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CAREER MOBILITY OPPORTUNITIES IN NURSING EDUCATION
IN OKLAHOMA: A COMPARISON OF PROFICIENCY IN BASIC
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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CAREER MOBILITY OPPORTUNITIES IN NURSING EDUCATION IN OKLAHOMA

A COMPARISON OF PROFICIENCY IN BASIC FUNDAMENTALS OF NURSING

BETWEEN PRACTICAL AND ASSOCIATE DEGREE PROGRAMS

A DISSERTATION

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PATRICIA MCMILLAN JAMISON

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CAREER MOBILITY OPPORTUNITIES IN NURSING EDUCATION IN OKLAHOMA
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BETWEEN PRACTICAL AND ASSOCIATE DEGREE PROGRAMS

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CAREER MOBILITY OPPORTUNITIES IN NURSING EDUCATION IN OKLAHOMA
A COMPARISON OF PROFICIENCY IN BASIC FUNDAMENTALS OF NURSING
BETWEEN PRACTICAL AND ASSOCIATE DEGREE PROGRAMS

CHAPTER I

INTRODUCTION

The Problem

This study was designed to investigate whether practical nursing programs in Oklahoma are preparing students with an adequate foundation for achieving advanced standing in associate degree nursing programs in Oklahoma. Lack of career mobility opportunities through education is thought to have a bearing on the manpower shortages now being experienced in the professional, technical and supportive levels of nursing practice.

The present problems in the delivery of health-care are already well known to professional health personnel and others interested in the delivery of such care. The crisis is known, also to another large portion of our society. These are the consumers who daily experience frustration and tribulation while seeking entry into the traditional health-care system. Such problems are not unique to the poor and disadvantaged of our society, for the more sophisticated health-care consumer experiences them in much the same manner. While the demand for health-care as a basic

human right is probably the major factor in creating the crisis (Somers and Somers, 1961), authoritative data support the notion of a health manpower shortage contributing substantially to the seriousness of the problem (Mason, 1972; Pennel, 1970; Reinertsen, 1972; Waddle, 1965 and 1973).

A previous study by this investigator (Jamison, 1971) indicates an important factor in the health manpower shortage to be the inability of the traditional utilization system to attract and retain adequate numbers of qualified health personnel. It further suggests that upward mobility programs would attract and retain greater numbers of personnel interested in providing the health-care services. Such programs give employees and students an opportunity to qualify for the areas of shortage of skilled personnel. Since these positions are usually higher in terms of responsibility and income, the employee is more likely to remain stable, thus reducing turnover and contributing to the higher quality of care delivered. The result should be seen in better utilization of manpower and a reduction in the shortage of available qualified personnel to deliver health care.¹

Need for the Study

The question of why the members of the richest and most technologically advanced nation must be confronted with these inadequacies is generating what may be a plethora of approaches toward solution (AJN,

¹While outside the scope of this study, the belief in the dignity of work and the right of an individual to seek fulfillment are basic to the philosophy of upward mobility programs. Although all human beings are not created equally able, they are all created equally human. Education could serve as the means for offering equal opportunity for individual self-fulfillment by planning programs which meet the needs of those created less equal. Upward mobility programs are one means of recognizing inequalities of opportunity.

1971; McClure, 1972; McNerney, 1972; Riddick, 1972; Robbins, 1972; Stevenson, 1971). While the crisis is of sufficient magnitude to warrant multiple approaches, there appears to be ample evidence that career mobility opportunities in nursing education is an area worthy of investigation on its own merit.

The rationale for upward mobility as a means of career development¹ is simple: No individual should be required to repeat work already mastered (Kurland, 1966). Such repetition appears glaringly wasteful in view of the problems in the delivery of health-care which are due partly to the shortage of health manpower.

An indepth investigation of career development in nursing education and a look at programs presently in operation in Oklahoma (Ward and Jamison, 1973) reveals that many administrators are looking at the problem but that few have actually developed working programs. Very few allow for accelerated progression with lessening of the length of time required for completion. For the most part, those responsible for program development in nursing education in Oklahoma did express an interest in smoothing the way for such a progression. Some program directors have initiated plans for mobility programs. The most acceptable approach was through the core curriculum and credit by examination.² Thus it would

¹Upward mobility as applied to career development in the context of this study implies a series of events in the progress of an individual toward his or her chosen job or profession (here, specifically from the practical to the associate degree level of nursing practice). The progress can be through a series of added skills, knowledges, attitudes and responsibilities requiring additional education, or upward mobility could involve a lateral movement from a related service with additional skills required. In any context, it implies that service--not level--imparts the dignity.

²The core curriculum and credit by examination concepts are discussed in detail in the literature review.

appear that career mobility opportunities through nursing education in Oklahoma are a distinct possibility. The findings of this investigation may lend support to such opportunities becoming a reality--or will, at least, provide a point of departure for the reorganization and modification of programs toward that goal.

Definition of Terms

Complete agreement in the nursing literature as to terminology relevant to levels of practice and types of programs was not found. Therefore, several definitions of terms basic to a discussion of the literature will be stated at this point. Other definitions will be presented as applicable to the study in Chapter II. For the purpose of this investigation, the following definitions will be used:

Practical Nursing Program -- A nursing education program, usually at the post-secondary level, preparing a nurse to perform, under the direction of a qualified autonomous health professional, nursing functions commensurate with his or her demonstrated competencies and education (National League of Nursing¹ (NLN) Statement on the Functions and Qualifications of the Licensed Practical Nurse). Restated in more precise terms: The program prepares a nurse, under the supervision of a registered nurse or physician, to give direct nursing care to patients in uncomplicated situations.

Associate Degree Nursing Program -- A nursing education program, usually in a two-year college, preparing a nurse to practice at the technical level. Matheney (1967) defines technical nursing practice as "the

¹NLN is the official accrediting agency of the American Nurses Association.

direct nursing care of patients with evident health problems and common recurring nursing problems in the areas of physical comfort and safety, physiological malfunction, psychological and social problems, and rehabilitation problems."

Baccalaureate Degree Nursing Program -- A nursing education program, usually in a four-year college, preparing a nurse to practice as a qualified autonomous health professional in nursing practice with the unique functions of (1) diagnosing the nursing problem and (2) deciding upon a course of nursing action to be followed for solution of the problem (Smith, 1968).

Licensed Practical Nurse -- A graduate of an approved practical nurse program who has successfully written an examination administered by an official state board of nursing and is eligible to practice (NLN).

Registered Nurse -- A graduate of an approved school of nursing (technical or professional)¹ who has successfully written an examination administered by an official state board of nursing for the purpose of registration and is eligible for licensure to practice (NLN).

Review of the Literature

Historical Background

In the historical structuring of the occupation of nursing, the stratifications that have developed² have come to be pretty much closed-end

¹The appropriateness of the terms, technical and professional, as applied to nursing levels of programs (sometimes designated as types) is beyond the scope of this study. The term, professional, as used here, will indicate the registered nurse.

²Ruth Matheney names and describes five levels: (1) the unskilled labor group with on-the-job preparation, if any; (2) the vocational level; (3) the technical level; (4) the professional practitioner; and (5) the professional specialist. (Matheney, 1963).

categories (Ramphal, 1968). This is especially so at the lower levels of practice. Some account may be made for this state of affairs by a brief look at the development of nursing education (Ginsberg, 1970; Jamison, 1971; Katzell, 1971).

Two different levels of nursing developed quite independently of each other in the United States. Major emphasis is usually placed upon the emergence of the training system developed and controlled by hospitals which produced the graduate nurse. Little emphasis is placed on the lesser known training system developed by community agencies such as the YWCA and the Metropolitan Life Insurance Co. This system prepared a "practically" trained nurse to function in the home to care for the chronically ill, new mothers, babies, and small children. There was little communication between these two differently prepared workers in nursing. In fact, history will support the idea that the graduate nurses trained in the hospital system generally felt considerable threat from the community agency trained practical nurses.

That workers other than the registered nurse, could function in the hospital setting was proven by lessened enrollment in/or the closing of the nursing schools brought about by economic necessity during the depression years of the 1930's. The on-the-job trained aide came upon the scene to provide patient care. However, it was the drain of physicians and registered nurses to meet the needs of the military during World War II that caused the rapid realignment of personnel for caring for the sick within the hospital.¹ The job of nurse aide became

¹It was at this time that federal assistance to the education of nurses was introduced through the Cadet Nurse Corps.

an indispensable feature of the hospital system for the delivery of nursing care. Thus, the "practically trained" nurse, who had functioned primarily outside the hospital system, began to move into the hospital.

After World War II educational programs began to receive financial support from the U.S. Office of Education. The professional nursing organization, The American Nurses Association, began to provide support for licensure of educational programs for the practically trained nurse, and increasing pressure for mandatory licensure was almost universal by the early 1950's.

Rapid technological changes in the late 1950's made it necessary to educate larger numbers and more kinds of skilled technicians to serve as specialized assistants to professionals in the health field. This caused an explosive growth in the number and variety of programs to prepare technicians in public junior and community colleges. Legislation, including the 1968 Vocational Education Amendments and the recent nursing education legislation, provided the impetus for a proliferation of associate degree nursing programs across the nation.

Coupling the advent of federal medical aid to the elderly (Medicare) and the resultant demand for registered nurses with the New Careers Movement (Brody, 1969; Kent, n.d.; Lyton, 1967), the pressure for career development opportunities is understandable. The emerging role of the American female,¹ and the American Nurses Association's Position Statement on Nursing Education in 1965 seems to have intensified the growing pressure to provide for career mobility in nursing education.

¹A selected list of publications dealing with the socialization of the female for adult roles is presented in A Study of Selected Variables in Relation to Commitment to Nursing for the Single Student Nurse, page 6. See: Millsap, 1967.

With all of these pressures why have nursing educators not already worked out acceptable provisions for advancement?

Current nursing literature abounds with information supporting the concept of career development through upward mobility as one means of dealing with the health manpower problem in nursing. Literally dozens of articles (Allyn, 1969; Boyle, 1966; Boehret, 1966; Cather, 1973; Harvey, 1970; Jarratt, n.d.; Kahler, 1967; Kingten, 1970; Walker, 1968; Wood, n.d.; among others) providing information relating to career mobility programs propound credit by examination, advanced standing, challenge examinations, open-door admissions policy, a common core of courses, equivalency, continuous educational program with options, external degree, and similar approaches as means of increasing the numbers of/and enhancing the quality of services delivered by health personnel. Such wide-spread acceptance of the concept and the general agreement that one should receive credit for knowledge already acquired would appear to indicate that avenues to advancement are already established. Investigation into the availability of such programs reveals that such is not the case.¹ A significant gap continues to exist between the acceptance of the concept of mobility and that of actual implementation of workable programs. Some of the issues involved in implementation will help explain these seemingly contradictory positions.

Some of the Issues

All educators face some of the issues that face nursing educators today simply because education is an ever-changing process, a continuous

¹For a review of these programs see pages 23-25, infra.

interaction between contending points of view. It seems, however, that the problems of mobility in nursing occupations are particularly difficult to solve due to internal as well as external problems. A study by Roethlisberger and Dickson (1970) partially explains this phenomenon.

They found in a series of studies that:

Any person who has achieved a certain rank in a prestige scale regards anything real or imaginary which tends to alter his status as something unfair or unjust. Immediately this disruption will be expressed in sentiments of resistance to the real or imagined alternations in social equilibrium.

Similar sentiments were evidenced in the literature by Skaggs (1968) and Dundas (1968) who discussed the hostility toward anyone not engaged in nursing education who might offer advice.

Yet another problem, that of negative reception to the concept of mobility in general, may be seen in Shetland's (1970) statement that such a concept (career ladder) "promotes satisfaction . . . as a function of moving out and up rather than developing in any one position." While she does not endorse the concept of a career ladder as a progression from vocational to technical to professional nursing, she does believe that a more flexible open curriculum can be developed. This would permit people with a variety of work and academic experience to complete educational programs as economically as possible.

A further difficulty rests in the sharp delineation of levels of nursing, i.e., the technical and professional levels, with additional delineations by type of program. Inez Hinsvark, in a speech before the Council of State Boards of Nursing in 1968 states:

Technical nursing practice is differentiated from professional by its highly complex technical skills and knowledge, and precision in understanding and utilizing the ever-expanding body of science, rather than the evaluative, theoretical approach

Maryland; McMeneny, Michigan; Dradge, California; Williams, Colorado; and Chan, Illinois). These are but a few of the many programs having established upward mobility pathways for nursing students.

Two distinct approaches have evolved in attempting to solve the problems of implementation. For the purpose of this review both have been subsumed under the concept of the "open curriculum." The central role of the open curriculum concept in furthering upward career mobility warrants further examination. A summary of the concept and a brief explanation of the two approaches, followed by examples of each in the literature, is presented below.

The Open Curriculum

Recognizing the inequities and inefficiencies of a nursing education system locked into a structure of detours, roadblocks and dead-ends, the NLN's Board of Directors adopted a statement favoring the open curriculum in February of 1972. This unprecedented step favoring "an idea for facilitating vertical mobility by granting advanced standing for previous education and experience"¹ placed an official nursing organization in the ranks of the open curriculum proponents.²

A year previous at their 1969 meeting in Detroit, the National Student Nurses Association, recognizing the important role of continuing education to furthering career development, had adopted a similar resolution (Katzell, 1970):

¹It is also a movement which permits other health workers to enter a nursing education program with advanced standing after an evaluation of their previous education or experience (Johnson, 1971).

²The National League for Nursing acts as the official accrediting agency of the American Nursing Association.

Development of the core curriculum is one means of accomplishing this recommendation.

