ATTRITION AFTER SUCCESSFUL COMPLETION OF DOCTORAL QUALIFYING EXAMINATIONS: AN ANALYSIS OF CHARACTERISTICS AND ATTITUDES OF DOCTORAL GRADUATES AND NON-GRADUATES

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

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By

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The purpose of this study was to determine whether differences exist between characteristics and attitudes of graduates and those of non-graduates of doctoral programs in education. The subjects were the 256 students who had successfully completed the qualifying examinations in the College of Education at North Texas State University during the years of 1978 through 1980.

Although the data findings from this study are too numerous to list within the restrictions of this abstract, the most notable findings include that (1) 74.2 per cent had graduated; (2) graduates were more likely to have selected the dissertation topic before the qualifying examinations; (3) graduates rated personal motivation higher than did non-graduates; and (4) there were no significant differences in Graduate Record Examination scores (verbal, quantitative, or total) between graduates and non-graduates.
Among the conclusions drawn from this study are that (1) the process of going through a doctoral program discourages the less serious students before they reach the qualifying examinations and (2) graduates have high personal motivation and receive high support for dissertation efforts from many segments of life (spouse, family, friends, major professor, and doctoral committee).

The recommendations drawn from this study are for (1) further research into the personal motivation of the candidate, (2) further research as to the effect of the candidate's attitudes toward and grades for courses in research and statistics, (3) universities to maintain records that allow for determination of completion rates of doctoral students and to consider these rates in the evaluation of doctoral programs, and (4) graduate faculty to encourage doctoral students to give serious consideration to possible dissertation topics early in their graduate programs.
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CHAPTER I

INTRODUCTION

The decision to pursue a doctoral degree in education is an important decision for most graduate students. Such a degree costs thousands of dollars and thousands of hours. For many, the decision involves a decrease in time from family, social, and professional life and introduces a need to balance graduate study with full-time employment. By the time a student has completed forty-eight hours of course work, passed a research and statistics qualifying examination, and successfully completed written and oral qualifying examinations in the major and minor fields, a sizeable investment of time and money has been made. The remaining requirement for the attainment of the doctorate (either a Ph.D. or an Ed.D.) is the completion and defense of the dissertation.

The decision not to complete the dissertation, and thus the degree, is an equally important decision. Neither the individual nor the university has reached the anticipated outcome. Educational institutions need to know about their non-graduates as well as their graduates and to determine what factors contribute to student completion. In order to understand this situation more clearly, it is
important that studies be undertaken to determine the completion rate and factors that contribute to it.

Statement of the Problem

This study was concerned with attrition and the differences in characteristics and attitudes between graduates and non-graduates after successful completion of the qualifying examinations in doctoral programs in education.

Purposes of the Study

The purposes of this study follow:

1. To determine the following characteristics for graduated and non-graduated doctoral students:
   A. Graduate Record Examination scores
   B. Age
   C. Sex
   D. Length of time since completion of master's degree
   E. Change in marital status
   F. Income at time of dissertation preparation
   G. Type of current employment

2. To ascertain the following characteristics that changed after completion of qualifying examinations:
   A. Change of employment
   B. Change of marital status
3. To investigate the problems perceived by graduate students.

Research Hypotheses

To achieve the purposes of this study, the following research hypotheses were tested.

1. Graduates of doctoral programs in the College of Education have higher Graduate Record Examination (GRE) verbal scores than non-graduates who have completed the qualifying examinations.

2. Graduates of doctoral programs in the College of Education have higher GRE quantitative scores than non-graduates who have completed the qualifying examinations.

3. Graduates of doctoral programs in the College of Education have higher GRE total scores than non-graduates who have completed the qualifying examinations.

Research Questions

To achieve the purposes of this study, the following research questions were used to guide the study.

1. Is a candidate's sex a factor in successful completion of a dissertation?

2. Is a candidate's age at the completion of the qualifying examinations a factor in successful completion of a dissertation?
3. Does a candidate's constancy in marital status affect successful completion of a dissertation?

4. Does a candidate's level of income during the dissertation process affect successful completion of a dissertation?

5. Does a candidate's type of employment during the dissertation process affect successful completion of a dissertation?

6. Does change of employment during the dissertation process affect successful completion of a dissertation?

7. Does the length of time between the attainment of the master's degree and completion of the doctoral qualifying examinations affect successful completion of a dissertation?

8. Is completion of a master's degree that included a thesis a factor in successful completion of a dissertation?

9. Is the timing of the selection of a dissertation topic a factor in successful completion of a dissertation?

10. Do graduates and non-graduates encounter similar problems in the proposal/dissertation stage?

   A. Is the rating for personal motivation similar for graduates and non-graduates?

   B. Is the rating for funds available for conducting, implementing, and reporting research similar for graduates and non-graduates?
C. Is the rating for time available for conducting, implementing, and reporting research similar for graduates and non-graduates?

D. Is the rating for physical well-being similar for graduates and non-graduates?

E. Is the rating for the support of the major professor similar for graduates and non-graduates?

F. Is the rating for the support of the committee similar for graduates and non-graduates?

G. Is the rating for the support of peers similar for graduates and non-graduates?

H. Is the rating for university assistance in selecting the dissertation topic similar for graduates and non-graduates?

I. Is the rating for preparation through courses in the major for the proposal/dissertation stage similar for graduates and non-graduates?

J. Is the rating for preparation through courses in the minor/related area for the proposal/dissertation stage similar for graduates and non-graduates?

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M. Is the rating for support of dissertation efforts from the spouse similar for married graduates and married non-graduates?

N. Is the rating for support of dissertation efforts from family and/or friends similar for graduates and non-graduates?

O. Is the rating for job-related incentive/pressure to complete the degree similar for graduates and non-graduates?

P. Is the rating for the person's ability to work within the university's scheduled deadlines similar for graduates and non-graduates?

Background and Significance of the Study

To provide a background for this study, an understanding of the conclusions of previous investigations is helpful. The majority of previous studies have focused either on graduates of doctoral programs or on non-graduates.

Studies that explore the completion rate of doctoral students generally and in specific fields have been conducted. One such study surveyed doctoral programs at the University of North Carolina at Chapel Hill and determined that doctoral students have the lowest rate of perseverance when compared with other professional students in medicine, dentistry, and law (5). Five years after
entering a doctoral program, only 54 per cent of the students had graduated or were still enrolled (5, p. 12).

A study at Stanford University determined that the most effective predictor of persistence in graduate education is the quantitative score on aptitude admission tests. Other indicators determined by this study were the number of years since the previous college enrollment and previous degree, possession of a master's degree from the same university offering the doctorate, and previous grades from graduate study (4).

Several studies have focused on females enrolled in or graduated from doctoral programs. In 1978, Vetter, Babco, and McIntire observed that from 1970-71 through 1975-76 women received 27 per cent of the Ph.D.'s awarded in education (1, p. 15). A later study by Fischer and Peters in 1979 concluded that women account for 64.5 per cent of the enrollment in graduate programs and that non-graduates cited non-academic reasons for not completing the degree. The non-graduates' main reasons for termination were job responsibilities, distance from the university, and financial situations (6).

In 1983 a study was conducted of doctoral students who had completed all requirements but the dissertation at off-campus centers of the University of Southern California. In contrast to other studies, this investigation determined that the ratio of male to female candidates was 2.4 to 1
The most frequent obstacle to the writing of the dissertation was reported by twenty-six per cent of the students who had completed all requirements by the dissertation to be lack of motivation. Seventy-eight per cent reported they had encountered some degree of difficulty with the department or the major professor.

Another researcher studied doctoral students in scientific fields who had completed all requirements except the dissertation by locating and interviewing on the telephone twenty-five people who had pursued Ph.D.'s. This study was an attempt to answer the question, "How do non-graduates differ from those who completed their dissertations?" The conclusion was that the two groups (graduates versus non-graduates) may not differ very much. It was also suggested that for the people who have completed all of a doctoral program except the dissertation and who are now working in academic fields, the lack of a Ph.D. may have led to an increased concern for teaching and a decreased involvement in academic research. The major reasons cited for leaving doctoral programs were financial difficulties and poor working relationships with the advisor and/or the committee. In conjunction with the telephone survey of non-graduates there was a large mail survey study of Ph.D.'s in the same fields. This report, however, did not reflect whether the survey questions for the two groups
were the same, nor did it include a comparison of the responses of the two groups. The authors suggested that more systematic studies of students who have completed all the requirements but the dissertation and graduates should be conducted (2).

The doctoral completion rate recorded each year is of concern to university academic planners and to legislative bodies as they deliberate the costs of higher education. Since many factors can contribute to the completion or non-completion of doctoral work, a study of those factors is therefore timely and significant.

Previous research has focused on a single group, such as graduates, non-graduates, or women. This current study differed from research already done in that data were collected both from (1) students who had graduated and students who had completed all requirements but the dissertation and (2) both male and female students. A study of the factors that delineate graduates from non-graduates is significant for both the students and for the institutions of higher learning.

Many approaches to research would be appropriate for this study. The single-case or single-institution approach was selected because it is uniquely suited to generating new hypotheses (3). Such a technique is appropriate since it provides a model and a data base that can be compared
with other groupings of graduate students in future research.

Definition of Terms

For the purposes of this study, certain terms are defined:

**Graduated doctoral students** are students receiving Ph.D. or Ed.D. degrees in the College of Education.

**Non-graduating doctoral students** are students who have not completed dissertations within five years after successful completion of written and oral qualifying examinations in the College of Education.

Limitations

The population of this study was limited to graduate students from the College of Education at North-Texas State University who had completed qualifying examinations from 1978 through 1980 and whose names and addresses were available to the University. The research was also subject to the limitations of self-perception or self-evaluation. Further limitations include the factors inherent in a questionnaire administered by mail, the level of honesty of the participants, and the cooperation of both graduates and non-graduates.

Summary

Little regional or national research exists on the rates of and factors involved in doctoral degree completion
and non-completion. Isolated studies at specific universities have suggested that further research in the area of doctoral student attrition can help to understand better the characteristics, the problems, and the attitudes of the doctoral graduate and non-graduate. Current increased concern with fiscal responsibility and accountability is causing universities to increase their efforts to meet the needs of their students; and information about why students do not complete doctoral programs should give direction to those efforts. This study focused on the completion and non-completion of doctoral students who successfully passed the oral and written qualifying examination in the College of Education at North Texas State University from 1978 through 1980.

The following chapter provides a review of related literature providing background information and of studies related to the attrition of doctoral students after the completion of the qualifying examinations. The review includes previous studies that have investigated rates of completion and non-completion, characteristics of graduates and non-graduates, and attitudes and problems of graduates and non-graduates of doctoral programs.
CHAPTER BIBLIOGRAPHY


2. Jacks, Penelope, Daryl E. Chubin, Alan L. Porter, and Terry Connolly, "The ABCs of ABDs: A Study of Incomplete Doctorates," Improving College and University Teaching, XXXI (Spring, 1983), 74-81.


7. Schultz, Marian Claire, "'ABD' Doctoral Students from Off-Campus Centers of the University of Southern California," Dissertation Abstracts, 44,02 (August, 1983).
CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The first Doctor of Philosophy degree granted in the United States was in 1861 by Yale University. The first traditional graduate education program was established in 1876 by Johns Hopkins University (16, p. 31). During the following century, graduate education in the United States burgeoned, evolving into a broad range of programs in diverse areas of educational endeavor that attract students nationally and internationally.

The number of graduates has grown significantly. As Pelczar states,

By 1960, the number of doctorates awarded [annually] reached the 10,000 mark. However, it was the next ten-year period that produced an explosion at this level of graduate education. In 1970-71, 32,107 doctoral degrees were awarded, 27,530 to men and 4,577 to women. The peak year was 1974-75 with 34,086 degrees awarded, 26,819 to men and 7,267 to women. Since then, the number of doctorates awarded has shown a slight but steady decrease. However, there has been a sharp increase in the number of women recipients; in 1981-82, 10,483 women earned doctorates out of a total of 32,707 (16, p. 5).

