health and stability.
11. ETHICAL: Moral integrity.
12. AESTHETIC: Cultural and leisure pursuits.

## D. Productive Dimensions

13. VOCATION-SELECTIVE: Information and guidance.
14. VOCATION-PREPARATIVE: Training and placement.
15. HOME AND FAMILY: Housekeeping, do-it-yourself, family.
16. CONSUMER: Personal buying, selling and investment.

**APPENDIX F**

**THE TASK OF PUBLIC EDUCATION:  
THE COLLEGE INSTRUMENT**

## APPENDIX F

## COLLEGE

What Should Be the Emphasis  
Given to the Following Tasks  
by the College?

What Is the Emphasis  
Given to the Following  
Tasks by the Colleges?

WHAT SHOULD BEWHAT IS

- |     |                                                                                                                                                  |     |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ___ | 1. Competency in using skills necessary for acquiring knowledge and skill in transmitting this knowledge through oral and written communication. | ___ |
| ___ | 2. Enjoyment of cultural activities -- the finer things of life.                                                                                 | ___ |
| ___ | 3. An understanding of government and a sense of civic responsibility.                                                                           | ___ |
| ___ | 4. A well cared for, well developed body.                                                                                                        | ___ |
| ___ | 5. Loyalty to America and the postulates and principles of democratic processes.                                                                 | ___ |
| ___ | 6. Specialized training for placement in a specific job.                                                                                         | ___ |
| ___ | 7. A continuing desire for knowledge -- the inquiring mind.                                                                                      | ___ |
| ___ | 8. An emotionally stable and mature person able to cope with reality and new situations.                                                         | ___ |
| ___ | 9. Ability to carry out an appropriate family role and perform those tasks related to family life.                                               | ___ |
| ___ | 10. The habit of weighing facts and values and imaginatively applying them to the solution of problems.                                          | ___ |
| ___ | 11. Ethical and moral integrity in one's own thinking and relationships with others - a sense of right and wrong.                                | ___ |
| ___ | 12. A feeling for other people and the ability to live and work in harmony.                                                                      | ___ |
| ___ | 13. Management of personal finances and wise buying habits.                                                                                      | ___ |
| ___ | 14. Knowledge of world affairs and the interrelationships among peoples and nations.                                                             | ___ |
| ___ | 15. Information and guidance for wise occupational choice.                                                                                       | ___ |
| ___ | 16. Possession of a fund of information about many things and an understanding of the major concepts in related fields of knowledge.             | ___ |

- 1 task should be marked ++ -- Is given most emphasis of all tasks  
 1 task should be marked 00 -- Is given least emphasis of all tasks  
 4 tasks should be marked + -- Is given emphasis  
 4 tasks should be marked 0 -- Is not given much emphasis  
 6 tasks should have no marks -- Is given average emphasis

## **APPENDIX G**

### **COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES OF DOCTORAL PROGRAM OUTCOMES FOR EACH AREA OF SPECIALIZATION**

## APPENDIX G

TABLE 84

**COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR  
ELEMENTARY RESPONDENTS**

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 3.84                  | 4    | 4.09      | 2    | -0.25                     |
| Intellectual Skills     | 4.06                  | 2    | 4.19      | 1    | -0.13                     |
| Analytical Judgment     | 3.87                  | 3    | 3.78      | 4    | +0.10                     |
| Desire for Knowledge    | 4.13                  | 1    | 3.88      | 3    | +0.25                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.25                  | 6.5  | 3.28      | 6    | -0.03                     |
| Man to State            | 2.69                  | 11   | 2.56      | 12   | +0.13                     |
| Man to Country          | 2.81                  | 10   | 2.75      | 10   | +0.06                     |
| Man to World            | 3.22                  | 8    | 3.09      | 7    | +0.13                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.69                  | 16   | 1.97      | 16   | -0.28                     |
| Emotional               | 3.16                  | 9    | 2.91      | 8    | +0.25                     |
| Ethical                 | 3.31                  | 5    | 2.88      | 9    | +0.43                     |
| Aesthetic               | 2.31                  | 13   | 2.25      | 13   | +0.06                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.56                  | 12   | 2.59      | 11   | -0.03                     |
| Vocation-Preparative    | 3.25                  | 6.5  | 3.69      | 5    | -0.44                     |
| Home and Family         | 1.99                  | 14   | 2.03      | 15   | -0.04                     |
| Consumer                | 1.88                  | 15   | 2.06      | 14   | -0.18                     |