The Core Curriculum: Concept

The philosophy of the core curriculum presumes that there is a commonality of information and skills relevant to all programs within Allied Health Occupations. As educational institutions developed multiple offerings in health occupations, the desirability of combining common aspects of curricula for more effective and efficient course offerings became obvious (Turner, 1968). To implement the concept, commonalities not only across several occupations but also between levels within a field became identifiable for core courses. This development of the core concept is competency based, and ideally, follows a systems approach. Generally it would include (1) a complete analysis of each occupation, (2) the writing of behavioral objectives which the student must achieve, (3) the identification of commonalities, both horizontally and vertically, and (4) the establishment of modular units of educational experiences. Some would be common with other programs; some would not (Holloway, 1969).

Such an approach is not universally accepted. Lack of support for the concept may be summarized in Moore's (1972) statement:

The fact that a number of highly visible tasks are performed by untrained as well as highly-educated nurses establishes the fact that these tasks are held in common, not that they are the pith, heart or core of nursing.

The proponents of the concept maintain that the core curriculum plans enable use of centrally located school systems for teaching content of both general education and technical courses (Fullerton, 1966), prevent duplication in curricula (Dasco and Konheim, 1968), insure a better

education for all (Holloway, 1969), enable health personnel to bolster their position to demand higher level tasks and better wages (Bullough and Bullough, 1971), and are more efficient in terms of faculty, finance, and facility resources as well as manpower development (The Kellogg Foundation Study, 1972; see Klopfenstein, 1973).

Core Curriculum: Implementation

Perhaps the most comprehensive core curriculum program in existence is the University of California Los Angeles Allied Health Professions Project (UCLA, 1970). Certainly, it was the most expensive to be attempted. This multi-million dollar project was funded to create curriculum and instructional materials for those allied health functions considered appropriately taught through the associate degree level. Concurrently, it was to develop in-service and pre-service training program materials for health-related occupations in which on-the-job training plays a primary role. The staff, with the guidance and advice of a National Technical Advisory Council and other expert consultants, set an ambitious goal of (1) identifying and verifying all possible tasks, (2) determining the processes involved in and the knowledge and skills required for satisfactory performance, and (3) developing behavioral objectives (performance goals) for each task performed in these health occupations. Then a curriculum, including consideration of the career ladder concept, continuing education and attainment of degree objectives and transferability of credits earned, was to be developed. Following the successful achievement of this goal, the committee developed (1) innovative instructional, (2) teacher education and testing, and (3) student evaluation materials; all stated in terms of behavior objectives. This

classic study has since been published (Brown, 1972 and 1973). The guides for planning and implementing core curriculum programs are being used internationally as well as across this nation.

Wood (1970) and Goldsmith, et al (1970) discuss in detail the nursing program in the UCLA Allied Health Professions Project pointing out the value of such an approach in building career opportunities.

A second, less structured, core curriculum project is described by Drage (1971). In this project, every L.P.N. admitted to the associate degree program was asked to identify the point at which he or she started to learn new things. During this period of the study, two instructors, one from the P.N. program and one from the A.D.N. program, were rotated. Based on these rather limited observations, the faculty restructured the associate degree nursing program into a pattern of first and second track course work. There was agreement that the L.P.N.s should be required to attend all lectures in the first nursing courses but that most of the laboratory aspects could be eliminated. A pilot project utilizing this core approach scheduled for implementation in September 1971 was not found to be reported in the literature.

Dasco and Konheim (1968) utilized a common core of courses in basic public and community health in their special mission of educating professionals to work with physicians as members of a health team. Kintgen (1970) reports that in two programs in Iowa P.N. and A.D.N. students were together for nursing courses during the first three quarters of their program. Similarly, a Kellogg Foundation funded program at Kellogg Community College (Klopfenstein, 1973) utilizes the core approach to allow students to opt for the practical or associate degree

level of nursing at the end of the first sixteen weeks. An analogous core curriculum program on the diploma/bachelor's level is reported by Ingles and Montag (1971) in Cali, Columbia. This program, also funded by the Kellogg Foundation, allows students to stop at the end of six semesters and receive a diploma or to continue for two more semesters and receive a B.S.N.

Other programs utilizing commonalities in the core curriculum approach to career mobility have been reported by Fullerton at Washington State (1966), Wallenstein, Arizona State University (1968), Turner (1968), Illinois, and Gebhardt (1973) in Wisconsin.

The foregoing review has outlined several core curriculum projects and programs aimed at identifying horizontal and vertical commonalities in the development and implementation of the core concept. These examples document that the core approach has been developed, field tested and utilized in a wide variety of programs and settings for facilitating career development through upward mobility in health occupations. Therefore, it seems reasonable to assume that there is a core of content related to health science, including nursing, which may serve as a base for structuring career development opportunities through education.

The next section examines the second concept embodied in the open curriculum, that of mastery. The credit by examination approach is based on the concept of recognizing mastered knowledge and skills. This approach and programs utilizing it are presented below.

Credit by Examination: Concept

The idea of granting credit for previous knowledge through the use of an examination is not new. Katzell (1971) indicates that credit

by examination in nursing goes back some twenty-plus years. In earlier times, registered nurses seeking admission to baccalaureate programs were required to take an examination. This exam was, at one time, called the Basic Nursing Information and Judgement Test, later the Graduate Nurse Qualifying Exam, then the Graduate Nurse Exam (NLN, 1969). If the applicant passed, blanket credit, either forty-five or sixty hours, was granted toward the baccalaureate degree. Such a blanket credit concept has been severely criticized in the literature because it overlooked specific strengths and weaknesses in the student's background. Generally, it was administered for the purpose of seeing if the student qualified for "something": placement, course credit, admission or different things by different colleges or universities. In all cases, it was used for graduate nurses seeking advanced education, and generally had little relationship to requirements for repetition of work or gaps in knowledge and skills necessary for the satisfactory performance of nursing care. Kramer (1964), Kurland (1966), Hangartner (1968), and Kramer (1970) indicate the best approach as being to determine what the graduate has achieved in terms of knowledges, skills, attitudes, and other competencies, and then to find out what the advanced standing applicant still needs. Students should not be required to repeat work which they have already mastered.

Katzell (1970) points out that the original purpose of the NLN achievement tests used with the Cadet Corps students was to measure their abilities prior to assignment to clinical experiences, thus avoiding wasting their time in courses offering content they already knew. Still later came the idea that results of examinations could be used by colleges to determine advanced placement or academic credit which should be awarded

for previous learning and experience (Kadish, 1968).

Further justification for using examinations to determine credit is seen in this statement (N.Y. State Education Dept. Brochure, n.d.):

Learning at a level comparable to college study takes place in a wide variety of situations. But very often the full benefit of such learning cannot be realized for personal and professional advantage unless official college credit is received.

Types of Exams

The literature discusses three general types of achievement tests in the field of nursing: Proficiency Exams, Equivalency Exams, and Challenge Exams:

Proficiency exams were designed for measuring an individual's competency to perform certain jobs at certain levels, a competency made up of knowledge and skills. Equivalency exams were utilized to equate non-formal learning outside of a particular program with learning achieved within that program. While, challenge exams were essentially end-of-course tests intended to measure individual achievement in the particular subjects which make up the curriculum. Challenge exams were developed to measure mastery of information, ideas, and skills that would be expected of a student who had successfully completed a course in a particular subject. (Katzell, 1971).

Challenge exams often required that the student complete all the prerequisite courses to the course they were challenging (Malkin, 1966; Burnside, 1969).

While all three types of tests are designed to measure student achievement, they differ primarily by origin. The proficiency examinations are usually standardized tests issued by organizations such as the National League for Nursing, the New York State Education Department, the Psychological Corporation, Nursing Research Associates, and others (Buros, 1972). In contrast, challenge and equivalency examinations are ordinarily designed by institutions specifically to test their own level

objectives. Such specially developed examinations may be standardized through usage by the institution.

Major Obstacles to Usage

Support for credit by examination is expressed in articles by Grant (1966), Burnside (1969), Schmidt (1969), Kurland (1966), Kramer (1964), Dasco and Konheim (1968), and Ingles and Montag (1971). In addition, the New York State Nurses Association (1967) in their Blueprint for the Education of Nurses in New York State recommends:

That opportunities be provided for diploma, associate degree and practical nursing graduates to obtain advanced placement in degree programs through proficiency exams (sic) administered by the State Department of Education. (Brochure)

In practice, however, the recognition by advanced standing for previous experience is not very high. While credit by examination seems to be a very feasible solution, it is by no means problem free. The major obstacles include (1) the determination of the knowledges and skills needed for graduation, (2) the assessment of what the advanced standing applicant brings with him and/or her, and (3) the planning of courses and experiences to meet the needs of each student (Kramer, 1970). There also appears to be some reluctance or skepticism about using nationally standardized tests on the part of many schools (Johnson, 1971)¹ although such test instruments are available and can probably be used more effectively than the teacher-made placement tests. The primary problem appears to be a lack of consensus as to what nursing is and which behaviors should be demonstrated as measures of competency. Some explanation of the low frequency use of such tests may be explained by

¹See NLN Program Surveys, pp. 23, infra.

the fact that specific standards of performance often vary from program to program. The selection or design of the appropriate examination to be used by a given institution of necessity depends on the ultimate objectives of the program, and there does seem to be widespread agreement that granting of credit should be the prerogative of the individual college or university (Schmidt, 1969; Burnside, 1969; Kurland, 1966; Kramer, 1964; and Gilpatrick, 1968).

According to Malkin (1966), the major challenges to faculties who develop their own equivalency examinations are:

1. Development of clear, concise and operationally stated objectives for courses in nursing, and
2. Development of adequate instruments for appraisal. (p. 36).

The Evaluation Service of the National League of Nursing provides the following guidelines in setting standards:

Each school's faculty must judge what level of performance will be required for course exemption, credit or advanced placement. Such standards might be established in light of the performance of students already in the program who have taken the tests selected for use, or in terms of national norms. Each program must decide how much credit, if any, will be given for various levels of performance. Students might be allowed to challenge only in certain areas or only in a certain number of subjects. (Leaflet)

Katzell (1971, p. 8) cautions that whatever the decision, the best tools available should be used. She offers six criteria for consideration when selecting an evaluation instrument for advanced standing placement:

1. Does the test reflect the general objectives of the course offerings in this area, or of some phase(s) of the curriculum?
2. Does the test reflect the major points of emphasis in the course, or in the relevant phase(s) of the curriculum?

3. Does the test sample important aspects of the subject matter field?
4. Is the test well constructed?
5. How much does it cost?
6. Is it psychometrically adequate?

Further, she states that faculty members are likely to want to know how the challenging student compares with other students in their program as far as achievement is concerned.

Katzell further indicated that the development of packets of questions which could be purchased by schools of nursing for use in developing their own tests was being considered by the League. At the time of this study, no such packets have been made available.

Credit by Examination: Implementation

Advanced placement through achievement testing has been implemented in a number of programs in the United States. A pamphlet published by the National League of Nursing (1970), L.P.N. to R.N. the Associate Degree Way, indicates that approximately one-third of the associate degree nursing programs in the United States granted advanced standing based on challenge exam results. Programs in thirty-six states which offered qualified applicants advanced standing on this basis are cited. However, in most cases, challenge exams did not result in a shorter program. In many educational institutions, the requirement for a degree is the number of credits earned at the particular college. Therefore, the student is often required to take other courses to arrive at the specified number of credits.

This is not always the case, however. An example of a

challenging exam policy which enables the challenging registered nurse student to earn up to forty-three units in nursing is Chico State College in California (Hansen, 1965). Kramer (1970) reports on a program at the University of California School of Nursing in San Francisco in which up to thirty hours credit can be earned by successfully passing a qualifying exam. On the basis of the exam, self-assessment, and past work experience, a major model is planned to provide learning in the student's area of greatest deficiency, and a minor model is designed to provide experiences in the second greatest area of deficiency. On successful completion of the program, the student may take the comprehensive challenging exam and earn up to thirty hours credit.

New York State colleges, many if not all, are offering proficiency exams designed primarily for the registered nurse wishing to enter the baccalaureate nursing program with advanced standing. A College Proficiency Exam in Fundamentals of Nursing, primarily intended for the licensed practical nurse desiring to enter the associate degree and diploma programs was completed in 1969 (Schmidt and Lyons, 1969) and is available for a fee for services.

Other colleges implementing policies for granting advanced credit by examination are Ohio's Cuyahoga Community College (Burnside, 1969), Russell Sage College in Troy, New York (Koffman and Andruski, 1971), California State College (Malkin, 1966), Crozier Foundation College of Nursing in Chester, Pennsylvania, and Long Beach City College, California (Drage, 1971). Cuyahoga College utilizes mid-term and final examinations in Nursing 101, a five-hour Fundamentals of Nursing course. The Long Beach City College program earlier described by Drage combines the

core curriculum plan with a credit by examination approach. Licensed vocational nurses who graduated from accredited vocational programs may apply for credit by examination to be accepted with advanced standing in the associate degree program. The Russell Sage College and California State College programs for advanced placement indicate their examinations are designed for registered nurses entering a baccalaureate program.

The core curriculum plan using the credit by examination approach has been a workable concept for career development programs as demonstrated by the previous review of programs successfully using this approach. A look at some current surveys offers insight into the status of the open curriculum at the present time.

Surveys

NLN Program Survey

In October of 1970, the NLN, in an effort to determine just how far schools of nursing had moved beyond acceptance of the concept of the open curriculum to actual implementation and action, mailed a short questionnaire to all practical and registered nursing programs in the fifty jurisdictions of the United States, including American Samoa, the Canal Zone, District of Columbia, Guam, Puerto Rico, and the Virgin Islands (Johnson, 1971). The major questions raised were: (1) Are applicants with previous education or experience in the health field admitted to the program?, (2) Would credit or advanced standing be given to various categories of applicants with previous education or experience?, (3) What methods are being used to give credit or advanced standing?, and (4) Is the time required of the student to complete the program thereby reduced?