As graduate programs were expanding nationally, the Board of Regents of North Texas State University voted on August 10, 1950, for the university "... to prepare to offer the doctor's degree in education and music starting
the first summer term of 1951. On January 24, 1951, the regents approved degree requirements as recommended by the faculty for the doctor of education and for the doctor of philosophy in music" (19, p. 347). The first doctoral degree granted by North Texas State University was in 1953. By 1984, the College of Education offered the Doctor of Education or Doctor of Philosophy with majors in Administrative Leadership, Adult/Continuing Education, College Teaching, Counselor Education, Early Childhood Education, Educational Research (Ph.D. only), Elementary Education, Higher Education, Reading, Secondary Education, Special Education, and Occupational/Vocational Education (15, p. 10).

With the proliferation of degree programs available has come also a proliferation of graduate students, but all are not successful in completing their chosen programs. It is the purpose of this chapter to present a review of the literature for background information and of studies related to attrition of doctoral candidates. The review is divided into sections that focus on the following three aspects of attrition: (1) rates of completion/non-completion, (2) characteristics of graduates and non-graduates of doctoral programs, and (3) attitudes/problems of graduates and non-graduates of doctoral programs.
Rates of Completion/Non-Completion

As Berelson wrote in 1960, "Given the complexities of graduate education, the term [attrition] itself is exceedingly difficult to define" (3, p. 168). Previous studies have defined graduate attrition in various ways—students who are admitted to graduate school but who do not graduate, students who are accepted into a doctoral program but who do not graduate, students who complete half the course work but who do not graduate, and students who have completed all of the requirements for graduation except for the dissertation.

Because the definitions of attrition vary, conclusions from related studies can be reported but cannot always be compared. In 1960 Berelson estimated from a survey of sixty-three graduate deans in the United States that 40 percent of the students who begin work toward a doctorate do not graduate (3, p. 24). In a national study of attrition of doctoral students in 1964, Tucker concluded that approximately one-third of those who register in doctoral programs do not complete the degree (10, p. 24). Findings from a 1979 study suggested that attrition at the dissertation stage is estimated to vary between 25 and 50 percent at American universities (11, p. 21). In a study at the University of Missouri-Columbia in 1975, Reeble concluded that "... program termination occurred most often after half or more of the course work was completed and after
completion of the comprehensive examination" (18, p. 2018-A).

Lemp reported a study of United States Office of Education records that yielded data on the annual number of students entering a master's or doctoral program and the annual number of students who receive doctorates. The number of students entering doctoral programs only or the percentage of doctoral students who do not complete the doctoral degree, however, was not determined (13, pp. 5-6).

In a 1983 study at the University of Southern California, Schultz found that more than one-third of candidates admitted did not complete the doctorate (20, p. 405-A). This finding was similar to a previous finding by Boozer in a 1972 study at Emory University that approximately 60 percent of those who become Ph.D. candidates eventually completed the degree (4, p. 130).

In summary, national rates of completion/non-completion of doctoral programs are estimates only and are not based on empirical data. Isolated case studies reveal attrition at given universities, but these studies are also limited in number. A paucity of studies has been conducted since Wright concluded in 1964 that

... despite the great concern over problems of higher education in the United States during the past forty years, it is impossible to find complete and accurate data on the number and proportion of graduate students who fail in their efforts to earn a master's or a doctoral degree (25, p. 731).
Acknowledging the limited nature of existing studies, it may be surmised that attrition is as yet an unquantified factor in doctoral education.

Characteristics of Graduates and Non-Graduates

Given that there are no national studies on graduates and non-graduates of doctoral programs, there are no national statistics on the characteristics that distinguish these students. Studies have been conducted by researchers for universities and educational organizations that describe the characteristics of admitted students, graduates, and non-graduates. Some of the studies have considered scores on the Graduate Record Examination (verbal, quantitative, and total), sex, age, marital status, income, and years since receipt of a bachelor's or master's degree.

Graduate Record Examination Scores

Many of the studies concerning Graduate Record Examination (GRE) scores focus on the prediction of academic success (i.e., the doctoral grade point average) for a doctoral candidate (1). The verbal score on the GRE was investigated by Broadus and Elmore in 1983, and they concluded that the verbal score was "...the most valid predictor of success--noticeably more prognostic than were undergraduate grades" (6, p. 543). Few studies investigate the relationship between GRE scores and completion of the doctoral program. The consensus of related studies is that
the quantitative score on the GRE is the best predictor of completion of the doctorate (7, 9, 13). In the Lemp study in 1980 at Stanford University, an analysis of the records of 328 doctoral students in the School of Education revealed that "the most significant variable appears to be the quantitative results from the GRE with graduates earning higher median scores than non-graduates" (13, p. 43).

**Sex of the Candidate**

A review of studies concerning sex as a variable in completion of a doctoral degree demonstrates a range of conclusions—from males having a much higher rate of completion to females having a slightly higher rate of completion. Solmon wrote in 1976 that "... little information is available to date on degree completion rates for women and men. Most studies suggest that a greater percentage of women drop out of graduate school..." (21, p. 14).

A study at the University of North Carolina at Chapel Hill demonstrated that "... men persist at a slightly higher rate than women" (14, p. 7). Lemp conducted a study of the records of 328 doctoral students in the Stanford University School of Education from 1969-70 through 1971-72 and concluded that "it appears that women are slightly better risks for doctoral completion than men, a first in the literature dealing with predictors of graduation" (13,
There is no consensus in the literature as to the current importance of the sex variate as a predictor of doctoral degree completion.

Age of the Candidate

The variable of age as a discriminating factor between graduates and non-graduates has been addressed by three studies of doctoral students. In 1970 Williams concluded that age was not a factor in completion of a doctoral degree (24). In a study of graduates and non-graduates in the College of Education at the University of Nebraska, Bartels determined that the median age for graduates at the time they passed the qualifying examinations was thirty-three and the median age for non-graduates was thirty-four (2, p. 63). In the Stanford study in 1980, Lemp concluded that age did not appear to discriminate the graduate from the non-graduate (13). In summary, previous studies have not found age to be a predictor of completion of the doctoral degree.

Marital Status of the Candidate

Few studies have investigated the role of marital status in completing or not completing the doctorate. An early study at the University of Michigan considered candidates from 1946 through 1953, and Wetherill concluded that no important difference existed for graduates and non-graduates as related to marital status (22). Lemp concluded that "... marriage appears to be a stabilizing force.
associated with graduation, but this generalization does not apply to the female portion of the study" (13, p. 79). No study has been found to focus on the change in marital status as a factor in completing the doctoral degree.

**Income of the Candidate**

The role of income of doctoral candidates during the proposal/dissertation stage is relative to the university and the profile of its candidates. For universities with younger doctoral students who have proceeded directly from a bachelor's degree through a master's degree to doctoral study, income is a more important factor in graduation than it is for universities drawing older students with professional employment who have been working for several years since completion of the master's degree.

In 1964 Davis conducted a nationwide study of the financial support of arts and sciences graduate students and determined that the major obstacle to persistence in graduate study is the problem of finances (10, p. 25). On the other hand, Bartels (2) studied the completion rate of doctoral students who had passed the admission examination and completed some coursework toward the Doctor of Education degree; he concluded that at the time of the qualifying examinations, the non-graduates were earning somewhat greater incomes than were the graduates.
Years Since Completion of Master's Degree

In 1971 Redovich concluded from a study at Marquette University that the mean number of years between completion of the master's degree and the doctorate was 6.7 years (17, p. 74). Centra in 1974 pointed out that the average number of years between receiving the bachelor's degree and the doctoral degree was about thirteen for women and just under eleven for men (21, p. 66). From her study at Stanford University in 1980, Lemp wrote that it appears that the factor of years since the previous college degree does not separate the graduates from the non-graduates (13).

Attitudes/Problems of Graduates and Non-Graduates

The factors that impact doctoral students cannot be limited to demographics. The attitudes of these students and personal and environmental factors should also be studied to determine whether these factors are related to doctoral attrition. The factors considered by related research are personal motivation and support of the major professor and the doctoral committee.

Personal Motivation

The motivation of the doctoral student to complete the degree has been found to be of great importance. Whatever the basis of the motivation, its presence is a strong predictor of completion. In a study of education doctoral
students from three Pennsylvania universities, Feick concluded that "... the dominant personal reason for attrition was the lack of motivation" (8, pp. 3-4). After surveying doctoral graduates in the Division of Higher Education at North Texas State University, Brice's findings concurred with those of Feick, reporting that the graduates listed lack of proper motivation as the major cause of attrition (5). Finally, Schultz conducted a study of non-graduates at the University of Southern California in 1983 and reported that lack of motivation was reported by 26 per cent of the non-graduates as the most frequent obstacle to completing the dissertation (20, p. 405A). The literature is consistent in citing motivation as a vital factor in completion of the doctoral degree.

Support of Major Professor and Committee

Each doctoral student selects or is assigned a major professor or advisor and a committee to help direct the dissertation. Their roles vary with the individual and with the university. In 1983 Jacks conducted a study by telephone of 25 non-graduates of doctoral programs who had completed all degree requirements except for the dissertation. His research revealed that 44 per cent stated that the major reason for leaving the doctoral program was the existence of a poor relationship with their advisor and/or their committee (12, p. 75). Jacks also surveyed by mail a
group of 639 Ph.D.'s and asked them to rate the inspiration or stimulus they had received from their advisor. These graduated students rated the support of the major professor as 3.84 on a 1 to 5 scale.

Another study of non-graduates in 1983 was conducted by Schultz who found that 78 per cent reported some degree of difficulty with the major professor or department (20, p. 405-A). Clearly, non-graduates were reported as perceiving a lack of strong support from major professors and/or doctoral committees.

Summary

Most studies cited in this review of literature have found a paucity of research on doctoral attrition and have recommended further research in the area (2, 11, 12, 13, 17, 22). The current literature reveals the absence of any national statistics on the numbers of students who begin but who do not complete the doctoral degree. It is not common for a university to have records on how many students do not complete doctoral programs.

The characteristics of graduates are that they (1) have higher quantitative GRE scores than do non-graduates, (2) in recent years, may be male or female, (3) are not a member of a particular age group, (4) may be single or married, (5) may have an income at the time of the qualifying examinations lower than that of the non-graduates, and
are not predictably a certain number of years beyond the master's degree. The non-graduates probably have experienced low personal motivation and have perceived lack of support from the major professor and/or the doctoral committee. All of these issues will be investigated in the following chapters as they relate to the College of Education at North Texas State University.

To describe better the graduates and non-graduates of doctoral programs, this study surveyed the candidates who had successfully completed the oral and written qualifying examination during the years 1978 through 1980 at North Texas State University. A comparison of the characteristics and perceptions of both graduates and non-graduates who were in the same programs at the same time was thus possible. The population, the instrument, and the methodology for collecting and analyzing the data for this study of doctoral attrition are described in the following chapter.


CHAPTER III

PROCEDURES FOR COLLECTING AND ANALYZING DATA

Introduction

A study was conducted of the doctoral candidates who had successfully completed the oral and written qualifying examinations in the College of Education at North Texas State University. The major elements involved in collecting and analyzing the data are described under the headings (1) population of the study, (2) construction of the survey instrument, (3) procedures for collecting the data, and (4) procedures for analyzing the data.

Population of the Study

The subjects of the study were the doctoral candidates in the College of Education at North Texas State University who had successfully completed oral and written qualifying examinations during the years 1978 through 1980. This group was selected because its members had had from five to seven years in which to complete the dissertation, and thus the degree. Most of these candidates would have little or no time left under the NTSU statute of limitations of ten years. The difficulty of obtaining current addresses for the members of the population provided justification for not including in the study individuals who had completed
the oral and written qualifying examinations during years earlier than 1978. A study of the student records for the three-year period from 1978 through 1980 revealed there were 256 doctoral candidates who had successfully completed the oral and written qualifying examinations.