## APPENDIX G

TABLE 85

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR  
SECONDARY RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>- |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 3.86                  | 4    | 4.10      | 1.5  | -0.24                     |
| Intellectual Skills     | 3.96                  | 3    | 4.10      | 1.5  | -0.14                     |
| Analytical Judgment     | 4.20                  | 1    | 3.76      | 3    | +0.44                     |
| Desire for Knowledge    | 3.98                  | 2    | 3.47      | 5    | +0.51                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.22                  | 7    | 3.37      | 6    | -0.15                     |
| Man to State            | 2.76                  | 12   | 2.86      | 10   | -0.10                     |
| Man to Country          | 2.84                  | 10   | 2.88      | 9    | -0.04                     |
| Man to World            | 2.94                  | 9    | 2.73      | 11   | +0.21                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.63                  | 16   | 1.94      | 16   | -0.31                     |
| Emotional               | 3.04                  | 8    | 3.00      | 7    | +0.04                     |
| Ethical                 | 3.47                  | 5    | 2.98      | 8    | +0.49                     |
| Aesthetic               | 2.14                  | 13   | 2.20      | 13   | -0.06                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.80                  | 11   | 2.71      | 12   | +0.09                     |
| Vocation-Preparative    | 3.27                  | 6    | 3.57      | 4    | -0.30                     |
| Home and Family         | 1.90                  | 15   | 2.16      | 14   | -0.26                     |
| Consumer                | 2.00                  | 14   | 2.14      | 15   | -0.14                     |

## APPENDIX G

TABLE 86

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR GENERAL  
ADMINISTRATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 3.94                  | 3    | 3.92      | 2    | +0.02                     |
| Intellectual Skills     | 4.15                  | 1    | 4.31      | 1    | -0.16                     |
| Analytical Judgment     | 4.13                  | 2    | 3.75      | 3    | +0.38                     |
| Desire for Knowledge    | 3.87                  | 4    | 3.62      | 5    | +0.25                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.33                  | 6    | 3.17      | 7    | +0.16                     |
| Man to State            | 2.83                  | 10.5 | 2.85      | 10   | -0.02                     |
| Man to Country          | 2.83                  | 10.5 | 2.73      | 12   | +0.10                     |
| Man to World            | 2.92                  | 9    | 2.75      | 11   | +0.17                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.69                  | 16   | 1.79      | 16   | -0.10                     |
| Emotional               | 3.06                  | 8    | 3.00      | 8    | +0.06                     |
| Ethical                 | 3.29                  | 7    | 3.19      | 6    | +0.10                     |
| Aesthetic               | 2.04                  | 13   | 2.19      | 13   | -0.15                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.65                  | 12   | 2.94      | 9    | -0.29                     |
| Vocation-Preparative    | 3.35                  | 5    | 3.73      | 4    | -0.38                     |
| Home and Family         | 1.94                  | 15   | 2.10      | 14   | -0.16                     |
| Consumer                | 2.00                  | 14   | 1.96      | 15   | +0.04                     |

## APPENDIX G

TABLE 87

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR COUNSELING  
AND GUIDANCE RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 3.82                  | 4    | 4.00      | 2    | -0.18                     |
| Intellectual Skills     | 4.00                  | 2.5  | 4.09      | 1    | -0.09                     |
| Analytical Judgment     | 4.27                  | 1    | 3.91      | 3    | +0.36                     |
| Desire for Knowledge    | 4.00                  | 2.5  | 3.64      | 5    | +0.36                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.55                  | 5.5  | 3.63      | 6    | -0.08                     |
| Man to State            | 2.45                  | 12   | 2.82      | 9.5  | -0.37                     |
| Man to Country          | 2.73                  | 11   | 2.55      | 12   | +0.18                     |
| Man to World            | 2.91                  | 8.5  | 2.64      | 11   | +0.27                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.82                  | 16   | 1.82      | 16   | 0.00                      |
| Emotional               | 2.91                  | 8.5  | 2.45      | 13   | +0.46                     |
| Ethical                 | 3.09                  | 7    | 2.82      | 9.5  | +0.27                     |
| Aesthetic               | 1.91                  | 15   | 2.00      | 15   | -0.09                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.82                  | 10   | 3.00      | 7    | -0.18                     |
| Vocation-Preparative    | 3.55                  | 5.5  | 3.82      | 4    | -0.27                     |
| Home and Family         | 2.09                  | 13.5 | 2.18      | 14   | -0.09                     |
| Consumer                | 2.09                  | 13.5 | 2.91      | 8    | -0.82                     |