Of the total 1, 413 registered nursing programs queried, 88 percent responded, and of the 1, 310 practical nursing programs surveyed 84 percent responded. Among all types of schools, over 90 percent answered affirmatively to the question about admitting of persons with relevant experience and education. However, a significant gap continues to exist between readiness to admit and actual admission of students. The survey further indicates that registered nurses or unlicensed persons with some education in registered nursing programs had the most favorable chances, with the probability of credit or advanced standing about half of the time, while the practical nurse could at best expect credit or advanced standing one-third of the time in associate degree programs. Allied health personnel and practical nurses are shown at much greater disadvantage than registered nurses in obtaining credit from registered nursing schools.

The range reporting a time saving is from sixty-six percent in associate degree programs to ninety percent in baccalaureate programs. (This is based on schools which report one or more credit granting methods. Seven percent of the schools did not respond to this question.) About one-half of the baccalaureate and about one-fifth of the practical nursing programs did claim a reduction in the time required to complete the program.

The most generally accepted method of granting credit in the baccalaureate programs is by examination in selected nursing majors. The diploma programs more often granted credit without formal examination. Twenty-three percent of the diploma and twenty-seven percent of the associate degree programs did not report using any method for granting

advanced standing to students.

Schools of practical nursing are, without exception, lower than registered nursing schools in using any of the methods. Johnson explains this by stating that "the length of the program is itself a limiting factor" (1971).

Student Nurse Surveys

The state licensure laws provide for facilitating national manpower surveys in nursing. Marshall and Moses (1971) report that the results of the 1967 national survey of licensed practical nurses holding licenses to practice indicated 79 percent were female, 59 percent were married, 21 percent were widowed/separated or divorced, and 14 percent were single. The median age for licensed practical nurses was 44.1 years. Oklahoma statistics from this same survey indicated 65.2 percent were married, 24.6 percent were widowed/separated, or divorced, and 8 percent were single. The median age of licensed practical nurses in Oklahoma was 47.6 years. Nationwide 74 percent, and in Oklahoma 70.9 percent, were employed in nursing. These are potential advanced standing students.

The Nurse Career Pattern Study (NLN, 1968) reveals biographical data reported by entering students in the Fall of 1965 on 5,527 students who entered 118 associate degree programs, 5,051 students who entered baccalaureate programs, and 5,719 who entered 117 diploma programs. These data included marital status, family situation, age, ethnic origin, religion, and place of birth. Only age was significantly different. The sample selection method for this study was not defined.

National survey information on associate degree programs was also reported by Lande (1967). The sample included the national population of

all associate degree programs preparing for registered nursing licensure in state-approved schools of nursing in the United States, its territories and possessions at that time. Ninety-three percent of those contacted responded. The student characteristics reported were: 3.5 percent male, 96.5 percent female, 70 percent single, 27 percent married, 3 percent widowed or divorced, with 46 percent less than 20 years of age, 28 percent in the 20-24 year age bracket, and 26 percent in the 25 or older age category.

Studies

In a further attempt to understand more fully the relationship of biographical variables to success in nursing programs, several studies were reviewed (Voss, 1963; NLN, 1968; Millsap, 1967). These researchers pointed out that biographical variables, generally speaking, are not significantly related to success by type of program. These data include such variables as marital status, family situation, age, sex, ethnicity, religion, and place of birth. Major differences characterizing programs centered on their setting, control, financing, and scope of offerings.

Comparative Studies

In an effort to define differences among graduates of baccalaureate, associate degree, and diploma nursing programs, Richards (1972) administered an intelligence test, a personality test, and a professionalization scale to graduates of thirteen schools of nursing in the western United States. No statistically significant differences were found at the .05 level in the three groups in leadership potential, responsibility, intelligence, emotional stability or socio-ability. The baccalaureate

students scored higher on tests designed to measure professional ideals.

Cross and Brown (1967) using the Edwards Personal Preference Survey and a Survey of Interpersonal Values explored the differences in psychological needs and personality traits between registered nurses and licensed practical nurses. The authors felt such differences offered interesting clues as to work experiences required by each for job satisfaction. However, non-random sample selection of 25 registered nurses and 25 licensed practical nurses from an acute short-term general hospital in Florida severely limits the generalization of their findings.

A descriptive and correlational study by Carlson (1967) of students admitted to the first four classes in the two-year registered nursing program at San Bernadino Valley College revealed personal data, high school grades (except science) and quantitative ability appeared unrelated to success in the program. Analysis of regression of four variables (SCAT-verbal, pre-nursing grades, age, and high school chemistry) accounted for only 35 percent of the variance on state board scores. Older people were found to earn significantly higher scores on state board examinations. Again, the generalizations of these findings are limited due to the isolated population studies.

DeChow, et al (1968) compared characteristics of diploma and associate programs and found a number of commonalities: (1) admission criteria, (2) length of programs, (3) qualified faculty to teach the body of theoretical knowledge and guide students in the application of knowledge and development of skills, (4) the length of programs, and (5) concurrent offering of theory and clinical practice. Major differences centered on their setting, control, financing, and scope of course

offerings. The two programs move closer together in methodology as the diploma programs achieve almost complete autonomy within the hospital.

In comparing associate degree, diploma, and baccalaureate programs, these authors found significant differences to be: (1) the length of the program, (2) the number of units planned in the applied sciences upon which the nursing theory and nursing practice is based, and (3) the hours of clinical practice. These are not universally accepted differences.

The last two sections of this review were included to provide an indication of the types of research presently being conducted in the field of nursing education. While these studies generally date back five years or more, they do give some indication of the characteristics of practical and registered nursing students, program characteristics, and the rather limited volume of research being conducted in nursing education. The literature search revealed only one study of a similar nature to this study (Mesa College, 1970). While the purpose of the research project was to develop, use, and evaluate a series of examinations the process did involve comparisons of groups of nursing students by levels (types) of programs. The similarity and its relationship to this research are identified below.

The Mesa College Study¹

The specific purpose of the Mesa College Study was to develop a series of proficiency examinations covering theory and clinical content of selected courses required of the associate degree nursing program.

The problem was to determine whether or not it was necessary

¹A mimeographed report of this project was furnished to this investigator by Mrs. Eileen Williams, Head, Department of Nursing, Mesa College, Grand Junction, Colorado.

for the graduates of practical nursing programs or persons who attended diploma programs to repeat content they have already mastered in order to receive college credit toward the associate degree, or can their performance in these courses be adequately measured by means of proficiency examinations?

To initiate the study a course content questionnaire was sent to schools of nursing for practical nurses, associate degree nurses, and diploma nurses in the State of Colorado to determine content similarity or difference. On finding the course content similar, the research team¹ proceeded with the development of proficiency examinations for the basic fundamentals of nursing course, N-11.

An eight step procedure was followed: (1) a grid based on course content was constructed, (2) a video-tape was prepared and filmed, (3) an examination consisting of 120 paper and pencil and 40 video-tape questions was prepared, (4) the video-tape and all examination questions were reviewed by each faculty member in the Division for content validity, (5) revisions were made on the basis of faculty suggestions, (6) arrangements were made for testing the test items with students in other Colorado associate degree nursing programs, (7) the test items were subjected to item analysis, using the upper and lower 27 percent of the scores and thus obtained a 15 percent discrimination level, and (8) a final draft of the test was prepared containing 80 paper and pencil items and 20 video-tape items.

This final draft of the test was then given to (1) 22 Mesa

¹The project director was Ms. Louise Moser. Other team members were Mrs. Frances Lewis, Ms. Elsie Simms and Miss Mary Ann Bruegel (now Mrs. Richards).

College associate degree freshmen students, (2) 22 licensed practical nurses, (3) 22 waived practical nurses, and (4) 22 freshmen students in a diploma nursing course. The test results were then processed through an analysis of 16 comparisons. It was concluded that there is no significant difference in the four groups on either the paper and pencil test which represents a test of theoretical knowledge, nor on the video-tape test which represents a test of clinical ability, at the Fundamentals of Nursing I (N-11) as taught at Mesa College. Further, it was concluded that a proficiency test can be devised to relieve the necessity of repeating a course which teaches knowledge already acquired in different learning experiences.

This process was carried out for two additional courses, Nursing-22 (Nursing of Adults) and Nursing-33 (Maternity and Infant Nursing). The conclusions reached for Nursing-22 are (1) that there is no significant difference between the four groups on the video-tape test which represents clinical ability, and (2) that there is a significant difference in theoretical knowledge, with Mesa College A.D. nursing students being significantly higher at the 1 percent level than the practical nurses, diploma students, and waived licensed practical nurses taking the test. The analysis for Nursing-33 was not reported here, however, the completed and tested examinations are being used with Mesa College students who wish to receive credit for Nursing-11, Nursing-22, and Nursing-33.

Summary Statement

The very nature of nursing dictates that nursing educators be concerned with the provision of qualified personnel to provide services

to all who are in need of such care. To successfully discharge this responsibility, provision must be made for the development of efficient and effective programs to increase the numbers and enhance the quality of nursing personnel. One means of doing this would be the provision of career mobility opportunities through nursing education in Oklahoma. It seems appropriate that such an approach is feasible, therefore, this study was designed to test variables thought to have a bearing on career mobility programs.

The Hypotheses

The hypotheses of the research are:

1. There is no significant difference in mean achievement in the basic fundamentals between practical nursing and associate degree nursing programs.
2. There is no significant difference in mean achievement of students of both nursing levels between the rural programs and the urban programs.
3. There is no significant difference in the mean achievement of students among the eighteen practical nursing programs.
4. There is no significant difference in the mean achievement of students among the eight associate degree nursing programs.

CHAPTER II

THE METHOD

The decision to make a comparative survey of proficiency in basic fundamentals of nursing between on-going practical and associate degree programs in Oklahoma was based on (1) the findings of the investigator's previous study emphasizing career mobility opportunities, (2) on the results of a curriculum revision project utilizing the investigator's experience in health occupations education, and (3) on an extensive review of the literature related to career mobility.¹

The population of interest for the study was all of the nursing programs in Oklahoma having just completed the basic fundamentals of nursing course. Since the scope of this study did not include the development of a measuring tool, it was necessary to select and obtain an adequate test instrument prior to finalizing the sampling procedure. Therefore, a discussion of the test instrument selection process and the presentation of the data-gathering instruments precedes the description of the sample.

¹What is referred to here as a comparative survey (Fox, 1969) is sometimes referred to as quasi-experimental research (Campbell, 1963) or naturalistic research (McCandless, 1967). It is research utilizing the natural settings, already established and operating, to which the researcher adds data collection in order to reach some conclusion about relative effectiveness.

Panel of Experts

As an important long range goal of this investigation involves the implementation of the findings, the method was defined in consultation with experts in education and nursing. A committee of educators interested in career mobility opportunities for nurses in Oklahoma was assembled early in 1972.¹ This committee was formed to identify and evaluate methods and means useful in planning and implementing career mobility programs in nursing and health-related occupations in Oklahoma. The members were invited to serve in a consulting role to this investigation. Several agreed to do so. Other program specialists expressed an interest and were invited to participate. This group of educators, curriculum specialists, nursing and health-related instructors and program directors, and researchers formed the Panel of Experts serving at decision-making points in the evolution of this study. Each decision point reflects the input of one or more of the members of this Panel.

Functions of the Panel related to the investigation are identified as they appear in the presentation of the method. Included in the services performed was assistance in arriving at operational definitions in terms of nursing education in Oklahoma. For the purpose of establishing a frame of reference for the investigation procedure and for the discussion of the problem, the following additional definitions are presented at this point.

Definition of Terms²

Proficiency Examination -- A test used to measure an individual's

¹A listing of this committee is included in Appendix A.

²These definitions represent a "reasonable" consensus as the Panel did not arrive at a complete agreement on terminology.

expertise, usually in some content area but could evaluate competency in performance of skills as well. It may or may not be used for placement, exemption, or for granting of credit.

Fundamentals of Nursing -- Courses basic to nursing in the content areas of medical-surgical nursing, maternal-child health, basic nutrition, basic pharmacology, anatomy and physiology.

Fundamentals of Nursing I -- An introductory course in the fundamentals of nursing which is completed during Area I (first one-third) of the practical nursing program, at the end of the first semester of the associate degree programs, integrated throughout the first year of some diploma programs, and offered during the junior year of most baccalaureate programs.

Rural Programs -- Those nursing programs in non-urban areas having clinical experiences only in hospitals of 150 or less bed capacity.

Urban Programs -- Those nursing programs having clinical experiences primarily in hospitals having over 150 bed capacity.¹

Paper and Pencil Test -- A group-administered multiple choice examination to measure theoretical knowledge (acquired in the classroom).

Clinical Skills -- Performance of techniques and procedures in the clinical (patient) area. An application of the theoretical knowledge acquired in the classroom to the care of patients.

The Data-Gathering Instruments

Following an extensive review of the literature relating to tests for competency evaluation, this investigator chose the Mesa College

¹Here, the definitions of rural and urban programs relate to the variety of clinical experiences offered in the institutions utilized for the clinical practicum rather than to the population of the community.

Proficiency Examinations (Nursing-11)¹ as most nearly reflecting Katzell's six criteria for selecting an evaluation instrument (p. 20, supra). The Panel of Experts reviewed the paper and pencil and video-tape tests and agreed that they were acceptable tools for the purpose of this study (see supra, p. 28 for review of Mesa tests). It was suggested, however, that only the paper and pencil test be administered. It was pointed out that, regardless of ability to perform skills, any student failing to pass the theoretical portion of the examination would of necessity repeat the course. This suggestion was accepted, and permission was sought and granted to use the 80 item paper and pencil test instrument for the purpose of research.²

The Test Instrument

The Mesa College Proficiency Examination, Nursing 11³ was the first of three examinations developed by the Mesa College project. Assistance in statistical methodology and the consultation services of an expert in testing⁴ were secured in designing the project. Standard procedures for developing and testing measurement instruments were carried out by the project team.