The research consisted of two basic components. The first component included collection and analysis of Graduate Record Examination (GRE) scores for all 256 doctoral candidates who had successfully completed oral and written qualifying examinations during the years 1978 through 1980. The second component included collection and analysis of the data obtained from doctoral candidates who responded to a mailed questionnaire.

Construction of the Survey Instrument

After an extensive review of the literature, the preliminary survey instrument was constructed in two parts. The personal data questions, which included selected demographic information, were included in the first part. Information elicited in the first part included that on sex, age at completion of qualifying examinations, constancy of marital status during the proposal/dissertation stage, current degree status, average family income during the proposal/dissertation stage, constancy of employment during the proposal/dissertation stage, and the
length of time between completion of the master's degree and the doctoral qualifying examinations.

The second part of the questionnaire elicited self-ratings on the availability or presence of selected factors during the proposal/dissertation stage. The evaluation response choices ranged from low (1) to high (5). Factors to be evaluated included personal motivation; funds available for conducting, implementing, and reporting the research; time available for conducting, implementing, and reporting the research; physical well-being; support of the major professor; support of the committee; support of peers; university assistance in determining the topic; preparation through courses in the major for the proposal/dissertation stage; preparation through courses in the minor/related area for the proposal/dissertation stage; university-supplied advising/counseling on the dissertation; support for dissertation efforts from spouse (if married); support for dissertation efforts from family/significant other(s); job-related incentive/pressure to complete the degree; and the ability to work within the university's scheduled deadlines. A space for comments by the respondent was provided at the end of the questionnaire.

The preliminary survey instrument was developed and presented to a panel of judges for evaluation. This jury of nine judges was composed of three professors from the
College of Education at North Texas State University (NTSU) who direct and supervise doctoral students, three NTSU graduates of doctoral programs in the College of Education who were not in the population of the study, and three NTSU doctoral candidates who had not completed the degree, but who had successfully completed qualifying examinations. The latter three candidates also were not included in the population of the study.

The preliminary survey instrument was presented to the judges in order to obtain their opinions as to the validity and clarity of each item. Each judge received a copy of the preliminary questionnaire (Appendix A), accompanied by a cover letter (Appendix B), a copy of the research questions (Appendix C), an evaluation form (Appendix D), and a return-addressed, stamped envelope. Each judge was asked to consider the items on the preliminary questionnaire and rate each one for inclusion in the final instrument as acceptable, unacceptable, or don't know. Retention of an item required agreement from a minimum of six of the nine judges that it was acceptable for use in the study.

Additionally, each judge was asked to consider (1) whether at least one item was present on the survey instrument for each research question, (2) whether the language of each item marked acceptable was easily understandable, (3) whether the arrangement of the items on the questionnaire was acceptable, and (4) whether all
respondents should be asked all items. The rating choices for these criteria were (1) agree, (2) disagree, and (3) undecided. The minimum standard deemed acceptable was a rating of agree by at least six of the nine judges.

The responses from the panel of judges were used to construct the final survey instrument. At least six members of the panel of judges agreed that each item was acceptable and that the four additional criteria for the survey instrument had been met. All items were therefore retained on the final questionnaire. Two additional items suggested by members of the panel of judges were added to the final questionnaire after approval by six of the judges.

Procedures for Collecting the Data

Since there were two research components to this study, collection of the data was accomplished from two sources: (1) official access to university files for GRE scores, and (2) administration of the survey instrument. As a research associate in the Center for Higher Education at North Texas State University, the researcher had authorization to access student information files in various offices throughout the university.

This research project required access to information from five different offices. A list of the names and addresses of the doctoral students who had successfully
completed oral and written qualifying examinations during the years 1978 through 1980 was compiled from data in the Office of the Coordinator of Graduate Affairs of the College of Education. The compiled list contained 256 names.

GRE scores (verbal, quantitative, and total) were obtained from the Office of the Dean of the Graduate School. Scores were located for 235 of the 256 individuals on the list. Current mailing addresses were secured from files in the university's Advancement Office and the Student Information Management System (SIMS). Finally, Commencement programs for North Texas State University from 1978 through 1980 were consulted to determine which of the candidates in the study had graduated.

The data necessary for studying the research hypotheses, the research component of this study addressing GRE scores, were obtained from official university records. Data pertaining to the research questions, the second research component of the study, however, were obtained from candidates' responses to the questionnaire.

The survey instrument was mailed to the 256 candidates who had successfully completed oral and written qualifying examinations during the years 1978 through 1980. Along with the survey instrument (Appendix E), each candidate received a cover letter (Appendix F) that explained the nature of the study, and a return-addressed, stamped
envelope. Approximately two weeks after the first mailing, a follow-up postcard (Appendix G) was mailed to non-respondents. The third mailing was made one week later to non-respondents and included a cover letter (Appendix H), a questionnaire, and a return-addressed, stamped envelope.

**Procedures for Analyzing the Data**

In Chapter IV, the major findings are presented and displayed in tabular form. The reporting format and statistical procedures were determined as appropriate to the particular types of information. The means of all available Graduate Record Examination scores (verbal, quantitative, and total) were computed for graduates and non-graduates comprising the entire population of 256 candidates. The means of Graduate Record Examination scores (verbal, quantitative, and total) were also computed for those candidates who actually received and responded to the questionnaire. A one-tailed t-test of significance between the means of the graduates and non-graduates (verbal, quantitative, and total) for both groups was conducted.

The demographic profiles for the respondents were developed using descriptive statistics on the data gathered in Part A of the survey instrument. The respondents were categorized as graduates or non-graduates, and the percentage and frequency of response to each question were tabulated for the two group categories: graduate and
non-graduate. These nominal data collected from Part A were subjected to chi square analysis.

The data in Part B were considered continuous and were tabulated for each group. A mean response was determined for each factor for each group. A one-way analysis of variance was conducted by factor item to determine whether any significant difference existed between graduates and non-graduates. A rank-ordered tabulation of the problems (factors) encountered by each group was constructed to further facilitate appraisal of the data.

All calculations were conducted by the North Texas State University Computing Center utilizing the Statistical Package for the Social Sciences. The precise probability of occurrence was given for each factor. The criterion used to determine that a significant difference existed was the .05 level of probability for the chi square, the one-tailed t-tests, and the one-way analysis of variance.

This study was conducted during the spring of 1985. The following chapter includes the presentation and analysis of the data collected in this study of doctoral candidates' graduation and attrition after successful completion of qualifying examinations.
CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

This chapter contains an analysis of the data collected about and from the population of this study. The format for the presentation of data follows the sequence of the research questions stated in Chapter I. The responses are presented in tabular form with the appropriate frequency, percentage or mean, and statistical test for significance.

Population

The population consisted of 256 doctoral candidates who had successfully completed oral and written qualifying examinations during the years 1978 through 1980 in the College of Education at North Texas State University, as ascertained by an analysis of student records for those years. A search of the Commencement programs of North Texas State University for the years 1978 through 1984 revealed that 190, or 74.2 per cent, of the population had graduated; 66, or 25.8 per cent, had not graduated by the end of 1984. These data, as well as questionnaire distribution data, are found in Table I.
TABLE I  
DISTRIBUTION OF SURVEY INSTRUMENT

<table>
<thead>
<tr>
<th>Candidates</th>
<th>N</th>
<th>% of Total Population</th>
<th>N Undeliverable</th>
<th>N Dead</th>
<th>N not Returned</th>
<th>N Actually Returned</th>
<th>N Returnable</th>
<th>% of Returnable Actually Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>190</td>
<td>74.2</td>
<td>38</td>
<td>1</td>
<td>26</td>
<td>125</td>
<td>151</td>
<td>82.8</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>66</td>
<td>25.8</td>
<td>11</td>
<td>1</td>
<td>11</td>
<td>43</td>
<td>54</td>
<td>79.6</td>
</tr>
<tr>
<td>Total</td>
<td>256</td>
<td>100.0</td>
<td>49</td>
<td>2</td>
<td>37</td>
<td>168</td>
<td>205</td>
<td>82.0</td>
</tr>
</tbody>
</table>
The survey instrument was mailed to the total population. It is revealed in Table I that 49 questionnaires were returned because the individuals had moved, with current forwarding addresses not available. Individuals for whom addresses were unavailable included 38 graduates and 11 non-graduates. Two of the candidates (one graduate and one non-graduate) are deceased. There were, therefore, 205 deliverable questionnaires, 151 of those going to candidates who had graduated by the end of 1980 and 54 questionnaires going to candidates who had not graduated by that date. A total of 168 questionnaires were completed and returned. Completed questionnaires were received from 125 of the 151 graduates, for a participation rate of 82.8 per cent, and from 43 of the 54 non-graduates, for a participation rate of 79.6 per cent. The combined rate of return for both groups (graduates and non-graduates) was 82.0 per cent. No further analysis of non-respondents was conducted.

Item 4 on the survey instrument was addressed to the non-graduates and elicited information regarding their current degree status: temporarily delayed/in progress, undecided about completion, or will not complete the degree. The data presented in Table II were gathered from the 43 non-graduates who returned the questionnaire. By their own self-assessment, 72.1 per cent of the non-graduates considered their degree programs still in progress; 16.3
TABLE II

DEGREE STATUS OF NON-GRADUATE RESPONDENTS

<table>
<thead>
<tr>
<th>Degree Status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporarily delayed/in progress</td>
<td>31</td>
<td>72.1</td>
</tr>
<tr>
<td>Undecided about completion</td>
<td>7</td>
<td>16.3</td>
</tr>
<tr>
<td>Will not complete the degree</td>
<td>5</td>
<td>11.6</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>43</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

11.6 per cent were undecided regarding eventual completion; and 11.6 per cent had decided not to complete the degree.

Analysis of the Data

**Characteristics of the Graduate and Non-Graduate**

**Analysis of official GRE scores.** The research hypotheses were related to GRE scores (verbal, quantitative, and total) for graduates and non-graduates. The data

TABLE III

AVAILABLE STANDARDIZED TEST SCORES

<table>
<thead>
<tr>
<th>Test Scores</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRE</td>
<td>235</td>
</tr>
<tr>
<td>TOEFL</td>
<td>8</td>
</tr>
<tr>
<td>None available</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>256</strong></td>
</tr>
</tbody>
</table>
relating to this aspect of the study, presented in Table III, were gathered for the total population from student files in the Office of the Graduate Dean at North Texas State University, with scores available for 235 of the 256 candidates. Eight candidates had provided Test of English as a Foreign Language (TOEFL) scores, and scores for the remaining 13 candidates were unavailable.

Data regarding available GRE scores for the total population of 256 doctoral candidates are presented in Table IV. GRE scores are divided into 3 categories: verbal scores, quantitative scores, and total scores. All 3 scores were analyzed using a t-test for statistical significance.

Research hypothesis one stated: "Graduates of doctoral programs in the College of Education have higher GRE verbal scores than non-graduates who have completed the qualifying examinations." The mean GRE verbal score for graduates was 486.58, and that for non-graduates was 511.15. The t-value was -1.45. At the .05 level of significance, no significant difference existed between GRE verbal scores for graduates and those for non-graduates.

Research hypothesis two stated: "Graduates of doctoral programs in the College of Education have higher GRE quantitative scores than non-graduates who have completed the qualifying examinations." The mean GRE
TABLE IV
OFFICIAL GRE SCORES FOR TOTAL POPULATION OF GRADUATES
AND NON-GRADUATES DURING 1978-1980

<table>
<thead>
<tr>
<th></th>
<th>No. of Cases</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>t-value</th>
<th>Degrees of Freedom</th>
<th>1-tail Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>174</td>
<td>486.58</td>
<td>115.86</td>
<td>-1.45</td>
<td>233</td>
<td>0.0735</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>61</td>
<td>511.15</td>
<td>106.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quantitative Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>174</td>
<td>490.98</td>
<td>104.91</td>
<td>-0.22</td>
<td>233</td>
<td>0.4115</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>61</td>
<td>494.43</td>
<td>99.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>174</td>
<td>978.85</td>
<td>172.73</td>
<td>-1.05</td>
<td>233</td>
<td>0.1465</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>61</td>
<td>1005.57</td>
<td>163.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>235*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*13 - unavailable; 8 - TOEFL scores only.
quantitative score for graduates was 490.98, and that for non-graduates was 494.43. The \( t \)-value was -0.22. Therefore at the .05 level of significance, no significant difference existed between GRE quantitative scores for graduates and those for non-graduates.