## APPENDIX G

TABLE 88

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR EDUCATION  
PSYCHOLOGY RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| Intellectual:           |                       |      |           |      |                           |
| Possession of Knowledge | 4.10                  | 2    | 4.30      | 1    | -0.20                     |
| Intellectual Skills     | 3.70                  | 4    | 4.00      | 3    | -0.30                     |
| Analytical Judgment     | 4.60                  | 1    | 3.50      | 5    | +1.10                     |
| Desire for Knowledge    | 3.80                  | 3    | 3.55      | 4    | +0.25                     |
| Social:                 |                       |      |           |      |                           |
| Man to Man              | 2.95                  | 9    | 2.70      | 12   | +0.25                     |
| Man to State            | 2.80                  | 10   | 2.75      | 10.5 | +0.05                     |
| Man to Country          | 2.65                  | 11.5 | 2.80      | 9    | -0.15                     |
| Man to World            | 3.05                  | 8    | 2.75      | 10.5 | +0.30                     |
| Personal:               |                       |      |           |      |                           |
| Physical                | 1.80                  | 15.5 | 1.90      | 16   | -0.10                     |
| Emotional               | 3.15                  | 7    | 3.20      | 7    | -0.05                     |
| Ethical                 | 3.35                  | 6    | 3.05      | 8    | +0.30                     |
| Aesthetic               | 2.00                  | 14   | 1.95      | 15   | +0.05                     |
| Productive:             |                       |      |           |      |                           |
| Vocation-Selective      | 2.65                  | 11.5 | 3.25      | 6    | -0.60                     |
| Vocation-Preparative    | 3.50                  | 5    | 4.10      | 2    | -0.60                     |
| Home and Family         | 1.80                  | 15.5 | 2.15      | 13   | -0.35                     |
| Consumer                | 2.10                  | 13   | 2.05      | 14   | +0.05                     |

## APPENDIX G

TABLE 89

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR HIGHER  
EDUCATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 4.15                  | 1.5  | 4.15      | 1    | 0.00                      |
| Intellectual Skills     | 4.00                  | 3    | 4.08      | 2    | -0.08                     |
| Analytical Judgment     | 4.15                  | 1.5  | 3.77      | 3    | +0.38                     |
| Desire for Knowledge    | 3.77                  | 4    | 3.62      | 4    | +0.15                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.08                  | 7    | 3.15      | 7    | -0.07                     |
| Man to State            | 2.62                  | 11.5 | 2.46      | 12   | +0.16                     |
| Man to Country          | 2.62                  | 11.5 | 2.77      | 10   | +0.15                     |
| Man to World            | 3.15                  | 6    | 2.92      | 8.5  | +0.23                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.69                  | 16   | 2.08      | 16   | -0.39                     |
| Emotional               | 3.00                  | 9    | 2.92      | 8.5  | +0.08                     |
| Ethical                 | 3.00                  | 9    | 3.23      | 6    | -0.23                     |
| Aesthetic               | 2.46                  | 13   | 2.23      | 14.5 | +0.23                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 3.00                  | 9    | 2.62      | 11   | +0.38                     |
| Vocation-Preparative    | 3.31                  | 5    | 3.46      | 5    | -0.15                     |
| Home and Family         | 2.15                  | 14   | 2.31      | 13   | -0.16                     |
| Consumer                | 1.85                  | 15   | 2.23      | 14.5 | -0.38                     |