¹Fundamentals of Nursing I.

²Permission to use the test instrument was granted by Mr. Al Gofferdi, Director, Area Vocational School, Mesa College District, Grand Junction, Colorado.

³For information regarding the use of the test and the examination fee, contact Mrs. Eileen Williams, Head, Department of Nursing, Mesa College, Grand Junction, Colorado, 81501.

⁴Mrs. Mary Shields, University of Arizona faculty member. Previous to her retirement, Mrs. Shields served as the director of the Evaluation Service of the National League for Nursing for many years.

Test items were constructed on the basis of responses to a course content questionnaire sent to schools of nursing in Colorado. A proportionate number of items were constructed as time allotted to objectives of the course. The method of pooled judgment was resorted to as a measure of content validity. After this procedure, content validity was assumed for the initial tests. Arrangements were made for testing the test items with associate degree nursing freshmen students. The test of item analysis was applied, using the upper and lower 27 percent of the scores thus obtained and a 15 percent discrimination level. Eighty items were selected for the paper and pencil test and 20 items for the videotape test. When the Mesa College nursing students' scores from the administration of the final draft of the Nursing-11 tests to the four groups was processed through the Spearman-Brown Split-Half reliability test, it was found that the 80 item paper and pencil test had a .69 reliability. Although the research team felt the test had a somewhat lower reliability than might be desired,¹ it did recommend that the test be used that fall for LPNs and diploma students wishing to seek college credit for mastered knowledge. It is presently being used with Mesa College students who wish to receive credit for Nursing-11.

The Questionnaire

A questionnaire was designed by the investigator to obtain information judged by the Panel of Experts to have possible relevancy to sample characteristic description, to provide data for future planning, and as

¹Nursing-22, a 100 item test, developed following the same procedure has an .81 reliability. A recommendation to increase the Nursing-11 test to 100 items has been initiated.

a means of forming bases for possible comparisons. It was further judged that the respondents in the sample were representative of the national population of practical and associate degree nursing students reported in the literature (pp. 25-27, supra). Therefore, only information determined as relating to (1) educational background; (2) nursing education; (3) status when enrolled; (4) job category; (5) job tenure; (6) principal sponsor; (7) influencer to enter program; (8) future plans; and (9) advanced education was solicited. (See Appendix B).

The Sample

As pointed out, the population of interest in this study included all nursing education programs in Oklahoma. The criteria of this investigation required that programs would have just completed the basic course in fundamentals of nursing when the data-gathering instruments were administered. A survey of programs in Oklahoma revealed that 18 of the 21 practical nursing and all 8 associate degree nursing programs met this criterion. Diploma and baccalaureate programs did not meet the above criteria due to timing sequence. The 26 programs were contacted, informed of the nature and purpose of the study, and invited to participate. All agreed to do so. These programs are acknowledged in Appendix C).

Each program director was then presented the course content grid developed in the Mesa College study to ascertain the similarity to the course on which the test instrument was based. The members of the Panel evaluating the completed grids judged them to be closely similar. These 26 programs were then accepted as the study sample to be investigated, and a testing schedule was arranged to include all students having just completed the basic fundamentals of nursing course. The Participating

School Agreement is shown in Appendix D).

Sample Characteristics

The review of the literature has identified major differences characterizing programs as being centered on their setting, control, financing, and scope of offerings (p. 27, supra). Since the investigation was a comparative one, the task of equating with respect to these variables could present a problem. The program records were reviewed to determine similarities and differences. A brief summary follows:

Setting -- All associate degree programs are based in two-year colleges, excepting one which is in a technical institute of a university. One practical nursing program is based in a two-year college technical program but receives no credit for courses. Eleven of the practical nursing programs are based in modern area vocational schools and six in comprehensive high schools. However, these six programs are not situated in the school plants currently being utilized by the secondary students. Four are in old remodeled classroom buildings vacated by the regular student population; one is situated in a hospital classroom; one is in a hospital annex. One of the area school programs is in a satellite mobile classroom.

Four of the associate degree and five of the practical nursing programs are located in urban areas as defined by this study. The remaining four associate degree and thirteen practical nursing programs are located in rural areas as defined by this study.¹

¹There is some concern that students may be handicapped in the achievement of the objectives of nursing programs by the limited variety of clinical experiences offered in the smaller hospitals found generally in the more rural areas. While this concern lies outside the scope of this investigation, transfer of theoretical knowledge to clinical performance is the core of nursing. For this reason, the rural-urban location was included as a part of the setting characteristic.

Control -- All programs are administered by and primarily supported through the public educational system. Those programs offering college credit, associate degree programs, are administered by the State Regents for Higher Education. The practical nursing programs are administered by the Department of Vocational-Technical Education and supervised by the Health Occupations Education Division of that Department, which also works with the associate degree programs on request. All programs are approved and periodically surveyed by the Oklahoma State Board of Nurse Registration and Nursing Education.

Scope of Offerings -- The associate degree program curriculum includes a body of general education courses. While the course content in nursing fundamentals is similar at both levels, with the possible exception of fundamentals of nursing I, the associate degree programs appear to place greater emphasis on the acquisition and transfer of theoretical knowledge to clinical practice. The practical nursing programs appear to stress competency in performance of techniques and procedures; however, both program levels have about equal emphasis on theory and clinical practice in the basic fundamentals of nursing introductory course.

The Panel members reviewing these program characteristics agreed that the two levels of programs were sufficiently comparable in the major characteristics relevant to this investigation with the possible exception of the rural-urban variable. An attempt was made to deal with the possible influence of this variable on the nature of the sample respondents. The results are presented in Chapter III.

Data Collection Procedure

The Mesa College Proficiency Examination for Fundamentals of Nursing I (Nursing-11) paper and pencil test of theoretical knowledge, and a questionnaire soliciting personal data, were administered to the students in each of the twenty-six practical and associate degree nursing programs having just completed the basic course in fundamentals of nursing. Students were invited to participate on a voluntary basis. Cooperation was assured, and arrangements were made to meet with the students during or following a class period for the purpose of administering the test instrument and questionnaire.

Test administration instructions and procedures were prepared by this investigator and each testing session was conducted following these written instructions. (See Appendix E). This investigator and/or one of two assistants knowledgeable in the administration of the test instrument conducted all testing sessions. A time period of two hours was scheduled; however, students were advised that this was not a timed test and to use as much time as required to complete the test. Assurance was given that the data would be kept confidential by sealing the personal data sheets in an envelope. Students were instructed that individual scores could be obtained directly from this investigator when the study was completed, but faculty members would not have this information.

When administered by an assistant, the completed test instruments and questionnaires were returned to this investigator in sealed envelopes without any sorting procedure being carried out. All questionnaires were properly completed. Data gathering sessions were completed within the allotted three weeks period.

Some Underlying Assumptions

1. There is a body of knowledge unique to nursing.
2. Students in practical and associate degree programs do not differ significantly in personal characteristics relating to success by type of program.
3. Achievement can be measured by a paper and pencil test, and the Mesa College test does measure achievement in basic fundamentals of nursing.

Limitations

1. Data were gathered over a three-week period during both morning and afternoon testing sessions.
2. Fifteen percent of the practical nursing programs in Oklahoma did not participate in the study.

The Data Analysis Plan

The questionnaire responses were categorized by type and location of programs and comparisons were made by educational background, level of education, status when enrolled, job category, time on job, sponsor, person of influence, future plans, and field of advanced education. The responses were then subdivided by location, and comparisons as to rural-urban status were made. The chi-square test for significance of difference at the .05 level was employed as the statistical tool for personal data.

Correct responses to the test instrument were tabulated to obtain a proficiency score and categorized by program type, location and individual program.

An analysis of variance (F value) was the statistical tool used to test the four hypotheses of the study.

Where the differences between means was shown to be statistically significant, the Scheffe' procedure was employed for comparisons of pairs. All the above mentioned statistical tools are described by Ferguson (1959) and Fox (1969).

CHAPTER III

RESULTS

Results of this study are presented in two sections, Composition of the Sample Study followed by Testing the Hypotheses.

Data from categories considered by the Panel to have relevancy to the composition of the sample were analyzed by program type (practical or associate degree nursing) and by location (rural or urban). Chi-square was the test used to determine whether or not there were significant differences which could be attributed to these boundary points.

These categories were sub-categorized as to (1) educational background, (2) level of nursing education, (3) status, (4) job category, (5) job tenure, (6) principal sponsor, (7) influencer, (8) future plans, and (9) advanced education. Data are presented in percentages for ease in visual comparisons.

The four research hypotheses were tested and the results are presented in the order stated at the beginning of the study. The analysis of variance was the statistical technique chosen because it distinguishes between program variance as well as within program variance. The significance of the difference is tested by the F value. A Scheffé test was used to determine the significance of difference in the achievement score means among the programs by type to insure the nominal significance level of .05 is maintained as the effective significance level.

Composition of the Sample Study

Data for this study were obtained from 447 students in eighteen practical nursing programs and from 293 students in eight associate degree nursing programs. These numbers include 99 percent of the total enrollment in the practical nursing programs and 94 percent of the total enrollment of the associate degree programs. Thus, more than 97 percent of the nursing students in Oklahoma having just completed the basic fundamentals of nursing course at this point in time were respondents in this investigation. Table 1 presents summary data for comparison of the sample by students enrolled and students tested.

TABLE 1.--Summary Table for Comparison of Sample by Students Enrolled and Students Tested

	Enrolled	Tested	Percent
P.N.	451	447	99.11
A.D.N.	309	293	94.82
Total	760	740	97.36

P.N. -- practical nursing	A.D.N. -- associate degree nursing ¹
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Of the total practical nursing student respondents, 13 were males. There were 29 male respondents from the associate degree nursing programs, making a total of 42 male respondents in the total of 740 respondents. Since males represent less than 6 percent of the sample, this

¹Hereafter in the tables, P.N. will represent practical nursing, and A.D.N. will represent associate degree nursing programs or students.

variable is not statistically analyzed. It is important to present, however, as males are under represented in nursing. Table 2 presents summary data for comparison of the sample by sex and rural-urban setting.

TABLE 2.--Summary Table for Comparison of Sample by Sex and Rural-Urban Setting

	Rural	Urban	Total	Percent		
				Rural	Urban	Total
Male	17	25	42	40.47	59.51	100
Female	395	303	698	56.59	43.40	100
Total	412	328	740	55.67	44.32	100

Approximately 14 percent more of the respondents were from the programs considered to be rural. However, more of the males (approximately 19%) were from urban areas. Eleven percent more females were in programs in a rural setting. Forty-two of the 43 males (97.67%) enrolled were tested and 698 of the 717 females (97.35%) enrolled were tested in the investigation. A detailed presentation of the sample by respondents enrolled and tested is not presented as it would identify programs.

When the sample characteristic variables were compared by rural-urban boundary points, only two significant differences were noted, that of Educational Background and Principal Sponsor in present program. Chi-square was used to test for a relationship between the characteristic variables and the rural-urban boundary. The relationship of rural and urban nursing programs by students' educational background is presented in Table 3. (May not add to 100 percent due to rounding procedures.)

TABLE 3.--Comparison of Rural and Urban Nursing Programs by Students' Highest Level Educational Background

Educational Background Highest Level	Rural		Urban	
	Number	Percent	Number	Percent
Highschool Graduate	151	36.7	76	23.2
G.E.D.	67	16.3	37	11.3
Some College	180	43.7	200	61.0
College Graduate	10	02.4	14	04.3
None of These	4	01.0	1	00.3
Total	412	100.0	328	100.0
N = 740		Chi-square = 27.7755	p < .001	

Urban students were higher on educational background ($p < .001$). One might expect this difference as more students in urban areas have access to college education. It is of interest that ten (2.4%) of the rural respondents and fourteen (4.3%) of the urban respondents were college graduates.

The rural and urban nursing programs were found to differ significantly also when the Principal Sponsor categories were compared. Chi-square used to test for a relationship between this characteristic variable and the rural-urban boundary show them to be significantly different with the urban respondents receiving more student loans and the rural respondents higher on scholarship receipt ($p < .01$). This comparison of rural and urban nursing programs by students' principal sponsor is presented in Table 4.

TABLE 4.--Comparison of Rural and Urban Nursing Programs by Students' Principal Sponsor

Principal Sponsor	Rural		Urban	
	Number	Percent	Number	Percent
Self	16	3.9	9	2.7
Student Loan	166	40.3	146	44.5
Scholarship	62	15.0	24	7.3
WIN	27	6.6	39	11.9
BIA	11	2.7	3	.9
Vo-Technical	13	3.2	14	4.3
Parents	4	1.0	2	.6
Voc-Rehabilitation	44	10.7	45	13.7
Other	48	11.7	25	7.6
Veteran or GI	21	5.1	21	6.4
Total	412	100.0	328	100.0
N = 740		Chi-square = 25.5416		p < .01

Of note is that less than 1 percent (0.9%) of the urban programs named the BIA (Bureau of Indian Affairs) as the Principal Sponsor. A slightly higher percentage of urban than rural program respondents (11.9% to 6.6%) designated WIN (Mothers with dependents) as the Principal Sponsor.

Comparisons of rural and urban nursing programs by (1) highest level of nursing education completed, (2) status when enrolled, (3) job category, (4) job tenure, (5) influencer to enter program, (6) future plans and (7) choice of advanced education field are not shown to be significantly different. See Tables 19-25, Appendix G.