Research hypothesis three stated: "Graduates of doctoral programs in the College of Education have higher GRE total scores than non-graduates who have completed the qualifying examinations." The mean GRE total score for graduates was 978.85, and that for non-graduates was 1005.57. The \( t \)-value was -1.05. Therefore at the .05 level of significance, no significant difference existed between GRE total scores for graduates and those for non-graduates.

To further analyze the data relating to the research hypotheses, data regarding the GRE scores for only those 168 doctoral candidates who actually completed and returned the questionnaire were also analyzed separately, using the same statistical method as that used to analyze the scores for the total population. Results of that analysis appear in Table V.

The mean GRE verbal score for graduates who responded to the questionnaire was 510.8120, and that for non-graduates who responded to the questionnaire was 522.7907. The \( t \)-value was -0.65. Therefore at the .05 level of significance, no significant difference existed between GRE
### TABLE V

**OFFICIAL GRE SCORES FOR RESPONDENTS**

<table>
<thead>
<tr>
<th></th>
<th>N of Cases</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>t-value</th>
<th>Degrees of Freedom</th>
<th>1-tail Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>117</td>
<td>510.8120</td>
<td>99.505</td>
<td>-0.65</td>
<td>158</td>
<td>0.257</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>43</td>
<td>522.7907</td>
<td>111.319</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quantitative Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>117</td>
<td>494.6154</td>
<td>99.130</td>
<td>0.54</td>
<td>158</td>
<td>0.294</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>43</td>
<td>484.8837</td>
<td>103.403</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>117</td>
<td>1007.3504</td>
<td>149.801</td>
<td>-0.01</td>
<td>158</td>
<td>0.496</td>
</tr>
<tr>
<td>Non-graduates</td>
<td>43</td>
<td>1007.6744</td>
<td>180.948</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
verbal scores for graduates who responded to the questionnaire and those for non-graduates who responded to the questionnaire.

The mean GRE quantitative score for graduates who responded to the questionnaire was 494.6154, and that for non-graduates who responded to the questionnaire was 484.8837. The $t$-value was 0.54. Therefore, at the .05 level of significance, no significant difference existed between GRE quantitative scores for graduates who responded to the questionnaire and those for non-graduates who responded to the questionnaire.

The mean GRE total score for graduates who responded to the questionnaire was 1007.3504, and that for non-graduates who responded to the questionnaire was 1007.6744. The $t$-value was -0.01. Therefore, at the .05 level of significance, no significant difference existed between GRE total scores for graduates who responded to the questionnaire and those for non-graduates who responded to the questionnaire.

Analysis of Data Concerning Respondents. The data presented in the remaining tables were obtained solely from responses to the questionnaire and therefore reflect only those candidates who returned questionnaires. The tables for research questions one through nine are structured to show the investigated characteristic, frequency of
Research question one asked: "Is a candidate's sex a factor in successful completion of a doctorate?" Information relating to this research question was elicited by item one on the questionnaire and the relevant data are presented in Table VI. Respondents who had graduated included 55, or 44 per cent, males and 70, or 56 per cent, females. Respondents who had not graduated included 25, or 58.1 per cent, males and 18, or 41.9 per cent, females. Male candidates who had graduated comprised 68.8 per cent of the male respondents, and female candidates who had graduated comprised 79.5 per cent of the female respondents. The chi square value was 2.56 with one degree of freedom. The level of significance was 0.11, reflecting no significant difference between the sex of graduates and that of non-graduates.

Research question two asked: "Is a candidate's age at the completion of the qualifying examinations a factor in successful completion of a dissertation?" Information regarding this research question was elicited by item two on the questionnaire, and relevant data are found in Table VII. Responses to this item revealed that 21 candidates in the age bracket under 30 years had graduated whereas 3 had not; 27 candidates in the 31-35 years bracket had graduated, and 14 had not; 35 candidates in the 36-40 years
<table>
<thead>
<tr>
<th>Sex Group</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Sex Group Graduated</th>
<th>% of Sex Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>55</td>
<td>44.0</td>
<td>25</td>
<td>58.1</td>
<td>68.8</td>
<td>79.5</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>55.0</td>
<td>43</td>
<td>41.9</td>
<td>79.5</td>
<td>20.5</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
<td>68</td>
<td>100.0</td>
<td>79.5</td>
<td>20.5</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 2.56440 \]
\[ df = 1 \]
\[ p = .1093 \]
TABLE VII
A COMPARISON OF AGE GROUPS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Age Group Graduated</th>
<th>% of Age Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30 years</td>
<td>21</td>
<td>16.8</td>
<td>3</td>
<td>7.1</td>
<td>87.5</td>
<td>12.5</td>
</tr>
<tr>
<td>31-35 years</td>
<td>27</td>
<td>21.6</td>
<td>14</td>
<td>33.3</td>
<td>65.9</td>
<td>34.1</td>
</tr>
<tr>
<td>36-40 years</td>
<td>35</td>
<td>28.0</td>
<td>7</td>
<td>16.7</td>
<td>83.3</td>
<td>16.7</td>
</tr>
<tr>
<td>41-45 years</td>
<td>13</td>
<td>10.4</td>
<td>10</td>
<td>23.8</td>
<td>56.5</td>
<td>43.5</td>
</tr>
<tr>
<td>Over 45 years</td>
<td>29</td>
<td>23.2</td>
<td>8</td>
<td>19.0</td>
<td>78.4</td>
<td>21.6</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
<td>42</td>
<td>99.9*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Total does not equal 100.0 because of rounding.

$\chi^2 = 9.75762$

df = 4

$p = .0447$
bracket had graduated, and 7 had not; 13 candidates in the 41-45 years bracket had graduated whereas 10 had not. The age bracket over 45 comprised 23.2 per cent of all the respondents who had graduated, with 29 having graduated and 8 not having graduated. The chi square value was 9.76 with 4 degrees of freedom. The level of significance was 0.0447. With an acceptable level of significance set at .05 for this study, a significant difference did exist between the age of the candidates at the time of the qualifying examinations for graduates and that for non-graduates. Candidates in the age brackets of under 30 years, 36-40 years, and over 40 years were more likely to graduate.

Research question three asked: "Does a candidate's constancy in marital status affect successful completion of a dissertation?" Information regarding this research question was elicited by item three on the questionnaire, and data gathered from the responses appear in Table VIII. Responses revealed that 118 graduates had experienced no change in their marital status and 6 graduates had; 34 non-graduates had experienced no change in their marital status, and 8 had. Persons who indicated a change of marital status comprised 57.1 per cent of the non-graduates. The chi square value was 8.20 with one degree of freedom. The level of significance was .0042, reflecting a highly significant difference between the constancy of marital status during the proposal/dissertation stage for graduates.
### TABLE VIII

A COMPARISON OF THE CONSTANCY OF MARITAL STATUS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Marital Status Group Graduated</th>
<th>% of Marital Status Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same</td>
<td>118</td>
<td>95.2</td>
<td>34</td>
<td>81.0</td>
<td>77.6</td>
<td>22.4</td>
</tr>
<tr>
<td>Changed</td>
<td>6</td>
<td>4.8</td>
<td>8</td>
<td>19.0</td>
<td>42.9</td>
<td>57.1</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>100.0</td>
<td>42</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 8.20217 \]

\[ df = 1 \]

\[ p = .0042 \]
and that for non-graduates. Graduates experienced a significantly lower rate of change in marital status than non-graduates.

Research question four asked: "Does a candidate's level of income during the dissertation process affect successful completion of a dissertation?" Information relating to this research question was elicited by item five on the questionnaire, and data relevant to this question are presented in Table IX. Responses indicated that 22 graduates were in the below $20,000 bracket, 40 in the $20,000 to $29,999 bracket, 17 in the $30,000 to $39,999 bracket, and 45 in the over $40,000 bracket. Responses from non-graduates revealed that 4 were in the below $20,000 bracket, 9 in the $20,000 to $29,999 bracket, 10 in the $30,000 to $39,999 bracket, and 18 in the over $40,000 bracket. Graduates comprised 84.6 per cent of those earning under $20,000 whereas non-graduates comprised 81.6 per cent of those earning from $20,000 to $29,999. The chi square value was 4.96 with 3 degrees of freedom. The level of significance was .1744. No significant difference, therefore, was found to exist between the family income during the proposal/dissertation stage for graduates and that for non-graduates.

Research question five asked: "Does a candidate's type of employment during the dissertation process affect successful completion of a dissertation?" Information
<table>
<thead>
<tr>
<th>Family Income</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Income Group Graduated</th>
<th>% of Income Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below $20,000</td>
<td>22</td>
<td>17.7</td>
<td>4</td>
<td>9.8</td>
<td>84.6</td>
<td>15.4</td>
</tr>
<tr>
<td>$20,000-$29,999</td>
<td>40</td>
<td>32.3</td>
<td>9</td>
<td>22.0</td>
<td>81.6</td>
<td>18.4</td>
</tr>
<tr>
<td>$30,000-$39,999</td>
<td>17</td>
<td>13.7</td>
<td>10</td>
<td>24.4</td>
<td>63.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Over $40,000</td>
<td>45</td>
<td>36.3</td>
<td>18</td>
<td>43.9</td>
<td>71.4</td>
<td>28.6</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>100.0</td>
<td>41</td>
<td>100.1*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Total does not = 100.0 because of rounding.

\[ \chi^2 = 4.96 \]

\[ df = 3 \]

\[ p = .1744 \]
relating to this research question was elicited by item six on the questionnaire, and data from the responses to this question appear in Table X. Responses from the graduates revealed that 101 were employed in an educational institution, 7 in an education-related position in business or industry, and 11 in a non-education position; 6 were unemployed. Responses from the non-graduates indicated that 30 were employed in an educational institution, 4 in an educational position in business or industry, and 6 in a non-education position; 2 were unemployed. Graduates comprised 64.7 per cent of those who reported employment in a non-educational position. The chi square value was 2.01623 with 3 degrees of freedom. The level of significance was .5690. Therefore, no significant difference existed between the type of employment during the proposal/dissertation process for graduates and that for non-graduates.

Research question six asked: "Does change of employment during the dissertation process affect successful completion of a dissertation?" Information regarding this research question was elicited by item seven on the questionnaire, and data gathered from the responses to this item appear in Table XI. Responses from graduates indicated that 95 had no change in employment whereas 30 did change their employment. Responses from non-graduates revealed that 23 had no change in employment whereas 19 did
TABLE X
A COMPARISON OF TYPE OF EMPLOYMENT FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Type of Employment</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Employment Type Group Graduated</th>
<th>% of Employment Type Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Institution</td>
<td>101</td>
<td>80.8</td>
<td>30</td>
<td>71.4</td>
<td>77.1</td>
<td>22.9</td>
</tr>
<tr>
<td>Educational in Bus/Ind</td>
<td>7</td>
<td>5.6</td>
<td>4</td>
<td>9.5</td>
<td>63.6</td>
<td>36.4</td>
</tr>
<tr>
<td>Non-educational</td>
<td>11</td>
<td>8.8</td>
<td>6</td>
<td>14.3</td>
<td>64.7</td>
<td>35.3</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6</td>
<td>4.8</td>
<td>2</td>
<td>4.8</td>
<td>75.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
<td>42</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 2.01623$

df = 3

p = .5690
<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Graduates</th>
<th>Non-graduates</th>
<th>Graduated Group</th>
<th>Not Graduated Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same</td>
<td>95</td>
<td>23</td>
<td>76.0</td>
<td>61.2</td>
</tr>
<tr>
<td>Changed</td>
<td>30</td>
<td>42</td>
<td>74.0</td>
<td>61.2</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>65</td>
<td>76.0</td>
<td>61.2</td>
</tr>
</tbody>
</table>

\( \chi^2 = 6.83956 \)
\( df = 1 \)
\( p = 0.089 \)
change their employment. Graduates comprised 61.2 per cent of those reporting a change in employment. The chi square value was 6.83956 with one degree of freedom. The level of significance was .0089, indicating a significant difference existed between the factor of employment change during the proposal/dissertation process for graduates and that for non-graduates. Graduates experienced a change of employment significantly less than non-graduates.