## APPENDIX G

TABLE 90

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR EDUCATIONAL  
MEDIA RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 3.75                  | 5    | 3.71      | 3    | -0.14                     |
| Intellectual Skills     | 3.71                  | 3.5  | 4.14      | 1.5  | -0.43                     |
| Analytical Judgment     | 4.00                  | 1.5  | 3.00      | 8.5  | +1.00                     |
| Desire for Knowledge    | 4.00                  | 1.5  | 3.43      | 6    | +0.57                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.29                  | 8    | 3.57      | 4.5  | -0.28                     |
| Man to State            | 2.86                  | 10   | 2.57      | 11   | +0.29                     |
| Man to Country          | 2.57                  | 11   | 2.43      | 12   | +0.14                     |
| Man to World            | 3.29                  | 8    | 2.71      | 10   | +0.54                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.43                  | 16   | 2.00      | 16   | -0.57                     |
| Emotional               | 3.29                  | 8    | 3.57      | 4.5  | -0.28                     |
| Ethical                 | 3.43                  | 6    | 3.00      | 8.5  | +0.43                     |
| Aesthetic               | 2.43                  | 12.5 | 2.29      | 13   | +0.14                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.43                  | 12.5 | 3.14      | 7    | -0.71                     |
| Vocation-Preparative    | 3.71                  | 3.5  | 4.14      | 1.5  | -0.43                     |
| Home and Family         | 2.14                  | 14   | 2.14      | 14.5 | 0.00                      |
| Consumer                | 1.86                  | 15   | 2.14      | 14.5 | -0.28                     |

## APPENDIX G

TABLE 91

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR HISTORY  
AND PHILOSOPHY RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| Intellectual:           |                       |      |           |      |                           |
| Possession of Knowledge | 3.57                  | 5.5  | 3.57      | 5    | 0.00                      |
| Intellectual Skills     | 3.14                  | 8.5  | 3.29      | 7.5  | -0.15                     |
| Analytical Judgment     | 4.00                  | 2    | 3.57      | 5    | +0.43                     |
| Desire for Knowledge    | 4.43                  | 1    | 3.71      | 3    | +0.72                     |
| Social:                 |                       |      |           |      |                           |
| Man to Man              | 3.71                  | 4    | .49       | 1    | -0.58                     |
| Man to State            | 2.86                  | 10.5 | 2.86      | 11   | 0.00                      |
| Man to Country          | 2.29                  | 12.5 | 2.29      | 12   | 0.00                      |
| Man to World            | 3.29                  | 7    | 3.29      | 7.5  | 0.00                      |
| Personal:               |                       |      |           |      |                           |
| Physical                | 1.86                  | 15   | 1.86      | 15   | 0.00                      |
| Emotional               | 3.57                  | 5.5  | 3.86      | 2    | -0.29                     |
| Ethical                 | 3.86                  | 3    | 3.57      | 5    | +0.29                     |
| Aesthetic               | 2.86                  | 10.5 | 2.00      | 13.5 | +0.86                     |
| Productive:             |                       |      |           |      |                           |
| Vocation-Selective      | 2.29                  | 12.5 | 3.43      | 9    | -1.14                     |
| Vocation-Preparative    | 3.14                  | 8.5  | 3.14      | 10   | 0.00                      |
| Home and Family         | 2.00                  | 14   | 2.00      | 13   | 0.00                      |
| Consumer                | 1.14                  | 16   | 1.29      | 16   | -0.15                     |

## APPENDIX G

TABLE 92

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR SPECIAL  
EDUCATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| Intellectual:           |                       |      |           |      |                           |
| Possession of Knowledge | 3.69                  | 4.5  | 4.00      | 1    | -0.31                     |
| Intellectual Skills     | 3.75                  | 3    | 3.75      | 3.5  | 0.00                      |
| Analytical Judgment     | 3.81                  | 2    | 3.94      | 2    | -0.13                     |
| Desire for Knowledge    | 4.06                  | 1    | 3.75      | 3.5  | +0.31                     |
| Social:                 |                       |      |           |      |                           |
| Man to Man              | 3.50                  | 6    | 3.13      | 7    | +0.37                     |
| Man to State            | 2.69                  | 10   | 2.69      | 10.5 | 0.00                      |
| Man to Country          | 2.56                  | 12   | 2.38      | 12.5 | +0.18                     |
| Man to World            | 3.00                  | 9    | 2.69      | 10.5 | +0.31                     |
| Personal:               |                       |      |           |      |                           |
| Physical                | 2.06                  | 15   | 2.31      | 14   | -0.25                     |
| Emotional               | 3.69                  | 4.5  | 3.63      | 5    | +0.06                     |
| Ethical                 | 3.13                  | 8    | 3.06      | 8    | +0.07                     |
| Aesthetic               | 2.25                  | 14   | 2.00      | 15   | +0.25                     |
| Productive:             |                       |      |           |      |                           |
| Vocation-Selective      | 2.63                  | 11   | 2.88      | 9    | -0.25                     |
| Vocation-Preparative    | 3.19                  | 7    | 3.50      | 6    | -0.31                     |
| Home and Family         | 2.44                  | 13   | 2.38      | 12.5 | +0.06                     |
| Consumer                | 1.56                  | 16   | 1.94      | 16   | -0.38                     |