When the sample characteristic variables were compared by practical and associate degree nursing boundary points, 3 of the 9 variables were not significantly different: (1) job category, (2) job tenure, and (3) choice of advanced education field. (See Tables 26-28, Appendix G). Six categories differed significantly in respondent characteristic variables related to program type: (1) educational background, (2) highest level of nursing education completed, (3) status when enrolled, (4) principal sponsor, (5) influencer to enter program, and (6) future plans. The comparisons will be discussed by category as they relate to program type (level of practice). Table 5 shows a comparison by the students' educational background.

TABLE 5.--Comparison of Practical and Associate Degree Nursing Programs by Students' Educational Background

Educational Background	P.N.		A.D.N.	
	Number	Percent	Number	Percent
High School Graduate	222	49.7	5	01.7
G.E.D.	104	23.3	0	00.0
Some College	109	24.4	271	92.5
College Graduates	7	01.6	17	05.8
None of These	5	01.1	0	00.0
Total	447	100.0	293	100.0
N = 740		Chi-square = 373.8108	p < .001	

Students of associate degree programs were higher in educational background ($p < .001$) as might be expected since these programs were beginning

the second semester of college preparation. Determining students admitted with advanced standing into this second semester was beyond the scope of this investigation, however, this is a possible explanation of the 5 associate degree nursing student responses tabulated as "high school graduate" for highest level of educational background. The Oklahoma State Board of Nursing sets a minimum educational requirement for entrance into the practical nursing program as a tenth grade equivalency or G.E.D. This is a possible explanation of the 5 practical nursing student responses tabulated as none of these for highest level of educational background.

A comparison of the highest level of nursing education attained prior to entering either program (Table 6) shows the associate degree respondents to have attained a higher level ($p < .001$) of nursing education than the practical nursing respondents. However, more than half (P.N. 60.8%; A.D.N. 49.5%) of the respondents had an employable skill in a level of nursing practice.

TABLE 6.--Nursing Education Categories Collapsed--Comparison of Practical and Associate Degree Nursing Programs by Highest Level of Nursing Education Completed

Highest Level of Nursing Education Completed	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Nursing Assistant or Orderly	267	59.7	113	38.6
P.N. or Higher	5	01.1	32	10.9
None of These (unspecified)	175	39.1	148	50.5
Total	447	100.0	293	100.0
N = 740				
Chi-square = 54.690				
p < .001				

Over 10 percent (10.9%) of the A.D.N. students had completed a practical nursing or higher level program. The 5 P.N. students (1.1%) having completed a practical nursing or higher level of education may possibly represent waived licensed practical nurse (LPN) responses.

Table 7 presents the programs by students' status when enrolled. The P.N. students were higher ($p < .001$) than the A.D.N. students in employment just prior to enrollment. However, over half of all the students (P.N. 62%; A.D.N. 47.4%) were employed prior to entering the program. Over 13 percent (13.6%) of the P.N. and over 6 percent (6.8%) of the A.D.N. students were unemployed. Only 4 respondents of the total sample entered a nursing program (associate degree) directly from the military.

TABLE 7.--Comparison of Practical and Associate Degree Nursing Programs by Students' Status When Enrolled

Status When Enrolled	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Employed	277	62.0	139	47.4
Going to School	47	10.5	86	29.4
Military	0	00.0	4	01.4
Unemployed	61	13.6	20	06.8
Other (Unspecified)	56	12.5	28	09.6
Employed and Going to School	6	01.3	16	05.5
Total	447	100.0	293	100.0
N = 740				
Chi-square = 66.6862				
p < .001				

Respondents from practical and associate degree nursing programs differ significantly ($p < .001$) on Principal Sponsor of present educational program (Table 8). The P.N. students acquired more student loans¹ (P.N. 199, 44.5%; A.D.N. 113, 38.6%) with the A.D.N. students receiving the larger number of scholarships (A.D.N. 62, 21.2%; P.N. 24, 5.4%). It is of interest that while these programs are considered to be vocational

TABLE 8.--Comparison of Practical and Associate Degree Nursing Programs by Students' Principal Sponsor

Principal Sponsor	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Self	17	3.8	8	2.7
Student Loan	199	44.5	113	38.6
Scholarship	24	5.4	62	21.2
WIN	35	7.8	31	10.6
BIA	14	3.1	0	00.0
Vo-Technical	15	3.4	12	04.1
Parents	5	1.1	1	00.3
Voc-Rehabilitation	56	12.5	33	11.3
Other (Unspecified)	52	11.6	21	07.2
Veteran or GI	30	6.7	12	04.1
Total	447	100.0	293	100.0
N = 740		Chi-square = 58.2761	p < .001	

¹Federal scholarships and loans are not available to students in practical nursing. However, licensed practical nurses entering associate degree programs are given top priority over all other nursing students.

or technical in nature, 27 (P.N. 15, A.D.N. 12) of the total 740 respondents indicated Vocational-Technical Education as the principal sponsor of their educational program. A small number (6 of 740) of respondents indicated parents to be their principal sponsor (P.N. 5, A.D.N. 1). Worthy of mention is that no A.D.N. and 14 P.N. students indicated the BIA as principal sponsor.

Respondents in practical nursing programs differ significantly ($p < .001$) from respondents in associate degree programs when selecting the person influencing them to enter nursing (see Table 9). More respondents in both programs chose parents as Influencer. However, a

TABLE 9.--Influencer Categories Collapsed--Comparison of Practical and Associate Degree Nursing Programs by Students' Influencer to Enter Program

Influencer	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Parents	308	68.9	166	56.7
Relatives	21	04.7	35	11.9
Friends	24	05.4	11	03.8
Employer	37	08.3	37	12.6
Vocational Teacher	25	05.6	12	04.1
High School Counselor	13	02.9	7	02.4
High School Academic Teacher	1	00.2	5	01.7
Other (Unspecified)	18	04.0	20	06.8
Total	447	100.0	293	100.0
N = 740		Chi-square = 29.2250	p < .001	

greater percentage of the practical nursing program respondents chose parents as Influencer than did the respondents from the associate degree programs (P.N. 68.9%, A.D.N. 56.7%). A greater percentage of the associate degree respondents chose relatives as the Influencer than did the practical nursing respondents (A.D.N. 11.9%, P.N. 4.7%). When parents and relatives categories are combined, these two selections account for the major percentage of the sample respondent choices. (P.N. 73.6%, A.D.N. 68.6%). This is of interest, for parents are shown as Principal Sponsor (Table 8, supra) by less than 2 percent of the respondents (P.N. 1.1%, A.D.N. 0.3%). Employer was selected as Influencer second only to parents in both levels of nursing programs (P.N. 8.3%, A.D.N. 12.6%). Vocational teachers was indicated as influencing 37 of the 740 respondents to enter nursing (P.N. 5.6%, A.D.N. 4.1%), while the high school counselor was selected by 20 respondents (P.N. 2.9%, A.D.N. 2.4%) as influencing the respondent to enter a nursing program. Teachers and counselors combined were selected by less than 9 percent of the respondents (P.N. 8.7%, A.D.N. 8.2%) as having influenced them to enter nursing.

Respondents in practical nursing differ significantly ($p < .01$) from respondents in associate degree nursing programs on plans for the future. (See Table 10). A higher percentage of the P.N. students plan to work following completion of their nursing education program (P.N. 51%; A.D.N. 42.7%), and a greater percentage plan to combine work and education (P.N. 35.8%; A.D.N. 32.8%). More A.D.N. than P.N. students plan to continue education full time (A.D.N. 15, 5.1%; P.N. 12, 2.7%), and more A.D.N. than P.N. students plan to emphasize education and work part time (A.D.N. 48, 16.4%; P.N. 41, 9.2%). This may reflect data presented in Table 8

(p. 51, supra) which show 21.1% A.D.N. students receiving scholarship while only 5.4% P.N. students were receiving this assistance as the principal sponsor of their program.

TABLE 10.--Comparison of Practical and Associate Degree Nursing Programs by Students' Future Plans

Future Plans	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Continue Education Full Time	12	02.7	15	05.1
Work	228	51.0	125	42.7
Work then Continue Education	160	35.8	96	32.8
Work Part Time and Continue Education	41	09.2	48	16.4
None of the Above	6	01.3	9	3.1
Total	447	100.0	293	100.0
N = 740				
Chi-square = 16.1901				
p < .01				

Testing the Hypotheses

The study was primarily concerned with determining whether achievement in the basic fundamentals of nursing would differ significantly between the practical and associate degree programs in Oklahoma.

A secondary concern of the study involved determining whether achievement in the basic fundamentals of nursing would differ significantly between the rural and urban location of the program.

The measure of achievement consisted of the scores made by

students in the nursing programs using the Mesa College Proficiency Examination, an eighty-item paper and pencil test to measure theoretical knowledge.

It was assumed that the differences in achievement would be reflected in the individual scores on a validated test instrument. If this were the case, the scores of the subgroups under study should vary significantly from each other. On the basis of this assumption the following null hypotheses were stated.

Hypothesis 1. There is no significant difference in mean achievement in the basic fundamentals between practical nursing and associate degree nursing programs.

Hypothesis 2. There is no significant difference in mean achievement of students of both nursing levels between the rural programs and the urban programs.

Hypothesis 3. There is no significant difference in the mean achievement of students among the eighteen practical nursing programs.

Hypothesis 4. There is no significant difference in the mean achievement of students among the eight associate degree nursing programs.

Findings

The findings which relate to the primary concern of achievement in the two levels of nursing practice are presented in Table 11. The mean Mesa College test scores, the standard deviations of the two levels of program, and the number in each group are shown.

The findings which relate to achievement by rural or urban location are presented in Table 12. The mean Mesa College test scores, standard deviations, and the number in each group are shown by rural and

urban locations.

TABLE 11.--Mean Mesa College Test Scores and Standard Deviations for Practical and Associate Degree Nursing Respondents by Program Type

	P.N.	A.D.N.
Number	447	293
Mean	51.9217	53.0580
S.D.	6.5710	7.2508

TABLE 12.--Mean Mesa College Test Scores and Standard Deviations for Practical and Associate Degree Nursing Respondents by Rural and Urban Location

	Rural	Urban
Number	412	328
Mean	51.5898	53.3537
S.D.	6.5730	7.1061

A third purpose of the study was concerned with determining whether achievement in the basic fundamentals of nursing would differ significantly among the programs within the levels of practice (practical and associate degree nursing). The findings which relate to achievement are shown in Tables 13 and 14, p. 57.

Only the mean Mesa College achievement test scores and the standard deviations are presented as the design of this study insures confidentiality. Presentation of the number in each group would serve

TABLE 13.--Mean Scores and Standard Deviations for the Practical Nursing Programs

	Location	Mean	S.D.
1	U	49.367	6.987
2	R	47.894	5.227
3	R	55.857	4.725
4	R	54.117	5.644
5	U	49.727	7.509
6	R	52.000	4.845
7	U	48.681	5.651
8	R	55.375	5.223
9	R	48.666	6.069
10	R	49.866	6.657
11	R	52.599	4.977
12	R	51.083	4.294
13	R	51.761	7.126
14	R	54.888	6.623
15	R	52.434	6.451
16	U	58.423	4.365
17	U	52.923	6.144
18	R	51.230	6.907

R = rural U = urban

TABLE 14.--Mean Scores and Standard Deviation for the Associate Degree Nursing Programs

	1	2	3	4	5	6	7	8
Location	Urban	Urban	Rural	Urban	Urban	Rural	Rural	Rural
Mean	56.731	53.892	52.627	57.526	51.514	53.041	48.238	46.500
S.D.	6.469	6.574	5.572	5.967	6.744	7.285	5.946	10.530

to identify the individual programs, therefore, each will be labeled only as rural or urban. Table 13, p.57 presents the mean scores and standard deviations for the eighteen practical nursing programs. Mean scores and standard deviations for the eight associate degree programs are presented in Table 14, p. 57.

Results of Testing the Hypotheses

The findings which relate to the four research hypotheses are presented following a restatement of each hypothesis in the order stated at the beginning of the study.

Hypothesis 1. There is no significant difference in mean achievement in the basic fundamentals between practical nursing and associate degree nursing programs. An analysis of variance for one-way design was used to test this hypothesis. A table of F values was consulted to determine statistical significance at .05 level.

Table 15 shows analysis of variance data pertaining to the Mesa College test scores and the practical and associate degree nursing programs. An examination of the data reveals an F value of 4.8732 which indicates significance at the .05 level. The test does not support

TABLE 15.--Analysis of Variance for P.N. and A.D.N. Nursing Programs

Source of Variance	ss	<u>df</u>	ms	<u>F</u>
Between Groups	228.5325	1	228.5325	4.8732
Within Groups	34609.1602	738	46.8959	
Total	34837.6914	739		p < .05

research null hypothesis 1, therefore, the supposition of no significant difference in the mean achievement between practical and associate degree nursing programs is rejected.

Hypothesis 2. There is no significant difference in mean achievement of students of both nursing levels between the rural programs and the urban programs. An analysis of variance was used to test this hypothesis. A table of F values was consulted to determine statistical significance at the .05 level.

Table 16 shows analysis of variance data pertaining to the Mesa College test scores and the rural and urban programs. An examination of the data reveals an F value of 12.2353 which indicates significance at the .05 level. The test does not support research null hypothesis 2, therefore, the supposition of no significant difference in the mean achievement of both nursing levels between the rural programs and the urban programs is rejected.

TABLE 16.--Analysis of Variance for Rural-Urban Nursing Programs

Source of Variance	ss	df	ms	<u>F</u>
Between Groups	568.1553	1	568.1553	12.2353
Within Groups	34269.7227	738	46.4359	
Total	34837.8750	739		p < .05

Hypothesis 3. There is no significant difference in the mean achievement of students among the eighteen practical nursing programs. An analysis of variance was used to test this hypothesis. A table of

F values was consulted to determine statistical significance at the .05 level.