Research question seven asked: "Does the length of time between the attainment of the master's degree and completion of the doctoral qualifying examinations affect successful completion of a dissertation?" Information relating to this research question was elicited by item eight on the questionnaire, and data gathered from responses to this question are presented in Table XII. Responses from graduates indicated that 45 had completed the master's degree less than 5 years before passing the qualifying examinations; 49 were in the 6-10 years category, 18 in the 11-15 years category, 8 in the 16-20 years category, 2 in the 21-25 years category, and 3 in the more than 25 years category. Responses from non-graduates revealed that 13 had completed the master's degree less than 5 years before passing the qualifying examinations; 18 were in the 6-10 years category, 7 in the 11-15 years category, 3 in the 16-20 years category, and one in the over 25 years category. No non-graduates were found in the
### TABLE XII

A COMPARISON OF YEARS BETWEEN MASTER'S DEGREE AND DOCTORAL QUALIFYING EXAMINATIONS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Years Since Master's'</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Group Graduated</th>
<th>% of Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>45</td>
<td>36.0</td>
<td>13</td>
<td>31.0</td>
<td>77.6</td>
<td>22.4</td>
</tr>
<tr>
<td>6-10 years</td>
<td>49</td>
<td>39.2</td>
<td>18</td>
<td>42.9</td>
<td>73.1</td>
<td>26.9</td>
</tr>
<tr>
<td>11-15 years</td>
<td>18</td>
<td>14.4</td>
<td>7</td>
<td>16.7</td>
<td>72.0</td>
<td>28.0</td>
</tr>
<tr>
<td>16-20 years</td>
<td>8</td>
<td>6.4</td>
<td>3</td>
<td>7.1</td>
<td>72.7</td>
<td>27.3</td>
</tr>
<tr>
<td>21-25 years</td>
<td>2</td>
<td>1.6</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Over 25 years</td>
<td>3</td>
<td>2.4</td>
<td>1</td>
<td>2.4</td>
<td>75.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
<td>42</td>
<td>100.1*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Total does not equal 100.0 because of rounding.

\[ \chi^2 = 1.14170 \]

df = 5

p = .9503
21-25 years category. The chi square value was 1.14170 with 5 degrees of freedom. The level of significance was .9503. Therefore, no significant difference existed between the length of time between receipt of the master's degree and completion of the doctoral qualifying examinations for graduates and that for non-graduates.

Research question eight asked: "Is completion of a master's degree that included a thesis a factor in successful completion of a dissertation?" Information relating to this research question was elicited by item nine on the questionnaire, and relevant data are presented in Table XIII. Responses of graduates revealed that 35 had written a thesis as part of their master's degree whereas 90 had not. Responses of non-graduates revealed that 14 had written a thesis as part of their master's degree whereas 28 had not. Responses indicated that 71.4 per cent of those candidates who had written a master's thesis had also completed the dissertation. However, responses also indicated that 76.3 per cent of those candidates who had not written a master's thesis had completed the dissertation. The chi square value was 0.43131 with one degree of freedom. The level of significance was .5113. Therefore, no significant difference existed between those graduates who had completed a master's degree including a thesis and non-graduates who had completed a master's degree including a thesis.
### TABLE XIII

A COMPARISON OF MASTER'S DEGREE THESIS COMPLETION FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Thesis</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Group Graduated</th>
<th>% of Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>28.0</td>
<td>14</td>
<td>33.3</td>
<td>71.4</td>
<td>28.6</td>
</tr>
<tr>
<td>No</td>
<td>90</td>
<td>72.0</td>
<td>28</td>
<td>66.7</td>
<td>76.3</td>
<td>23.7</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
<td>42</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 0.43131$

df = 1

p = .5113
Research question nine asked: "Is the timing of the selection of a dissertation topic a factor in successful completion of a dissertation?" Information relating to this research question was elicited by item ten on the questionnaire, and data gathered from responses to that item are shown in Table XIV. Responses from graduates indicated that 56 had decided on the dissertation topic before the qualifying examinations whereas 68 had waited until after the qualifying examinations. Responses from non-graduates revealed that 7 had decided on a topic prior to the qualifying examinations whereas 26 had delayed until after the qualifying examinations. Nine non-graduates remained undecided as to a dissertation topic. Since graduates could not have remained undecided as to a topic and since non-graduates remaining undecided necessarily fall into the category including those who chose their dissertation topic after the qualifying examinations, for the purposes of statistical analysis the categories of after the dissertation and undecided were combined. Such a combination reflected a total of 35 non-graduates who delayed until after the qualifying examinations to choose a dissertation topic. The chi square value was 10.81752 with one degree of freedom. The level of significance was 0.0010, reflecting that a significant difference did exist between the timing of the selection of a dissertation for graduates and that for non-graduates. Of candidates who
### TABLE XIV

A COMPARISON OF TIME OF SELECTION OF DISSERTATION FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Dissertation Selection Time</th>
<th>N</th>
<th>% of Graduates</th>
<th>N</th>
<th>% of Non-graduates</th>
<th>% of Group Graduated</th>
<th>% of Group not Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Qualifying Exams</td>
<td>56</td>
<td>45.2</td>
<td>7</td>
<td>16.7</td>
<td>88.9</td>
<td>11.1</td>
</tr>
<tr>
<td>After Qualifying Exams</td>
<td>68</td>
<td>54.6</td>
<td>35</td>
<td>83.3</td>
<td>66.0</td>
<td>34.0</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>100.0</td>
<td>42</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.81752 \]

\[ df = 1 \]

\[ p = .0010 \]
had selected the topic for their dissertation before the qualifying examinations, 88.9 per cent subsequently completed the dissertation.

**Attitudes and Problems of Graduates and Non-Graduates**

Tables containing data relating to research question ten, parts A through P, are structured to show the frequencies and the means for the groups of graduates and non-graduates, as well as the value for the F ratio, the degrees of freedom, and the level of significance for each factor studied.

Research question ten, part A, asked: "Is the rating for personal motivation similar for graduates and non-graduates?" Information relative to this research question was elicited by item eleven on the questionnaire, and the relevant data are found in Table XV. The mean for graduates was 4.4754, and the mean for non-graduates was 2.8837. The F ratio was 108.6476 with 164 degrees of freedom. The level of significance was less than .0001, revealing the existence of a highly significant difference between the ratings of motivation by graduates and those by non-graduates. Graduates rated personal motivation significantly higher than did non-graduates.

Research question ten, part B, asked: "Is the rating for funds available for conducting, implementing, and reporting research similar for graduates and
TABLE XV

A COMPARISON OF PERSONAL MOTIVATION RATINGS BY GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Personal Motivation</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>122</td>
<td>4.4754</td>
<td>108.6476</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.8837</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>164</td>
<td>4.0606</td>
<td></td>
</tr>
</tbody>
</table>

df = 164
p < .0001

non-graduates?" Information regarding this research question was elicited by item twelve on the questionnaire, and the tabulation of responses is shown in Table XVI. The mean for graduates was 2.8618, and the mean for non-graduates was 2.5581. The F ratio was 2.1580 with 165 degrees of freedom. The level of significance was .1437. Therefore, no significant difference existed between the ratings of funds available for research by graduates and those by non-graduates.

Research question ten, part C, asked: "Is the rating for time available for conducting, implementing, and reporting research similar for graduates and non-graduates?" Information relating to this research question was elicited by item thirteen on the questionnaire, and the
relevant data are presented in Table XVII. The mean for graduates was 2.7661, and the mean for non-graduates was 1.8837. The F ratio was 29.5883 with 166 degrees of freedom. The level of significance was less than .0001, reflecting the existence of a highly significant difference between the ratings of time available for research by graduates and those by non-graduates. Although both means are low, graduates ranked the available time for research significantly higher than did non-graduates.

Research question ten, part D, asked: "Is the rating for physical well-being similar for graduates and non-graduates?" Information regarding this research question was elicited by item fourteen on the questionnaire, and the data relating to physical well-being may be
TABLE XVII

A COMPARISON OF TIME AVAILABLE RATINGS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Time Available</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>124</td>
<td>2.7661</td>
<td>29.5883</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>1.8837</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>167</td>
<td>2.5389</td>
<td></td>
</tr>
</tbody>
</table>

df = 166
p < .0001

found in Table XVIII. The mean for graduates was 3.7680, and the mean for non-graduates was 3.500. The F ratio was 2.3764 with 166 degrees of freedom. The level of significance was .1251. Therefore, no significant difference existed between the ratings of physical well-being by graduates and those by non-graduates.

Research question ten, part E, asked: "Is the rating for the support of the major professor similar for graduates and non-graduates?" Information relative to this research question was elicited by item fifteen on the questionnaire, and responses to this item appear in Table XIX. The mean for graduates was 4.0484, and the mean for non-graduates was 3.5349. The F ratio was 7.2198 with 166 degrees of freedom. The level of significance was
### TABLE XVIII

**A COMPARISON OF PHYSICAL WELL-BEING RATINGS FOR GRADUATES AND NON-GRADUATES**

<table>
<thead>
<tr>
<th>Physical Well-Being</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>3.7680</td>
<td>2.3764</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>42</td>
<td>3.5000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>167</td>
<td>3.7006</td>
<td></td>
</tr>
</tbody>
</table>

\[ df = 166 \]

\[ p = .1251 \]

### TABLE XIX

**A COMPARISON OF SUPPORT OF MAJOR PROFESSOR RATINGS FOR GRADUATES AND NON-GRADUATES**

<table>
<thead>
<tr>
<th>Support of Major Professor</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>124</td>
<td>4.0484</td>
<td>7.2198</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>3.5349</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>167</td>
<td>3.9162</td>
<td></td>
</tr>
</tbody>
</table>

\[ df = 166 \]

\[ p = .0079 \]
.0079, indicating that a highly significant difference existed between the ratings of support of the major professor by graduates and those by non-graduates. Graduates rated the support of the major professor significantly higher than did non-graduates.

Research question ten, part F, asked: "Is the rating for the support of the committee similar for graduates and non-graduates?" Information relating to this research question was elicited by item sixteen on the questionnaire, and relevant data are shown in Table XX. The mean for graduates was 3.4435, and the mean for non-graduates was 2.6512. The F ratio was 18.9694 with 166 degrees of freedom. The level of significance was less than .0001, indicating the existence of a highly significant difference.

TABLE XX
A COMPARISON OF SUPPORT OF COMMITTEE RATINGS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Support of Committee</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>124</td>
<td>3.4435</td>
<td></td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.6512</td>
<td>18.9694</td>
</tr>
<tr>
<td>Total</td>
<td>167</td>
<td>3.2395</td>
<td></td>
</tr>
</tbody>
</table>

df = 166
p < .0001
significant difference between the ratings of the support of the committee by graduates and those by non-graduates. Graduates rated the support of the committee significantly higher than did non-graduates.

Research question ten, part G, asked: "Is the rating for the support of peers similar for graduates and non-graduates?" Information regarding this research question was elicited by item seventeen on the questionnaire, and the data relevant to peers appear in Table XXI.