## APPENDIX G

TABLE 93

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR BUSINESS  
EDUCATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 4.12                  | 2    | 4.16      | 1    | -0.04                     |
| Intellectual Skills     | 3.84                  | 4    | 3.84      | 4    | 0.00                      |
| Analytical Judgment     | 4.32                  | 1    | 3.96      | 2    | +0.36                     |
| Desire for Knowledge    | 3.96                  | 3    | 3.88      | 3    | +0.08                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 2.92                  | 8    | 2.64      | 12.5 | +0.28                     |
| Man to State            | 2.72                  | 11   | 2.76      | 9    | -0.04                     |
| Man to Country          | 2.76                  | 10   | 2.68      | 10.5 | +0.08                     |
| Man to World            | 2.88                  | 9    | 2.64      | 12.5 | +0.24                     |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.44                  | 16   | 1.64      | 16   | -0.20                     |
| Emotional               | 3.16                  | 7    | 3.12      | 6    | +0.04                     |
| Ethical                 | 3.24                  | 6    | 3.08      | 7.5  | +0.16                     |
| Aesthetic               | 2.04                  | 14   | 2.08      | 14   | -0.04                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.52                  | 13   | 2.68      | 10.5 | -0.16                     |
| Vocation-Preparative    | 3.40                  | 5    | 3.76      | 5    | -0.36                     |
| Home and Family         | 2.00                  | 15   | 2.00      | 15   | 0.00                      |
| Consumer                | 2.68                  | 12   | 3.08      | 7.5  | -0.40                     |

## APPENDIX G

TABLE 94

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR SCIENCE  
EDUCATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| Intellectual:           |                       |      |           |      |                           |
| Possession of Knowledge | 3.56                  | 4    | 3.33      | 5    | +0.23                     |
| Intellectual Skills     | 4.00                  | 3    | 4.00      | 2    | 0.00                      |
| Analytical Judgment     | 4.33                  | 2    | 4.22      | 1    | +0.11                     |
| Desire for Knowledge    | 4.44                  | 1    | 3.89      | 3    | +0.55                     |
| Social:                 |                       |      |           |      |                           |
| Man to Man              | 3.11                  | 7    | 3.33      | 5    | -0.22                     |
| Man to State            | 3.00                  | 8.5  | 3.00      | 8    | 0.00                      |
| Man to Country          | 2.89                  | 10.5 | 2.89      | 9.5  | 0.00                      |
| Man to World            | 3.22                  | 6    | 2.78      | 11   | +0.44                     |
| Personal:               |                       |      |           |      |                           |
| Physical                | 2.00                  | 13.5 | 2.44      | 13   | -0.44                     |
| Emotional               | 3.00                  | 8.5  | 2.89      | 9.5  | +0.11                     |
| Ethical                 | 3.33                  | 5    | 3.33      | 5    | 0.00                      |
| Aesthetic               | 1.78                  | 16   | 2.22      | 14   | -0.44                     |
| Productive:             |                       |      |           |      |                           |
| Vocation-Selective      | 2.56                  | 11   | 2.67      | 12   | -0.11                     |
| Vocation-Preparative    | 2.89                  | 10.5 | 3.11      | 7    | -0.22                     |
| Home and Family         | 1.89                  | 15   | 2.00      | 15   | -0.11                     |
| Consumer                | 2.00                  | 13.5 | 1.89      | 16   | +0.11                     |