Table 17 shows summary analysis of variance data pertaining to the Mesa College test score means of student respondents in the eighteen practical nursing programs. An examination of the data reveals an F value of 5.3081 which indicates significance at the .05 level. The test does not support research null hypothesis 3, therefore, the supposition of no significant difference in the mean achievement of students among the eighteen practical nursing programs is rejected.

TABLE 17.--Summary Analysis of Variance for Practical Nursing Programs

Source of Variance	ss	<u>df</u>	ms	<u>F</u>
Between Groups	3346.8481	17	196.8734	5.3081
Within Groups	15911.3477	429	37.0894	
Total	19258.1953	446		p < .05

A Scheffé test was used to determine the significances of difference in test score means among the eighteen practical nursing programs. Table 29, Appendix G, shows the F' values for these comparisons. It is interesting that one program accounts for the significances of difference among the eighteen programs. The test score mean of this urban program is significantly higher than two other urban and three rural programs. Twelve of the practical nursing programs do not differ significantly.

Hypothesis 4. There is no significant difference in the mean achievement of students among the eight associate degree nursing programs.

An analysis of variance was used to test this hypothesis. A table of F values was consulted to determine statistical significance at the .05 level.

Table 18 shows summary analysis of variance data pertaining to the Mesa College test score means of student respondents of the eight associate degree nursing programs. An examination of the data reveals an F value of 9.9717 which indicates significance at the .05 level. The test does not support research null hypothesis 4, therefore, the supposition of no significant difference in the mean achievement of students among the eight associate degree nursing programs is rejected.

TABLE 18.--Summary Analysis of Variance for Associate Degree Nursing Programs

Source of Variance	ss	df	ms	<u>F</u>
Between Groups	3020.2610	7	431.4658	9.9717
Within Groups	12331.7109	285	43.2691	
Total	15351.9687	292		p < .05

A Scheffé test was used to determine the significances of difference in test score means among the eight associate degree nursing programs. Table 30, Appendix G, shows the F' values for these comparisons. While no prediction was made as to which location of programs would score significantly higher or lower on the Mesa College test, it is interesting that in half of the instances the urban associate degree programs score significantly higher than the rural associate degree programs. In no instance did a rural program score significantly higher

than an urban program. Two rural programs are not significantly higher or lower (different) in mean achievement on the Mesa College test than any other associate degree nursing program in Oklahoma.

An examination of both Table 13, showing the mean scores of the practical nursing programs, and Table 14, showing the mean scores of the associate degree programs, reveals the highest mean score of any program to be achieved by an urban practical nursing program. (See Tables, p. 57.)

A Scheffé test used to determine the significances of difference in test score means among all of the twenty-six nursing programs shows four programs to differ significantly. Table 31, Appendix G, summarizes these significant F' values.) One rural associate degree nursing program's mean achievement score is significantly lower than two urban associate degree and one urban practical nursing programs' mean achievement scores. One urban practical nursing program's mean achievement score is significantly higher than one rural associate degree nursing and one urban practical nursing programs' mean achievement scores. Twenty-two programs did not differ significantly on mean achievement scores. The five significances of difference were accounted for by five different programs.

CHAPTER IV

DISCUSSION OF FINDINGS

It was expected the results of this study would add to the knowledge of factors that might affect career mobility opportunities in nursing education in Oklahoma. Lack of such opportunities is thought to have a bearing on the manpower shortages now being experienced in the professional, technical and vocational levels of nursing practice. Repetition of course content already mastered is economically and educationally inefficient. The findings of this study should lend support to providing career mobility opportunities in nursing education and/or provide data for modification of existing programs toward achievement of that goal.

The investigation was conducted primarily to provide information relating to achievement in the basic fundamentals of nursing by students in the P.N. and A.D.N. programs in Oklahoma. A secondary concern involved determining a possible relationship of rural-urban location to the mean achievement in basic fundamentals of nursing in the two types of programs. Based on theory and results of previous research, the assumption was made that students in practical and associate degree programs in Oklahoma would not differ significantly in mean achievement on a basic fundamentals of nursing test. The results of this investigation did not support this research hypothesis of primary concern to the

study, i.e. there is a significant difference in mean achievement in the basic fundamentals between practical and associate degree nursing programs in Oklahoma as measured by respondent scores on the Mesa College Proficiency Examination.

A secondary concern of the study hypothesizing no significant influence of rural-urban location on mean achievement was not supported, i.e. there is a significant difference in mean achievement of students of both nursing levels of practice between the rural programs and the urban programs.

A third concern of the study hypothesizing no significances of difference in mean achievement scores among the programs within the levels of practice was not supported, i.e. there are significances of difference in mean achievement among the eighteen practical nursing programs, and there are significances of difference in mean achievement among the eight associate degree nursing programs.

An a posteriori test for significances of difference among all the twenty-six nursing programs did not support the assumption of no significances of difference in mean achievement among the individual programs. Thus, the four research hypotheses of no significant difference are rejected. Some interesting insights into the situation being studied were revealed when possible explanations of the negative results were sought. A discussion of the findings by program type, location and individual programs is presented.

Discussion by Program Type

In review, when the programs preparing the students for the two levels of nursing practice were compared by respondent characteristics,

there were no significant differences noted in Job Category, Job Tenure, and choice of Continuing Education. Significant differences ($p < .05$) were shown in the categories of highest level of Educational Background, highest level of Nursing Education Completed, Status when enrolled, Principal Sponsor, Influencer on student to enter the program, and Future Plans on completion of the present program. It was anticipated that significant differences would be found in the educational level, as the associate degree students were beginning a second semester of college work. It was not unexpected also that some of the associate degree students would have completed a practical nursing program prior to present enrollment. It would have been surprising, however, had a large number of practical nursing students already completed such a program. Such was not found to be the case, thus, it is assumed these category findings to be acceptable without further discussion. For explanation of findings in categories less familiar, another look at the results follows.

Difference between the respondent characteristic in the two types of programs regarding the Influencer category diminishes when Parents and Relatives are combined as one category (P.N. 73%, A.D.N. 68%). While a greater percentage of associate degree nursing students were influenced to enter the program by Employers (A.D.N. 12%, P.N. 8%), this is a relatively small difference, as the numbers are equal in each program (A.D.N. 37, P.N. 37). It would appear reasonable to assume this respondent characteristic as not greatly influencing the significance of difference in mean achievement by program type.

The category, Future Plans, could conceivably serve as a motivating factor in achievement, and a greater number of A.D.N. respondents

(A.D.N. 15, P.N. 12) did indicate plans to continue education full time. In terms of percentages, however, this represents only about 3% of the total sample. Therefore, the supposition of little influence of Future Plans on the significant difference found in the present M.A.S. between the two types of programs is based on the fact of relatively small portion of the sample indicating plans to continue education full time.

A greater percentage of the A.D.N. respondents show their Principal Sponsor as being a student scholarship. Most scholarships, however, are not available to practical nursing students. No implied association with academic ability is intended. The design of the study relating to this category offers limited explanation for these findings.

When considering Status when enrolled as a factor influencing achievement differences, it is noted that more P.N. respondents (P.N. 62%, A.D.N. 47.4%) were employed just prior to enrollment in the present program. An additional 16 A.D.N. respondents (5.5%) were both employed and going to school. Thus, over one-half of the respondents in both programs (A.D.N. 52.9%, P.N. 63%) were working just prior to enrollment. It appears to be reasonable to assume that employment, in and of itself, would not account for the significant difference in mean achievement between the two types of programs. Another sub-category of Status When Enrolled relates to Going to School prior to present program. Almost 30 percent of the A.D.N. respondents were in school prior to entering the present program, while approximately 11 percent (10.5%) of the P.N. students were so engaged. Slightly more than 1 percent (1.3%) of the P.N. respondents were both in school and employed. Here, again, the purpose of this study did not include analysis of sub-categories for

influence on mean achievement differences. Thus any assumption of no influence of prior enrollment in school on difference in mean achievement of the two types of program would be, at best, a tenuous one. Considering approximately 20 percent more (A.D.N. 29.4%, P.N. 10.5%) A.D.N. students entered nursing directly from school than did P.N. students, a reinforcing effect could be operating. This sub-category will be examined again when considering the programs by location.

While a greater percentage of the P.N. respondents had completed some type of nursing program (P.N. 60.8%, A.D.N. 49.5%), a substantially greater percentage of the A.D.N. respondents had completed a practical nursing or higher program (A.D.N. 10.9%, P.N. 1.1%). It appears reasonable to expect some carry-over effect where achievement in theoretical knowledge is concerned, however, the design of this study does not provide for determining influence of the prior completion of a P.N. program on achievement in the basic fundamentals of nursing in the A.D.N. program.

Summary of Discussion by Programs

The characteristic differences of the P.N. and A.D.N. program respondents which appear most likely to have influenced mean achievement differences between the nursing programs by type are the categories of Educational Background and highest level of Nursing Education completed. A review of the findings on respondent characteristics relating to urban-rural location will be made in an effort to provide additional information on the possible role of these two characteristics on achievement differences in the P.N. and A.D.N. programs.

Discussion by Program Location

A review of the findings related to location shows the respondents to differ significantly in two categories only. These two differences are consistent with the finding when comparisons were made by program type. The two categories are Educational Background and Principal Sponsor. Sixty-one percent of the urban program respondents had some college, while 43.7 percent of the rural program respondents had some college education. Thus, approximately 18 percent (17.3%) more urban than rural program respondents had some college. Since 15 percent more of the rural respondents are P.N. than are A.D.N. students, this difference is not unexpected. However, having some college education cannot be ruled out, at this point, as a factor influencing the difference in mean achievement in the basic fundamentals of nursing when comparing the programs by location.

Four percent of the urban and 2.4 percent of the rural program respondents had completed college. This sub-category includes 24 respondents (10 rural and 14 urban) and represents just over 3 percent (3.2%) of the total sample. It seems reasonable to assume that being a college graduate would have small influence on difference in mean achievement between the rural and urban programs in this study.

While a greater percentage of urban than rural students designated Student Loan as the Principal Sponsor of their program (44.5% to 40.3%) more rural students received student loans as the principal source of sponsorship. Since approximately two-thirds (61.6%) of the rural respondents are in P.N. programs and not eligible for most scholarships, this finding is not unexpected. The difference between the two program

locations in percentage of students designating the Principal Sponsor as being a Student Loan is less than 5 percent of the total sample. This would seem too small a number to greatly influence the significance of difference in mean achievement scores¹ between the two program locations. Sixty-two rural respondents and 24 urban respondents designated Scholarship as the principal source of sponsorship.

Summary of Discussion by Program Location

The characteristic differences of the rural and urban program respondents considered by the design of the study appear to be slight. However, the higher level of education attained by the urban program respondents cannot be ruled out, at least not at this point, as a significant influencing factor on the significance of difference in M.A.S. of the rural and urban programs. This consideration will be examined again, along with a look at the individual program M.A.S.

Discussion by Individual Program

Failure of the findings of this study to confirm the hypotheses of no significant difference in mean achievement between the programs by type and location leads one to seek explanations for differences within the program groups.

An examination of the M.A.S. of the individual P.N. programs shows them to range from a high of 58.42 to a low of 47.89. Standard deviations range from 4.29 to 7.5. The highest M.A.S. was attained by an urban program, while the lowest M.A.S. was attained by a rural program. Slightly more rural programs were above the P.N. M.A.S. (R-7, U-6)

¹Mean achievement score(s) hereafter referred to as M.A.S.

of 51.92, and slightly more urban programs were below (U-3, R-2). The highest M.A.S. for an individual program was attained by an urban program, and the lowest M.A.S. was attained by a rural program. While the finding of significances of difference among the P.N. programs is supported by this examination, no pattern is established which appears to relate the difference to location. That thirteen of the eighteen P.N. programs are in a rural location (by definition of the study), while only five programs are considered to be urban, may account for this situation.

An examination of the M.A.S. of the individual A.D.N. programs shows them to range from a high of 57.53 to a low of 46.50. Standard deviations range from 5.57 to 10.53. The highest M.A.S. was attained by an urban program, and the lowest M.A.S. was attained by a rural program. Three of the 4 urban programs attained M.A. scores above the A.D.N. group M.A.S. (53.06). All of the rural programs attained M.A. scores below the M.A.S. of the A.D.N. group. One rural program, however, was essentially the same (53.04) as the A.D.N. group M.A.S. This examination of the results supports the finding of significances of difference among the A.D.N. program M.A.Ss and establishes a pattern which may relate the differences to some aspect of location. As the A.D.N. programs are equally divided as to urban-rural location (by definition), the explanations relating to location are probably meaningful.

When the results of the test applied to the total sample of 26 programs are examined for explanations of the negative findings, it is noted that while the number of significances of difference are diminished, they are not eliminated. There is, however, no apparent consistent relationship of significance of difference to program type. Two

A.D.N. programs are shown as having significantly higher M.A. scores than 1 A.D.N. program and 1 P.N. program. One P.N. program, in addition, is shown as having a significantly higher M.A.S. than 1 A.D.N. and 1 P.N. program. Five A.D.N. and 16 P.N. programs do not differ significantly in M.A. scores. The 2 significantly higher A.D.N. and the 1 significantly higher P.N. M.A. scores represent urban programs. The significantly lower A.D.N. M.A. score represents a rural program. The significantly lower P.N. M.A. score was attained by an urban program. Thus, it can be seen that no pattern of relationship is established concerning M.A. in the basic fundamentals of nursing with programs by type and/or location, nor would it appear that respondent characteristics of concern in this study significantly influence differences in M.A.S.