**TABLE XXI**

**A COMPARISON OF SUPPORT OF PEERS RATINGS FOR GRADUATES AND NON-GRADUATES**

<table>
<thead>
<tr>
<th>Support of Peers</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>124</td>
<td>3.7016</td>
<td></td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>42</td>
<td>3.3095</td>
<td>4.5217</td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>3.6024</td>
<td></td>
</tr>
</tbody>
</table>

\[ df = 165 \]

\[ p = .0350 \]

The mean for graduates was 3.7016, and the mean for non-graduates was 3.3095. The F ratio was 4.5217 with 165 degrees of freedom. The level of significance was .0350, indicating that a significant difference did exist between
the ratings of peer support by graduates and those by non-graduates. Graduates rated peer support significantly higher than did non-graduates.

Research question ten, part H, asked: "Is the rating for university assistance in selecting the dissertation topic similar for graduates and non-graduates?"

Information relating to this research question was elicited by item eighteen on the questionnaire, and data regarding university assistance are found in Table XXII. The mean

<table>
<thead>
<tr>
<th>University Assistance</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>2.7040</td>
<td>.8162</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.5116</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>2.6548</td>
<td></td>
</tr>
</tbody>
</table>

df = 167

p = .3676

for graduates was 2.7040, and the mean for non-graduates was 2.5116. The F ratio was .8162 with 167 degrees of freedom. The level of significance was .3676. Therefore, no significant difference existed between the ratings of
university assistance by graduates and those by non-graduates.

Research question ten, part I, asked: "Is the rating for preparation through courses in the major for the proposal/dissertation stage similar for graduates and non-graduates? Information regarding this research question was elicited by item nineteen on the questionnaire, and the data relative to this question are presented in Table XXIII. The mean for graduates was 3.0320, and the

<table>
<thead>
<tr>
<th>Major Course Preparation</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>3.0320</td>
<td>1.6717</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.7907</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>2.9702</td>
<td></td>
</tr>
</tbody>
</table>

df = 167
p = .1978

mean for non-graduates was 2.7907. The F ratio was 1.6717 with 167 degrees of freedom. The level of significance was .1978. Therefore, no significant difference existed between the ratings of the preparation for the dissertation
stage by courses in the major by graduates and those by non-graduates.

Research question ten, part J, asked: "Is the rating for preparation through courses in the minor/related area for the proposal/dissertation stage similar for graduates and non-graduates?" Information relating to this research question was elicited by item twenty on the questionnaire, and relevant data are shown in Table XXIV.

**TABLE XXIV**

A COMPARISON OF PREPARATION THROUGH COURSES IN MINOR/RELATED AREA FOR PROPOSAL/DISSERTATION STAGE FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Minor Course Preparation</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>2.9120</td>
<td>1.5862</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.6512</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>2.8452</td>
<td></td>
</tr>
</tbody>
</table>

df = 167

p = .2096

The mean for graduates was 2.9120, and the mean for non-graduates was 2.6512. The F ratio was 1.5862 with 168 degrees of freedom. The level of significance was .2096. Therefore, no significant difference existed between the ratings of preparation for the dissertation stage by
courses in the minor by graduates and those by non-graduates.

Research question ten, part K, asked: "Is the rating for preparation through courses in statistics and research for the proposal/dissertation stage similar for graduates and non-graduates?" Information regarding this research question was elicited by item twenty-one on the questionnaire, and data revealing the responses to that question are presented in Table XXV. The mean for gradu-

TABLE XXV

A COMPARISON OF PREPARATION THROUGH COURSES IN STATISTICS AND RESEARCH FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Statistics Course Preparation</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>3.4080</td>
<td>10.5725</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>42</td>
<td>2.8333</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>167</td>
<td>3.2635</td>
<td></td>
</tr>
</tbody>
</table>

df = 166  
p = .0014

ates was 3.4080, and the mean for non-graduates was 2.8333. The F ratio was 10.5725 with 166 degrees of freedom. The level of significance was .0014, indicating that a highly significant difference did exist between the ratings of
preparation by courses in statistics and research for the dissertation process by graduates and those by non-graduates. Graduates rated the preparation by courses in statistics and research significantly higher than did non-graduates.

Research question ten, part L, asked: "Is the rating for support for the dissertation effort from the university similar for graduates and non-graduates?" Information relevant to this research question was elicited by item twenty-two on the questionnaire, and tabulation of responses to this question is shown in Table XXVI. The mean for graduates was 3.6311, and the mean for non-graduates was 3.0930. The F ratio was 8.5253 with 164 degrees of freedom. The level of significance was .0040,

<table>
<thead>
<tr>
<th>University support</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>122</td>
<td>3.6311</td>
<td></td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>3.0930</td>
<td>8.5253</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>3.4909</td>
<td></td>
</tr>
</tbody>
</table>

df = 164

p = .0040
indicating that a highly significant difference did exist between the ratings of university support for the dissertation by graduates and those by non-graduates. Graduates rated university support significantly higher than did non-graduates.

Research question ten, part M, asked: "Is the rating for support of dissertation effort from the spouse similar for married graduates and married non-graduates?" Information relating to this research question was elicited by item twenty-three on the questionnaire, and data gathered from responses to this question appear in Table XXVII. The mean for graduates was 4.1327, and the mean for non-graduates was 3.7500. The F ratio was 2.7355 with 129 degrees of freedom. The level of significance was .1006.

### TABLE XXVII

A COMPARISON OF SPOUSE SUPPORT FOR DISSERTATION EFFORT RATINGS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Spouse Support</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>98</td>
<td>4.1327</td>
<td></td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>32</td>
<td>3.7500</td>
<td>2.7355</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>4.0385</td>
<td></td>
</tr>
</tbody>
</table>

df = 129

p = .1006
Therefore, no significant difference existed between the ratings of spousal support for the dissertation effort by graduates and those by non-graduates.

Research question ten, part N, asked: "Is the rating for support of dissertation efforts from family and/or friends similar for graduates and non-graduates?" Information relative to this research question was elicited by item twenty-four on the questionnaire, and pertinent data are presented in Table XVIII. The mean for graduates

TABLE XXVIII

A COMPARISON OF FAMILY AND/OR FRIEND SUPPORT FOR DISSERTATION EFFORT RATINGS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Family/Friend Support</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>123</td>
<td>3.9268</td>
<td></td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>3.4419</td>
<td>7.0248</td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>3.8012</td>
<td></td>
</tr>
</tbody>
</table>

\[ df = 165 \]
\[ p = .0088 \]

was 3.9268, and the mean for non-graduates was 3.4419. The F ratio was 7.0248 with 166 degrees of freedom. The level of significance was .0088, indicating that a highly significant difference did exist between the ratings of support of
family and friends toward the dissertation effort by graduates and that by non-graduates. Graduates gave significantly higher ratings to the support of family and friends than did non-graduates.

Research question ten, part 0, asked: "Is the rating for job-related incentive/pressure to complete the degree similar for graduates and non-graduates?" Information regarding this research question was elicited by item twenty-five on the questionnaire, and relevant data are shown in Table XXIX. The mean for graduates was 2.9187, and the mean for non-graduates was 2.0698. The F ratio was 13.2608 with 165 degrees of freedom. The level of significance was .0004, indicating that a highly significant difference did exist between the ratings.

TABLE XXIX
A COMPARISON OF JOB-RELATED INCENTIVE/PRESSURE TO COMPLETE THE DEGREE RATINGS FOR GRADUATES AND NON-GRADUATES

<table>
<thead>
<tr>
<th>Job-related Incentive/Pressure</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>123</td>
<td>2.9187</td>
<td>13.2608</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.0698</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>2.6988</td>
<td></td>
</tr>
</tbody>
</table>

df = 165
p = .0004
of job-related incentive/pressure to complete the degree by graduates and those by non-graduates. Graduates rated the job-related incentive/pressure to complete the degree significantly higher than did non-graduates.

Research question ten, part P, asked: "Is the rating for the person's ability to work within the university's scheduled deadlines similar for graduates and non-graduates?" Information pertaining to this research question was elicited by item twenty-six on the questionnaire, and relevant data are presented in Table XXX. The mean for graduates was 3.8160, and the mean for non-graduates was 2.7907. The F ratio was 38.2713 with 168 degrees of freedom. The level of significance was less than .0001, indicating that a highly significant

<table>
<thead>
<tr>
<th>Ability to Meet Deadlines</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>125</td>
<td>3.8160</td>
<td>38.2713</td>
</tr>
<tr>
<td>Non-Graduates</td>
<td>43</td>
<td>2.7907</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>3.5536</td>
<td></td>
</tr>
</tbody>
</table>

df = 167

p < .0001
difference did exist between the ratings of the person's ability to work within the university's scheduled deadlines by graduates and those by non-graduates. Graduates rated their ability to work within the university's deadlines significantly higher than did non-graduates.

Respondents were given the option to add another factor and rate that factor. Neither tabulation nor statistical analysis was appropriate for the twelve resulting additions since no duplication of factors suggested occurred. Graduates added the following factors: satisfaction with application to career, support from graduate office, cooperation of other colleges/universities, library hours, sensitivity to graduate students' needs by faculty, copy services of the print shop, guidance for format, and dissertation population response. Non-graduates mentioned the following factors: support of minor professor, staff time outside of regular business hours for full-time employed candidates, professor's statement that it could not be done, and personal embarrassment at not having it finished.

To facilitate further an appraisal of the data elicited by the questionnaire, the factors relating to attitudes and problems were rank-ordered from the highest to the lowest mean, making possible a composite examination of the factors that earned the highest and the lowest ratings for their availability or presence during the
proposal/dissertation stage. The rank order by mean resulting from responses by graduates is displayed in Table XXXI, and the rank order by mean resulting from responses by non-graduates is displayed in Table XXXII.

The graduates' ratings overall were higher than those assigned by the non-graduates. The range of means for graduates was from 2.7040 to 4.4754. The range of means for non-graduates was from 1.8837 to 3.7500.

The responses from graduates resulted in the highest mean ratings for personal motivation, support from spouse, support from major professor, support from family and/or friends, and ability to meet deadlines. The responses from non-graduates resulted in the highest mean ratings for well-being, support from family and/or friends, and support of peers. Both groups had high mean ratings for support from spouse, major professor, and family and/or friends. Graduates gave personal motivation the highest mean rating; personal motivation, however, did not appear in the five highest ratings by non-graduates.