## APPENDIX G

TABLE 95

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR  
MATH EDUCATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>— |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| <b>Intellectual:</b>    |                       |      |           |      |                           |
| Possession of Knowledge | 4.00                  | 3.5  | 4.25      | 2    | -0.25                     |
| Intellectual Skills     | 4.00                  | 3.5  | 4.00      | 3.5  | 0.00                      |
| Analytical Judgment     | 4.75                  | 1    | 3.75      | 5    | -1.00                     |
| Desire for Knowledge    | 4.25                  | 2    | 4.00      | 3.5  | +0.25                     |
| <b>Social:</b>          |                       |      |           |      |                           |
| Man to Man              | 3.00                  | 7.5  | 3.25      | 6    | -0.25                     |
| Man to State            | 3.00                  | 7.5  | 2.75      | 8.5  | +0.25                     |
| Man to Country          | 3.00                  | 7.5  | 2.75      | 8.5  | +0.25                     |
| Man to World            | 2.50                  | 12   | 2.50      | 11.5 | 0.00                      |
| <b>Personal:</b>        |                       |      |           |      |                           |
| Physical                | 1.50                  | 16   | 2.25      | 13.5 | -0.75                     |
| Emotional               | 3.00                  | 7.5  | 2.75      | 8.5  | +0.25                     |
| Ethical                 | 2.75                  | 10.5 | 2.75      | 8.5  | 0.00                      |
| Aesthetic               | 2.25                  | 13   | 2.50      | 11.5 | -0.25                     |
| <b>Productive:</b>      |                       |      |           |      |                           |
| Vocation-Selective      | 2.75                  | 10.5 | 2.00      | 15   | +0.75                     |
| Vocation-Preparative    | 3.50                  | 5    | 4.50      | 1    | -1.00                     |
| Home and Family         | 2.00                  | 14   | 2.25      | 13.5 | -0.25                     |
| Consumer                | 1.75                  | 15   | 1.75      | 16   | 0.00                      |

## APPENDIX G

TABLE 96

COMPARISON OF MEANS, RANKS, AND MEAN DIFFERENCES  
OF DOCTORAL PROGRAM OUTCOMES FOR "OTHER"  
AREAS OF SPECIALIZATION RESPONDENTS

| The Outcomes            | What Should Have Been |      | What Was  |      | Mean Difference<br>+<br>- |
|-------------------------|-----------------------|------|-----------|------|---------------------------|
|                         | $\bar{X}$             | Rank | $\bar{X}$ | Rank |                           |
| Intellectual:           |                       |      |           |      |                           |
| Possession of Knowledge | 4.00                  | 3    | 4.50      | 1    | -0.50                     |
| Intellectual Skills     | 4.50                  | 1.5  | 3.50      | 5.5  | 0.00                      |
| Analytical Judgment     | 4.50                  | 1.5  | 4.00      | 3    | +0.50                     |
| Desire for Knowledge    | 3.50                  | 5.5  | 4.00      | 3    | -0                        |
| Social:                 |                       |      |           |      |                           |
| Man to Man              | 3.00                  | 9    | 3.00      | 8.5  | 0.00                      |
| Man to State            | 2.50                  | 11.5 | 2.50      | 12   | 0.00                      |
| Man to Country          | 2.00                  | 14   | 2.50      | 12   | -0.50                     |
| Man to World            | 3.00                  | 9    | 3.00      | 8.5  | 0.00                      |
| Personal:               |                       |      |           |      |                           |
| Physical                | 1.00                  | 16   | 1.00      | 16   | 0.00                      |
| Emotional               | 3.00                  | 9    | 4.00      | 3    | -1.00                     |
| Ethical                 | 3.50                  | 5.5  | 3.00      | 8.5  | +0.50                     |
| Aesthetic               | 2.50                  | 11.5 | 2.50      | 12   | 0.00                      |
| Productive:             |                       |      |           |      |                           |
| Vocation-Selective      | 3.50                  | 5.5  | 3.00      | 8.5  | +0.50                     |
| Vocation-Preparative    | 3.50                  | 5.5  | 3.50      | 5.5  | 0.00                      |
| Home and Family         | 2.00                  | 14   | 2.00      | 14.5 | 0.00                      |
| Consumer                | 2.00                  | 14   | 2.00      | 14.5 | 0.00                      |