Summary of the Discussion

Although statistically significant, the margin between the scores calculated for these programs is small. The M.A. scores by program type are less than 2 points separated (P.N. 51.921, A.D.N. 53.058) as are the M.A. scores by location (R-51.589, U-53.353). Fewer than 12 points (11.92) separate the highest and the lowest M.A.S. among the 26 individual nursing programs. Five P.N. program M.A. scores exceed the M.A.S. of the A.D.N. program group, while 3 A.D.N. programs scored below the M.A.S. of the P.N. program group.

The M.A. scores by location show the P.N. programs to be equally divided above (R-7, U-2) and below (R-6, U-3) the M.A.S. for P.N. programs (51.92). The M.A. scores by location show more rural A.D.N. programs below (R-3, U-1) and more urban programs above (R-1, U-3) the M.A.S. of the A.D.N. programs (53.058). As these programs are equally divided as

to location, one finding follows the other.

Again, 21 of the 26 nursing programs do not differ significantly in M.A. scores on the Mesa College Proficiency Examination of theoretical achievement in the basic fundamentals of nursing when compared as a single group.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was designed to investigate whether practical nursing programs in Oklahoma are preparing students with an adequate foundation for achieving advanced standing in associate degree nursing programs in Oklahoma. Lack of career mobility opportunities through nursing education is thought to have a bearing on the manpower shortages now being experienced in the professional, technical and vocational levels of nursing.

The rationale for upward mobility as a means of career development is simple: No individual should be required to repeat work already mastered. An indepth investigation of career development in nursing education and a look at programs presently in operation in Oklahoma shows that few have developed working programs. This study is expected to add to the knowledge of factors which would effect establishing career mobility opportunities in nursing education in Oklahoma.

The problem of this study consisted of comparing the proficiency in basic fundamentals of nursing between practical and associate degree programs with respect to responses of students to items of an achievement test. It was assumed that:

1. There is a common body of knowledge in basic fundamentals of nursing that is comparable in both types of programs.

2. Students in practical and associate degree programs do not differ significantly in personal characteristics relating to success by type of program.

3. Nursing programs do not differ significantly in the major characteristics relating to student achievement in basic fundamentals of nursing.

4. Achievement can be measured by a paper and pencil test. The personal characteristics measured concerned (1) educational background, (2) nursing education, (3) status when enrolled, (4) job category, (5) job tenure, (6) principal sponsor, (7) influencer to enter program, (8) future plans, and (9) advanced education. Four research hypotheses were formulated to test the assumptions. They were:

1. There is no significant difference in mean achievement in the basic fundamentals between practical nursing and associate degree nursing programs.

2. There is no significant difference in mean achievement of students of both nursing levels between the rural programs and the urban programs.

3. There is no significant difference in the mean achievement of students among the eighteen practical nursing programs.

4. There is no significant difference in the mean achievement of students among the eight associate degree nursing programs.

The Mesa College Proficiency Examination for Fundamentals of Nursing I (Nursing 11) 80 item paper and pencil test of theoretical knowledge and a questionnaire soliciting personal data were administered to

447 practical nursing students in eighteen Oklahoma programs and 293 associate degree nursing students in eight Oklahoma programs having just completed the basic course in fundamentals of nursing. Students were invited to participate on a voluntary basis.

The questionnaire responses were categorized by type and location, and comparisons were made as to respondent characteristics and rural-urban location. Correct responses to the test instrument were tabulated to obtain proficiency scores and categorized by program type, location and individual program.

An analysis of variance (F value) was the statistical tool used to test the four research hypotheses of the study. When statistically significant (.05 level) differences were observed, the Scheffe procedure was employed for comparison of pairs.

The study was limited to Oklahoma nursing programs having just completed the basic fundamentals of nursing course. Diploma, baccalaureate, and fifteen percent of the practical nursing programs did not meet the criterion due to timing sequence. Data were gathered over a three-week period during both morning and afternoon testing sessions. The reliability and the validity of the findings and conclusions are dependent upon the reliability and validity of the Mesa College Proficiency Examination as a measure of achievement in the basic fundamentals of nursing of students in practical and associate degree nursing programs.

Findings and Conclusions

When the programs preparing the students for the two levels of nursing practice were compared by respondents characteristics, significant differences were shown in the categories of Educational Background,

Status when Enrolled, Principal Sponsor, Influencer to enter program, and Future Plans on completion of the present program. A review of these findings indicated that the characteristics which appear most likely to have influenced the mean achievement difference between and among the programs by type are the categories of Educational Background and the highest level of Nursing Education completed.

A review of the findings related to rural-urban location show the respondents to differ significantly in two categories, the highest level of Educational Background, and the Principal Sponsor. The rural associate degree respondents having the higher level of Educational Background did not consistently score higher on the achievement test. In summary, the characteristic differences of the rural and urban program respondents considered by the design of this study appear to have slight effect on achievement in the basic fundamentals of nursing.

The results of this investigation did not support the research hypotheses of concern to this study, i.e. there is a significant difference in mean achievement in the basic fundamentals of nursing between practical and associate degree programs in Oklahoma with the associate degree programs achieving the higher mean score; there is a significant difference in mean achievement of students of both nursing levels between the rural programs and the urban programs with the urban students achieving the higher mean score; there are significances of difference in mean achievement among the eighteen practical nursing programs; and there are significances of difference in mean achievement scores among the eight associate degree nursing programs.

Although statistically significant, the margin between the

scores calculated for these programs is small, and despite the significant differences in mean scores between the programs by type (level of practice) and rural-urban location, they do not appear to differ markedly in mean achievement score due primarily to program type. Only speculation as to the influence of the rural-urban location on the achievement in the basic fundamentals of nursing can be made, as the design of the study does not provide explanations for this finding.

On the basis of the results of this investigation and the search for explanations of the negative findings presented previously, ten conclusions seem to be justified:

First, some practical nursing programs are preparing students in the basic fundamentals of nursing equally well and/or better than some associate degree nursing programs. Several practical nursing programs score well above several associate degree programs on mean achievement in the theoretical content of the basic fundamentals of nursing course. Students in these programs could continue in an associate degree program with advanced standing in fundamentals of nursing.

The second conclusion of this study is that the location of the rural associate degree programs does negatively influence mean achievement scores in these programs. Some caution must be exercised in relating the definition of rural as given here with the negative findings for location, as practical nursing programs appear to be less negatively influenced on mean achievement scores by the factor of rural location.

The third conclusion based on the findings of this study is that some practical nursing programs and some associate degree nursing programs differ less in preparation of students in the basic fundamentals of nursing

than do practical nursing programs as a group or associate degree nursing programs as a group. In short, some factor (or factors) other than program type (level of practice) appears to account for the significances of difference in mean achievement scores among the programs.

The fourth, fifth, sixth and seventh conclusions of this study are based on data gathered by the questionnaire concerning respondent characteristics and on the findings relating to them.

Fourth, the students in both types of programs are similar in the personal characteristics measured by this study. Educational Background, highest level of Nursing Education, and Principal Sponsor of program appear to contribute most to the difference. These differences are not unexpected as the design of the study included the first semester of the associate degree program as some college. In relation to Nursing Education Completed, few practical nursing students would have finished a practical nursing program.¹ Concerning Scholarships, while the L.P.N. students in the associate degree nursing programs have a priority on receiving scholarships, practical nursing students are not eligible for most scholarships. It is not unexpected, then, that more associate degree nursing students designated Scholarship as the Principal Sponsor of their educational program.

Fifth, students in practical and associate degree nursing programs receive little financial support for their nursing education from their parents, thus, most of them must work to help finance their education. Prior to enrollment about two-thirds of those students working

¹A graduate of a practical nursing program not passing the licensing examination on successive trial might choose to re-enter a practical nursing program. A waived Licensed Practical Nurse might choose to take the formal practical nursing program.

were engaged in nursing or a health-related occupation.

Sixth, the greatest influence to entering nursing appears to be parents and other relatives. Employers are the next most important source of influence; however, the numbers of students being influenced from this source is small. This suggests that educational institutions are doing little to attract students into nursing.

Seventh, many practical and associate degree students enter health occupations programs at a lower level of practice than their life goals and ambitions dictate. This suggests that it may be necessary to obtain a saleable skill to finance an advanced program. More than two-thirds of the respondents indicated that--should they continue their education, it would be in an advanced nursing or health related program.

The eighth conclusion derived from the findings of this study relates to the test instrument, the Mesa College Proficiency Examination. The test discriminates on the variable of achievement in the basic fundamentals of nursing and may be a valuable tool for use in Oklahoma nursing programs desiring to grant credit for mastery of content.

The ninth conclusion of this study relates to the negative findings of the research question. This study has demonstrated that modifications in both associate degree and practical nursing programs are necessary before career mobility opportunities through nursing education are readily and widely available in Oklahoma nursing programs. The differences, while significant, are small. Modification or articulation of the programs would not appear to be a major undertaking.

The tenth conclusion relates to the delivery of health services. While health care in American may no longer be a crisis, it remains a

serious problem. Career mobility opportunities through nursing education appear to be an effective and efficient means of developing health manpower in Oklahoma. When considered as a single group, twenty-two of the twenty-six practical and associate degree nursing programs participating in this study were not significantly different on mean achievement scores in the basic fundamentals of nursing. It would appear that some programs could be initiated at the present time. While only 2.7 percent of the P.N. students indicated they would continue their education full-time on graduation, 51 percent planned to re-enter school after working awhile. If only half of these students entered associate degree nursing programs with advanced standing and successfully completed the programs one semester sooner, a savings of an approximate equivalent of 28 school years would result. This supposition could be carried further; however, the impact on health manpower and health care services would appear to be obvious.

Implications

There are six implications which became increasingly clear as alternate explanations for the negative results of the study were sought.

First, there is need to enhance the quality of health care in Oklahoma by providing the ingredients necessary for successful preparation of vocational and technical practitioners. The findings of this study indicate a portion of the associate degree and practical nursing programs, especially those in the more rural areas, may be hindered in achieving their educational objectives, perhaps by factors beyond their control. The findings suggest further that the primary controlling agencies must assume the responsibility for providing an environment conducive to

learning.

Second, special effort should be made to remove the barriers to career development through upward and lateral mobility. This appears to be an effective and efficient means of increasing the numbers of/and enhancing the quality of services delivered by health personnel. One issue needing attention is that of the vocational versus the technical nurse. Even among educators these nurses are often seen as different types of nurses rather than as different levels of practice. This serves as a barrier which greatly complicates the transferability and acceptance of credit from one type program to another. The development of clear, concise and operationally stated objectives for courses in nursing is one means of reconciling these differences.

Third, it would appear that more emphasis must be placed on the recruitment of capable students with relevant experience and education into the associate degree and practical nursing programs. The NLN Report (1972) supporting the concept of open curriculum states:

Nursing education should provide for student mobility according to the individuals ability, changing career goals and changing aspirations. The Board recognizes the potential of mobility from other health related fields.

These students have already demonstrated an interest and a measure of success in developing a career. It would appear reasonable to expect fewer student dropouts and more successful completions of the advanced program.

Fourth, improvements in the educational efficiency of producing health manpower could be made. Duplication of course offerings in nursing and health related programs is expensive not only in terms of finances but in manpower resources as well. The core curriculum is one means of

accomplishing this. The desirability of combining common aspects of curricula for more efficient course offerings would appear to be obvious; however, such an approach is not universally accepted. Lack of support for the concept may be summarized in Moore's (1972) statement:

The fact that a number of highly visible tasks are performed by untrained as well as highly-educated nurses establishes the fact that these tasks are held in common, not that they are the pith, heart or core of nursing.

Even so, there are many examples of successful programs which have been developed and implemented using the core concept (Wallenstein, 1968; Holloway, 1969; Wood, 1970; Kintgen, 1970; Drage, 1971; Gebhardt, 1973; Klopfenstein, 1973 and others). It seems reasonable to assume there is a core of content related to health science, including nursing, which would serve as a base for structuring more effective and efficient programs in Oklahoma nursing education.

Fifth, there is need in Oklahoma for the development and demonstration of nursing education programs which recognize and credit previous education and experience. There is evidence that economic necessity exerts a selective influence on career choice of students beyond individual ability, aspirations and goals. The high cost of education in terms of finances and time appears to be an obstacle in the development of health manpower. To insure optimum utilization of manpower and resources and to afford each individual an opportunity to maximize his or her potential, unnecessary impediments to career mobility should be removed. Along with others, McLeod (1969) recommends that all possible effort be made to:

break down existing barriers in the requirements of nursing education programs that unnecessarily (sic) restrict easy upward mobility from one type and/or level of nursing education to another.

Advanced placement through achievement testing is one means of facilitating career development. Its use in Oklahoma appears to be severely restricted by the limitations placed on credit for mastery of knowledge and skills. In many cases, granting of advanced standing does not result in a shorter program as the requirement for a certificate or degree is the number of hours or credits earned at the particular school or college.

Sixth, there is need to develop an adequate and acceptable instrument for advanced placement of students in nursing programs in Oklahoma. Blanket credit has been severely criticized in the literature, and it appears highly unlikely that such a method would be acceptable to nursing educators in Oklahoma. Findings of a previous study (Ward and Jamison, 1973) indicate that conceptually the granting of credit for previous knowledge and experience through examination is a valid means for advanced placement of students in nursing programs. There appears to be general agreement that (N.Y. n.d.):

Learning at a level comparable to college study takes place in a wide variety of situations. But very often the full benefit of such learning cannot be realized for personal and professional advantage unless official college credit is received.

Proficiency examinations designed to measure an individual's competency to perform certain jobs at certain levels, a competency made up of knowledge and skills, seem to be the most widely accepted evaluation instruments. There appears to be general agreement to the notion that theoretical knowledge is basic to competency in performance skills.