The responses from graduates resulted in the lowest mean ratings for university assistance in selecting a dissertation topic, time for research, funds for research, preparation from minor courses, and job incentive/pressure to complete the degree. The responses from non-graduates resulted in the lowest mean ratings for time for research, job incentive/pressure to complete the degree, university
<table>
<thead>
<tr>
<th>Rank</th>
<th>Factor</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal motivation</td>
<td>4.4754</td>
</tr>
<tr>
<td>2</td>
<td>Support from spouse</td>
<td>4.1327</td>
</tr>
<tr>
<td>3</td>
<td>Support of major professor</td>
<td>4.0484</td>
</tr>
<tr>
<td>4</td>
<td>Support from family and/or friends</td>
<td>3.9268</td>
</tr>
<tr>
<td>5</td>
<td>Ability to meet deadlines</td>
<td>3.8160</td>
</tr>
<tr>
<td>6</td>
<td>Physical well-being</td>
<td>3.7680</td>
</tr>
<tr>
<td>7</td>
<td>Support of peers</td>
<td>3.7016</td>
</tr>
<tr>
<td>8</td>
<td>University support with dissertation</td>
<td>3.6311</td>
</tr>
<tr>
<td>9</td>
<td>Support of committee</td>
<td>3.4435</td>
</tr>
<tr>
<td>10</td>
<td>Preparation through statistics/research courses</td>
<td>3.4080</td>
</tr>
<tr>
<td>11</td>
<td>Preparation through courses in major</td>
<td>3.0320</td>
</tr>
<tr>
<td>12</td>
<td>Job incentive/pressure</td>
<td>2.9187</td>
</tr>
<tr>
<td>13</td>
<td>Preparation from minor courses</td>
<td>2.9120</td>
</tr>
<tr>
<td>14</td>
<td>Funds available for research</td>
<td>2.8618</td>
</tr>
<tr>
<td>15</td>
<td>Time available for research</td>
<td>2.7661</td>
</tr>
<tr>
<td>16</td>
<td>University assistance with topic</td>
<td>2.7040</td>
</tr>
</tbody>
</table>
### TABLE XXXII

A RANK ORDER SUMMARY OF FACTORS DURING PROPOSAL/DISSERTATION STAGE FOR NON-GRADUATES

<table>
<thead>
<tr>
<th>Rank</th>
<th>Factor</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support from spouse</td>
<td>3.7500</td>
</tr>
<tr>
<td>2</td>
<td>Support of major professor</td>
<td>3.5349</td>
</tr>
<tr>
<td>3</td>
<td>Physical well being</td>
<td>3.5000</td>
</tr>
<tr>
<td>4</td>
<td>Support from family and/or friends</td>
<td>3.4419</td>
</tr>
<tr>
<td>5</td>
<td>Support of peers</td>
<td>3.3095</td>
</tr>
<tr>
<td>6</td>
<td>University support with dissertation</td>
<td>3.0930</td>
</tr>
<tr>
<td>7</td>
<td>Personal motivation</td>
<td>2.8837</td>
</tr>
<tr>
<td>8</td>
<td>Preparation from statistics/research courses</td>
<td>2.8333</td>
</tr>
<tr>
<td>9</td>
<td>Ability to meet deadlines</td>
<td>2.7907</td>
</tr>
<tr>
<td>10</td>
<td>Preparation from major courses</td>
<td>2.7907</td>
</tr>
<tr>
<td>11</td>
<td>Support of committee</td>
<td>2.6512</td>
</tr>
<tr>
<td>12</td>
<td>Preparation from minor courses</td>
<td>2.6512</td>
</tr>
<tr>
<td>13</td>
<td>Funds available for research</td>
<td>2.5581</td>
</tr>
<tr>
<td>14</td>
<td>University assistance with topic</td>
<td>2.5116</td>
</tr>
<tr>
<td>15</td>
<td>Job incentive/pressure</td>
<td>2.0698</td>
</tr>
<tr>
<td>16</td>
<td>Time available for research</td>
<td>1.8837</td>
</tr>
</tbody>
</table>
assistance in selecting a dissertation topic, funds for research, support of the committee, and preparation from minor courses for the proposal/dissertation stage. Non-graduates had one additional factor rated lowest because of a tie for the fifth lowest mean—support of the committee. The lowest mean ratings, therefore, were essentially the same five factors.

Summary

A study was conducted of the 256 students who successfully completed oral and written qualifying examinations in the College of Education at North Texas State University from 1978 through 1980. An examination of commencement programs determined that 190 candidates had graduated, for a completion rate of 74.2 per cent. A one-tailed t-test of Graduate Record Examination scores (verbal, quantitative, and total) revealed no significant differences scores for graduates and those for non-graduates.

Although 256 questionnaires were mailed, the actual return was 125 out of 151 by graduates, for a rate of 82.8 per cent, 43 out of 54 from non-graduates, for a rate of 79.6 per cent, and 168 out of 205 deliverable questionnaires, for an overall return rate of 82.0 per cent.

The responses to each item in Part A of the questionnaire were subjected to chi square analysis as a test of
statistical significance. No significant difference between graduates and non-graduates was found for the following factors: sex, family income during the proposal/dissertation stage, type of employment, length of time between the completion of the master's degree and the doctoral qualifying examinations, or the completion of a thesis in a master's program. A significant difference was found between graduates and non-graduates for the following factors: age group at the time of the qualifying examinations, the constancy of the marital status, the constancy in employment, and the timing of the selection of a dissertation topic.

The responses to each item of Part B of the questionnaire were subjected to a one-way analysis of variance as a test of statistical significance. No significant difference was found between graduates and non-graduates for the following factors: funds for research, physical well-being, university assistance in selecting a dissertation topic, preparation through courses in the major for the proposal/dissertation stage, preparation through courses in the minor for the proposal/dissertation stage, and support of spouse.

Statistical significance, however, was determined for other factors. The differences between graduates' and non-graduates' ratings of personal motivation, time for research, support of the committee, job pressure/incentive
to complete the degree, and the ability to meet university deadlines were highly significant. The differences between graduates' and non-graduates' ratings of preparation through courses in statistics and research for the proposal/dissertation stage, support from family and/or friends, support from the university for dissertation efforts, support from the major professor, and support from peers were significant.

The rank order of the lowest mean ratings revealed that graduates and non-graduates gave basically the same core of factors the lowest ratings. The lowest rated situations and/or problems faced by graduates and non-graduates, then, were generally the same factors, but they were seen somewhat more negatively by the non-graduates. The rank order of the highest means also exhibited a commonality of several factors. The major difference, however, was that personal motivation received the highest rating from the graduates, but did not appear in the top five ratings on the rank order of means for non-graduates.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine whether differences exist between characteristics and attitudes of graduates and those of non-graduates of doctoral programs in education. A comprehensive review of related literature was conducted, focusing on the following three aspects of doctoral attrition: (1) rates of completion and non-completion, (2) characteristics of graduates and non-graduates of doctoral programs, and (3) attitudes and problems of graduates and non-graduates of doctoral programs.

It can be concluded from the review of the literature that little comprehensive research has been done either on a regional or on a national level. Institutional research has sometimes been inconsistent and ambiguous. According to the current literature, the characteristics of graduates are that they (1) have higher quantitative Graduate Record Examination scores than do non-graduates, (2) are no longer predominantly male, (3) are not of a particular age, (4)
are not necessarily single, and (5) may have a lower income at the time of the qualifying examinations than do non-graduates.

In this study, students who had graduated were compared with students who had not graduated. The subjects were the 256 students who had successfully completed the qualifying examinations in the College of Education at North Texas State University during the years 1978 through 1980. The data for overall completion rate and analysis of Graduate Record Examination scores were obtained from Commencement programs and from student files. The demographic and attitudinal data were collected from responses to a questionnaire mailed to the 205 candidates for whom the university had accurate addresses. The overall return rate for the questionnaire was 82.0 per cent. Computations of frequencies, proportions, means, and statistical analyses were conducted at the North Texas State University Computing Center utilizing the Statistical Package for the Social Sciences (SPSS).

For purposes of statistical analysis, the students were divided into two groups: graduates and non-graduates. The research hypotheses relating to GRE scores were tested with a one-tailed t-test of significance. Chi square analysis for significance was conducted on the nominal data elicited by Part A of the questionnaire. A one-way
analysis of variance was conducted by item on the data elicited by Part B of the questionnaire. Values at the .05 or less level of significance were reported as significant.

Findings

Analysis of the data presented in Chapter IV yielded the following findings.

1. Of the students who had successfully completed the qualifying examinations in the College of Education at North Texas State University during the years 1978 through 1980,
   A. 74.2 per cent had graduated, and
   B. 25.8 per cent had not graduated.

2. There were significant differences between graduates and non-graduates at the .01 level of significance in the following areas:
   A. Constancy of marital status (Graduates were more likely to have maintained the same marital status during the proposal/dissertation stage),
   B. Constancy in employment (Graduates were more likely to have maintained the same employment),
   C. Timing of selection of dissertation topic (Graduates were more likely to have selected
the dissertation topic before the qualifying examinations),

D. Personal motivation (Graduates rated personal motivation higher than did non-graduates),

E. Time for research (Graduates rated time for research higher than did non-graduates),

F. Support from major professor (Graduates rated the support from the major professor higher than did non-graduates),

G. Ability to meet deadlines (Graduates rated ability to meet deadlines higher than did non-graduates),

H. Support from university for dissertation efforts (Graduates rated support from the university for the dissertation effort higher than did non-graduates),

I. Preparation through courses in statistics and research for proposal/dissertation stage (Graduates rated the preparation through courses in statistics and research higher than did non-graduates),

J. Support of committee (Graduates rated support of the committee higher than did non-graduates),
K. Support from family and/or friends (Graduates rated support from family and/or friends higher than did non-graduates),
L. Job pressure/incentive to complete degree (Graduates rated job pressure/incentive higher than did non-graduates).

3. There were significant differences between graduates and non-graduates at the .05 level of significance in the following areas:
   A. Age (Graduates were more likely to be in the age categories of less than thirty years, thirty-six to forty years, and over forty-five years),
   B. Support from peers (Graduates rated the support from peers higher than did non-graduates).

4. There were no differences between graduates and non-graduates in the following areas:
   A. GRE scores (verbal, quantitative, and total),
   B. Sex,
   C. Family income during the proposal/dissertation stage,
   D. Type of employment,
   E. Length of time between the completion of the master's degree and the doctoral qualifying examinations,
F. Completion of a thesis in a master's program,
G. Funds available for research,
H. Physical well-being,
I. University assistance in selecting a dissertation topic,
J. Preparation through courses in the major for the proposal/dissertation stage,
K. Preparation through courses in the minor for the proposal/dissertation stage,
L. Support of spouse for dissertation effort.

Conclusions

The following conclusions can be drawn from the findings of this study.

1. The process of going through a doctoral program discourages the less serious students before they reach the qualifying examinations.

2. For students who complete the qualifying examinations, the GRE scores (verbal, quantitative, and total) do not constitute a difference between graduates and non-graduates.

3. Graduates have high personal motivation and receive high support for the dissertation effort. Either high personal motivation attracts support from many segments of the student's life (spouse, family, friends, major professor, and doctoral committee) or the support from all
segments of the student's life results in high personal motivation for the student. The causes and effects of personal motivation were not investigated by this study.

4. The timing of the selection of the dissertation topic appears to be a critical factor for doctoral students. Students who decide on a topic before the qualifying examinations are distinctly more likely to graduate than are those who delay the decision.

5. The support that the student perceives from the major professor and the committee is a contributor to graduation. Findings from previous studies have addressed this topic, but studies have not compared ratings by graduates and non-graduates from the same program.

6. Sex is not a deterrent to graduation; neither males nor females are more likely to graduate.

7. Students whose employment provides either pressure or an incentive for degree completion are more likely to graduate. Students who perceive low interest in the degree by their employers are less likely to graduate. This is a new area of research in the literature.

8. A major change in the life of the candidate, either a change in marital status or employment status, is a deterrent to graduation.

9. Financial status is not a factor in graduation. This conclusion is consistent with recent studies (Davis
and Bartels) and helps dispel the more dated conclusion that lack of sufficient financial means deters graduation.

10. Even though both graduates and non-graduates gave low ratings for time available for research, graduates either have or make more time available for completing the dissertation.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made.

1. Research should be encouraged that examines the personal motivation of the graduate and the non-graduate to identify whether the source of the motivation is intrinsic or extrinsic to the student. If the source is extrinsic and is related to the university, the programs, or the faculty, then interested universities, faculty, and advisors may be able to increase support for otherwise non-graduating students.

2. Research should be encouraged that examines students' attitudes toward and grades in courses in research and statistics and the role these have on attrition.

3. Universities should consider the completion rate of doctoral students in the evaluation of doctoral programs and should therefore maintain records that allow for the
determination of the completion rate of doctoral candidates.

4. Graduate faculty and major professors should encourage doctoral students to give serious consideration to possible dissertation topics early in their programs and to try to decide on a topic before completing their qualifying examinations.
APPENDICES
APPENDIX A

PRELIMINARY FORM OF QUESTIONNAIRE

Part A

Directions: Please circle the letter of the most appropriate answer.

1. Sex
   A. Female
   B. Male

2. Age at completion of qualifying examinations
   A. 26-30 years
   B. 31-35 years
   C. 36-40 years
   D. 41-45 years
   E. Over 45

3. Marital status
   A. Remained same during proposal/dissertation stage
   B. Changed during proposal/dissertation stage

4. Degree status
   A. Ph.D. or Ed.D. completed
   B. Degree not completed: temporarily delayed
   C. Degree not completed: undecided about completion
   D. Degree not completed: will not complete it

5. Average family income (annual) during proposal/dissertation stage
   A. Below $20,000
   B. $20,000-$29,999
   C. $30,000-$39,999
   D. Over $40,000
6. Present employment (whether full-time or part-time)
   A. Educational institution
   B. Education-related position in industry
   C. Non-education position
   D. Unemployed

7. Employment status
   A. Remained same during proposal/dissertation stage
   B. Changed during proposal/dissertation stage

8. How long after you finished your master's degree did you complete the doctoral qualifying examinations?
   A. Under 5 years
   B. 6-10 years
   C. 11-15 years
   D. 16-20 years
   E. 21-25 years
   F. Over 25 years

Part B

Directions: Please circle the most appropriate number to rate each factor below as to its impact in the proposal/dissertation stage of your educational program.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Low 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>9. Personal motivation (perseverance, tenacity)</td>
<td></td>
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<tr>
<td>10. Funds available for conducting, implementing, and reporting research</td>
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<tr>
<td>11. Time available for conducting, implementing, and reporting research</td>
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<td>12. Physical well being</td>
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<td>13. Support of major professor</td>
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<td>14. Support of committee</td>
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<td>15. Support of peers</td>
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<td></td>
<td>Description</td>
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<td>16.</td>
<td>University assistance in determining topic</td>
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<td>17.</td>
<td>Preparation through courses in major for proposal/dissertation stage</td>
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<td>18.</td>
<td>Preparation through courses in minor/related area for proposal/dissertation stage</td>
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<td>19.</td>
<td>Preparation through courses in statistics and research for proposal/dissertation stage</td>
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<td>20.</td>
<td>University-supplied advising/counseling on dissertation</td>
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<td>21.</td>
<td>Support for dissertation efforts from spouse (if not applicable, instead of circling a number, check here: ___)</td>
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<td>22.</td>
<td>Support for dissertation efforts from family/significant other(s)</td>
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<td>23.</td>
<td>Job-related incentive/pressure to complete degree</td>
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<td>24.</td>
<td>Ability to work within University's scheduled deadlines</td>
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<td>25.</td>
<td>Other</td>
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</table>
APPENDIX B

COVER LETTER TO JURY MEMBER

March 25, 1985

Member of the Jury
Address
City, State

Dear Judge:

Thank you for your participation in establishing the validity of a questionnaire to be used as part of a doctoral dissertation at North Texas State University. The study concerns the attrition of doctoral students in education after successful completion of the qualifying examinations.

Please review the research questions and evaluate the items on the questionnaire. Consider the clarity and appropriateness of each item. On the enclosed rating sheet, please indicate whether,

a. an item is acceptable for use in the study;
b. an item is unacceptable for use in the study;
c. you are unable to determine the acceptability of an item.

Also, if you believe that a significant area has been overlooked, your suggestions as to additional items are appreciated. Space is provided on the rating sheet for additions.

After you have completed the evaluation of the questionnaire, please return it in the enclosed, return-addressed envelope. Your cooperation in this study is greatly appreciated.

Sincerely,

/s/Anne Grissom
Anne Grissom

Enclosures
APPENDIX C

RESEARCH QUESTIONS SENT TO JURY

To achieve the purposes of this study, the following research questions will be posed:

1. Is a candidate's sex a factor in completion of a doctorate?

2. Is a candidate's age at the completion of the qualifying examinations a factor in completion of a doctorate?

3. Is constancy in marital status of the candidate during the proposal/dissertation stage a factor in doctoral degree completion?

4. Is the level of the candidate's family income during the proposal/dissertation stage a factor in degree completion?

5. Is the type of employment of the candidate during the proposal/dissertation stage a factor in the completion of the degree?

6. Is constancy of employment for the candidate during the proposal/dissertation stage a factor in the completion of the doctoral degree?

7. Is the length of time between the attainment of the master's degree and completion of the doctoral qualifying examinations a factor in completion of the doctoral degree?

8. How do graduates and non-graduates rate the availability or presence of selected factors in the proposal/dissertation stage?
APPENDIX D

QUESTIONNAIRE RATING SHEET SENT TO JURY

Name ___________________________ Date __/__/__

Your help is needed in order to establish the content validity of a structured questionnaire to be sent to former doctoral students. Please use the Research Questions and the Questionnaire to assist you in determining whether an item is acceptable or unacceptable for this study. It would be helpful if you would include a comment on the back for any item that you rate unacceptable.

<table>
<thead>
<tr>
<th>Item</th>
<th>Acceptable</th>
<th>Unacceptable</th>
<th>Don't Know</th>
<th>Item</th>
<th>Acceptable</th>
<th>Unacceptable</th>
<th>Don't Know</th>
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</tbody>
</table>
Suggestions for additions: ____________________________________________

Please check as appropriate that you agree, disagree, or are undecided for each of the following statements. It would be helpful if you would include a comment on the back for any statement with which you disagree.

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>At least one item is present for each research question.</td>
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<td>____</td>
</tr>
<tr>
<td>B.</td>
<td>The language of each item marked acceptable is easily understood.</td>
<td>____</td>
<td>____</td>
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<tr>
<td>C.</td>
<td>The arrangement of the items on the questionnaire is acceptable.</td>
<td>____</td>
<td>____</td>
</tr>
<tr>
<td>D.</td>
<td>All respondents should be asked all items. (If you disagree, list on the back the items that should be asked and under what conditions.)</td>
<td>____</td>
<td>____</td>
</tr>
</tbody>
</table>
APPENDIX E

QUESTIONNAIRE

Part A

Directions: Please circle the number of the most appropriate answer. "Proposal/dissertation stage" is defined as the part of your doctoral program that followed successful completion of the qualifying examinations.

1. Sex
   1. Female
   2. Male

2. Age at completion of qualifying examinations
   1. 30 years or younger
   2. 31-35 years
   3. 36-40 years
   4. 41-45 years
   5. Over 45 years

3. Marital status
   1. Remained same during proposal/dissertation stage
   2. Changed during proposal/dissertation stage

4. Degree status
   1. Ph.D. or Ed.D. completed
   2. Degree not completed: temporarily delayed/in progress
   3. Degree not completed: undecided about completion
   4. Degree not completed: will not complete it

5. Average family income (annual) during proposal/dissertation stage
   1. Below $20,000
   2. $20,000-$29,999
   3. $30,000-$39,999
   4. Over $40,000
6. Your employment during proposal/dissertation stage (whether full-time or part-time)
   1. Educational institution position
   2. Education-related position in business/industry
   3. Non-education position
   4. Unemployed

7. Employment status
   1. Remained same during proposal/dissertation stage
   2. Changed during proposal/dissertation stage

8. How long after you finished your master's degree did you complete the doctoral qualifying examinations?
   1. 0-5 years
   2. 6-10 years
   3. 11-15 years
   4. 16-20 years
   5. 21-25 years
   6. Over 25 years

9. Did you complete a master's program that included a thesis?
   1. Yes
   2. No

10. When did you decide on your dissertation topic?
    1. Before the qualifying examinations
    2. After the qualifying examinations
    3. Have not decided on a dissertation topic

Part B

Directions: Please circle the most appropriate number to rate each factor below as to its availability or presence during the proposal/dissertation (post qualifying examinations) stage of your doctoral program.

<table>
<thead>
<tr>
<th>AVAILABILITY OR PRESENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTOR</td>
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<tr>
<td></td>
</tr>
<tr>
<td>11. Personal motivation (i.e., tenacity, perseverance)</td>
</tr>
<tr>
<td>FACTOR</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>12. Funds for conducting implementing, and reporting research</td>
</tr>
<tr>
<td>13. Time for conducting, implementing, and reporting research</td>
</tr>
<tr>
<td>14. Physical well being</td>
</tr>
<tr>
<td>15. Support of major professor</td>
</tr>
<tr>
<td>16. Support of committee</td>
</tr>
<tr>
<td>17. Support of peers</td>
</tr>
<tr>
<td>18. University assistance in selecting topic (faculty advice)</td>
</tr>
<tr>
<td>19. Preparation through courses in major for proposal/dissertation stage</td>
</tr>
<tr>
<td>20. Preparation through courses in minor/related area for proposal/dissertation stage</td>
</tr>
<tr>
<td>21. Preparation through courses in statistics and research for proposal/dissertation stage</td>
</tr>
<tr>
<td>22. Support for dissertation effort from the University (library, computer services)</td>
</tr>
<tr>
<td>23. Support for dissertation efforts from spouse (if not applicable, instead of circling a number, check here ___)</td>
</tr>
<tr>
<td>FACTOR</td>
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<tr>
<td>--------</td>
</tr>
<tr>
<td>24. Support for dissertation efforts from family and/or friends</td>
</tr>
<tr>
<td>25. Job-related incentive/ pressure to complete degree</td>
</tr>
<tr>
<td>26. Your ability to work within University's scheduled deadlines</td>
</tr>
<tr>
<td>27. Other:</td>
</tr>
</tbody>
</table>

Comments:
April 13, 1985

Dear Former/Current NTSU Student:

Not long ago you successfully completed your doctoral qualifying examinations. That step enabled you to formalize preparations for your dissertation proposal and your dissertation, a stage you may or may not have completed. Your help is now being solicited in a study of factors involved in the proposal/dissertation stage of a doctoral program.

Your completion and return of the enclosed questionnaire will be an important contribution to this study, which will be used to satisfy the dissertation requirement of my doctoral program at N.T.S.U. Data collected in this study will be evaluated as group statistics so the confidentiality of individual information will be maintained.

Thank you for helping to make this study successful by your complete and accurate response to this questionnaire. Please return the questionnaire by April 23, 1985, in the enclosed envelope.

Sincerely,

/s/Anne Grissom
Anne Grissom
Research Associate
APPENDIX G

FIRST FOLLOW-UP POSTCARD

April 26, 1985

Dear Current/Former Doctoral Student:

Approximately two weeks ago, you received in the mail a questionnaire on factors affecting NTSU doctoral candidates during the proposal/dissertation stage. Your responses will provide valuable data for my study.

If you have not already done so, will you please take a few minutes to complete the questionnaire and return it to me? Thanks for your help.

/s/ Anne Grissom
APPENDIX H

SECOND FOLLOW-UP LETTER

May 4, 1985

Dear Former/Current NTSU Doctoral Student:

I am writing to follow-up a letter and questionnaire mailed to you on April 13, 1985. Perhaps you did not receive them or you were delayed in filling out and returning the confidential questionnaire.

As a doctoral candidate in Higher Education at North Texas State University, I am collecting information on doctoral students in the College of Education who successfully completed written and oral qualifying examinations from 1978 through 1980. Because you are a member of that specialized population, I am requesting your participation in this study.

If you have not already done so, please complete the enclosed questionnaire and return it in the return-addressed, stamped envelope by Wednesday, May 15. Your assistance is vital to the success of this research.

Thank you,

/s/Anne Grissom
Anne Grissom
Research Associate
BIBLIOGRAPHY

Books


Sanford, Mark, Making It in Graduate School, Berkeley, Montaigne, Inc., 1976.


Articles


Jacks, Penelope, Daryl E. Chabin, Alan L. Porter, and Terry Connolly, "The ABCs of ABDs: A Study of Incomplete Doctorates," Improving College and University Teaching, XXXI (Spring, 1983), 74-81.


Reports


Unpublished Materials


Schultz, Marian Claire, "'ABD' Doctoral Students from Off-Campus Centers of the University of Southern California, unpublished doctoral dissertation, College of Education, University of Southern California, Los Angeles, California, 1983.

Swoboda, Marian J., "Factors Impeding the Completion of the Ph.D. Degree among Ph.D. Candidates: Focus on Sex Related Differences," Dissertation Abstracts, 40/3A (1978), 1309A.