Limitations and Suggestions for Further Study

The Mesa College Proficiency Examination had not previously been used with nursing students in Oklahoma programs. No data were available

to determine the portion of items which might favor either the practical or the associate degree nursing students. It is possible that this instrument could have favored either the practical or the associate degree nursing students in Oklahoma. Further analysis of data concerning the test items would be helpful.

The definition of rural-urban location was an arbitrary consensus based on educated observation rather than on research data. It remains to be seen whether the variety of clinical experience provided for the student influences achievement in theoretical knowledge. An investigation of this variable could provide insight into the significant difference found between the rural-urban location of the program.

Only the major program characteristics of setting, controlling agency, location and scope of offerings were considered. The question may be asked how characteristics such as faculty qualification, faculty tenure, resource availability, length of operation of program, facility, equipment and general support of the program in the community were related to the students' achievement.

In conclusion, a question may be asked concerning the program respondents. This study had as its purpose an investigation of the natural setting of the practical and associate degree nursing programs in Oklahoma, and its primary concern was the actual achievement in the programs as they operated in reality. Information on these respondents, however, could be very valuable in determining relationships between the program operation and student achievement. This suggests the possibility of a comparative study of student characteristics relating to achievement in practical and associate degree nursing programs in Oklahoma.

SELECTED BIBLIOGRAPHY

- Allyn, Nathaniel C. 1969. "College Credit by Examination." Nursing Outlook. April. 17;44-46.
- Altman, Stuart H. 1972. Present and Future Supply of Registered Nurses. U.S. Department of Health, Education, and Welfare, Public Health Service, Bethesda, Maryland. DHEW Publication Number (NIH) 73-134.
- American Journal of Nursing. 1971. "Extending the Scope of Nursing Practice," Report to the Secretary of Health, Education, and Welfare from the Secretary's Committee to Study Extended Roles for Nurses. December. 71(12):2346-2351.
- American Nurses' Association. 1965. Educational Preparation for Nurse Practitioners and Assistants to Nurses. A Position Paper, New York: the Association.
- Ashkenas, Thais Levberg. 1973. Aids and Deterrents to the Performance of Associate Degree Graduates in Nursing, NLN, New York: Publication No. 23-1465.
- Boehret, Alice C. 1966. "The First Rung: The Challenge Examination for Licensed Practical Nurses in Associate Degree Programs." Bedside Nurse. September. 3:19-20.
- Boyle, Rena E., et al. 1966. Baccalaureate Education for the Registered Nurse Student. Proceedings of a Department of Baccalaureate and Higher Degree Program Conference, St. Louis, Missouri. New York: National League for Nursing.
- Brody, Adele Cutler. 1969. Career-Oriented Training: A Necessary Step Beyond Job Training. (unpublished). New Career Training Laboratory, New York University, New York.
- Brown, Esther Lucile. 1948. Nursing for the Future. New York: Russell Sage Foundation.
- _____. 1970. Nursing Reconsidered: A Study of Change. Part 1. Philadelphia: J. B. Lippincott Co.
- _____. 1972. "Decisions and Directions: Determinations no Longer to be Deferred." The Journal of Nursing Education. McGraw-Hill, Inc., November. 11(4)2 and 3.

- Bullough, Bonnie. 1972. "You Can't Get There From Here: Articulation in Nursing Education." The Journal of Nursing Education. November. 11(4):4-10.
- Bullough, Bonnie and Bullough, Vern. 1971. "A Career Ladder in Nursing: Problems and Prospects." American Journal of Nursing. October. 71(10):1938-1943.
- Burnside, Helen. 1969. "Practical Nurses Become Associate Degree Graduates." Nursing Outlook. April. pp. 17-47.
- Buros, O. K., ed. 1972. "Tests and Reviews: Vocation-Specific: Nursing." Seventh Mental Measurements Yearbook. N.J.: Gryphon Press, 2:1517.
- Campbell, Donald T. and Stanley, Julian C. 1963. Experimental and Quasi-Experimental Designs for Research. Skokie, Ill.: Rand McNally and Co.
- Carlson, Dale C. 1967. A Descriptive and Correlational Study of Variables Related to Success in the San Bernadino Valley College Two-Year R.N. Program., (unpublished report).
- Cather, Chater, Wilson, Holly, Waters, and Verle. 1973. Differentiation Between Technical and Professional Nursing--An Annotated Bibliography. NLN. The League Exchange, No. 97. Publication Number 23-1458.
- Dasco, Michael M. and Konheim, Beatrice G. 1968. Feasibility Study on the Proposed Hunter College Institute of Health Science. University of New York, Hunter College. May.
- DeChow, Georgeen H., Malmstrom, Vivian, and Ogden, Ruth. 1968. "Education for Registered Nurses: A Comparative Analysis of Theory and Clinical Practice." Journal of American Medical Association. March. 203(12):147-149.
- Drage, Martha O. 1971. "Core Courses and a Career Ladder." American Journal of Nursing. July. 71(7):1356-1358.
- Dundas, Susan. 1968. "The RN in the Baccalaureate Program." Nursing Outlook. July. 16:51-53.
- Egelston, E. Martin. 1970. Exploratory Investigation of Career Mobility Ladders for Health Personnel. (unpublished paper). Chicago: American Hospital Association. March.
- Egelston, Martin E. and Kinser, Thomas. 1970. "Licensure of Hospital Personnel." Hospitals. November 16.
- Ferguson, George A. 1959. Statistical Analysis in Psychology and Education. 2nd ed., New York: McGraw-Hill.

- Forni, Patricia. 1973. Career Mobility Survey Report. Midwest Continuing Professional Education for Nurses. January.
- Fox, David J. 1969. The Research Process in Education. New York: Holt, Rinehart and Winston, Inc.
- Fullerton, Bill J. et al. 1966. The Identification of Common Courses in Paramedical Education. Arizona State University, College of Education, Tempe, Arizona. July.
- Gebhardt, Susan A. 1973. "A New Model for Nursing Education." Nursing Outlook. April. 21(4):252-255.
- Gilpatrick, Eleanor. 1968. Train Practical Nurses to Become Registered Nurses., A Survey of the PN Point of View. City University of New York, N. Y. Research Foundation. Office of Economic Opportunity, Washington, D.C., June.
- Ginsberg, Eli. 1970. Manpower Agenda for America. New York: McGraw-Hill.
- Goldmark, Josephine. 1923. Nursing and Nursing Education in the United States, Committee for the Study of Nursing Education, Josephine Goldmark, Secretary. New York: Macmillan Co.
- Goldsmith, Katherine L., Jensen, Mary E., Wood, Lucille A., and Zimmerman, Don. 1970. A Study of Nursing Occupations: Registered Nurse, Licensed Vocational/Practical Nurse and Nursing Aide Interim Report., Institute University California Los Angeles, Division Vocational Education. April.
- Grant, E. Louise. 1966. "The RN Writes Her Own Transfer Credit." Nursing Outlook. May. 14(5):39-40.
- Gross, Paul A. and Brown, Robert A. 1967. "Contrasting Job Satisfaction Elements Shown for R.N.'s and L.P.N.'s Hospitals." February. 41:73-92.
- Hangartner, Carl. 1968. "College Credit Equivalency and Advanced Standing." Nursing Outlook. May. 14:30-32.
- Hansen, Margaret M. 1965. "Granting College Credit to R.N. Nurse Students." Nursing Outlook. January. 13(1):53-54.
- Harvey, Lillian H. 1970. "Educational Problems of Minority Group Nurses." Nursing Outlook. 18(9):48-50.
- Holloway, Louis, and Kerr, Elizabeth. 1969. Review and Synthesis of Research in Health Occupations Education, Research Series #39, Ohio State University, Columbus.

- Ingles, Thelma and Montag, Mildred. 1971. "Debate: Ladder Concept in Nursing Education." Nursing Outlook. November. 19(11):726-730.
- Jamison, Patricia. 1971. Career Development for Supportive Nursing Personnel: A Suggested Program Guide. Developed pursuant to a contract with the U.S. Office of Education by State Department of Vocational and Technical Education. Stillwater, Oklahoma. Dr. William Stevenson, Project Director. pp. 1-97.
- Jarratt, Virginia. n.d. "The Open Curriculum." Proceeding from the Seventh Conference of the Council of Baccalaureate and Higher Degree Programs. NLN, New York. Publication #15-1420.
- Johnson, Walter L. 1971. "Status of the Open Curriculum in Nursing." Nursing Outlook. December. 19:12.
- Kadish, Joseph. 1968. "Career Mobility in the Allied Health Occupations." Proceedings of Symposium on Paramedical Education, Evergreen Park, Illinois. American Association of Junior Colleges, Washington, D.C., Public Health Service (HEW).
- Kahler, Carol, et al. 1967. A Guide for Health Technology Program Planning. American Association of Junior Colleges, Washington, D.C.
- Katzell, Mildred. 1970. "Upward Mobility in Nursing." Nursing Outlook. September. 18(9):36-39.
- _____. 1971. "Career Mobility in Nursing--The Issues." An address presented to the 1971 Nursing Education Conference sponsored by the OBNR and NE, the OSNA, and the HOE Division, State Department of Vocational Education. December.
- Katzell, Raymond, Korman, Abraham K., and Levine, Edward L. 1971. Research Report No. 1: Overview Study of the Dynamics of Worker Job Mobility. National Study of Social Welfare and Rehabilitation Workers, Work, and Organizational Contexts. Dept. of Psychology, New York University, (DHEW-RS).
- Kellogg Foundation Study. 1970. The National Commission for the Study of Nursing Education, (see Lysaught, Jerome P., An Abstract for Action).
- Kent, James A. n.d. Series on Experiential Learning Education in the New Careers Program--A New Concept. (unpublished). Number 2, Foundation for Urban and Neighborhood Development, Denver, Colo.
- Kintgen, Jean. 1970. Interpretation of Literature on Career Ladders and Lattices in Health Occupations. Ohio State University, Columbus. September.

- Klopfenstein, Thomas. 1973. Discussion on the Core and Cluster Approach to Allied Health Education. Report on Kellogg Community College "Core" Program. Seminar, Dallas, Texas. Spring.
- Knopf, Lucille. 1972. From Student to RN: A Report of the Nurse Career-Pattern Study. U.S. Department of Health, Education, and Welfare, Bethesda, Maryland. DHEW Publication Number (NIH) 72-130.
- Koffman, Rosalyn and Andruski, Olga. 1971. "From Diploma or Associate Degree to Bachelors' Degree." American Journal of Nursing. November. 71(11):2184-86.
- Kramer, Marlene. 1970. "Credit for Competency." American Journal of Nursing. April. 70(4):793-798.
- Kramer, Sister Mary Albert. 1964. "Artificial Barriers to Progress in Nursing." Nursing Outlook. March. 12(2):54-56.
- Kurland, Norman D. 1966. "College Credit for Off-campus Learning." Nursing Outlook. May. 14:33-35.
- Lande, Sylvia. 1967. A National Survey of Associate Degree Nursing Programs. National League for Nursing. N.Y. Dept. of Associate Degree Programs.
- Lysaught, Jerome P. 1970. An Abstract for Action. New York: McGraw-Hill Book Co.
- _____. 1972. "Eleven Months to Ennistymon!" The Journal of Nursing Education. November. 11(4):46-48.
- Lyton, Edith F. 1967. The Subprofessional: From Concepts to Careers, (unpublished). Convergence Report, Educational and Welfare, National Committee on Employment of Youth. New York.
- Malkin, Evelyn. 1966. "Direction or Dilemma for RN's in Baccalaureate Education?" Nursing Outlook. May. 14:36-38.
- Marshall, Eleanor D. and Moses, Evelyn B. 1971. LPN's 1967: An Inventory of Licensed Practical Nurses. New York: American Nurses Association.
- Mason, Henry R. "Manpower Needs by Specialty." Journal of American Medical Association. March 20. 219(12):1621-1626.
- Matheney, Ruth. 1963. "Differentiating Nursing Levels." In Three Score Years and Ten. New York: National League for Nursing. pp.25-29. (Out of print.)
- _____. 1967. "Technical Nursing Practice." New York: National League for Nursing, Department of Associate Degree Programs. p. 12. (Mimeographed.)

- Matheney, Ruth. 1970. "Can Nursing Live With Open Admissions?" American Journal of Nursing. 70(12):2561-2564.
- McCandless, Boyd R. 1967. Children's Behavior and Development. 2nd Ed. New York: Holt, Rinehart and Winston, Inc.
- McClure, Walter. 1972. "Innovations in Health Care Delivery." Keynote Address Presented at the Mid-Continent Comprehensive Health Planning Educational Program, Dept. of Health Administration, College of Health, Oklahoma City, Oklahoma. Monday, June 12.
- McLeod, Marshall W. 1969. A Study of Nursing in Florida With Implications for Nursing Education: A Final Report. Gainesville, Fla.
- McNerney, Helen. 1972. "The Neighborhood Health Center Model." Presented at An Invitational Conference on Manpower Considerations in the Evolving Maintenance Health Service, arranged and administered by Dept. of Health Administration, College of Health, Oklahoma City, Oklahoma. Tuesday, July 11.
- Meek, Doris A. 1970. Program for Educational Mobility for Health Manpower. Coordinating Council for Education in the Health Sciences for San Diego and Imperial Counties. The Basic Sciences: San Diego, Cal. December 30.
- Millsap, Juanita. 1967. "A Study of Selected Variables in Relation to Commitment to Nursing for the Single Female Student Nurse." Unpublished Master's Thesis, University of Oklahoma, Norman, Okla.
- Moore, Sister Ann Joachin. 1972. "The Ladder and the Lattice." Nursing Outlook. May. 20(5):330-332.
- NLN. 1965. The Nurse Career Pattern Study: Biographical Data Reported by Entering Students. NLN Research and Development, New York, N. Y. Fall.
- _____. 1970. L.P.N. to R.N. Publication No. 38-1401.
- _____. 1972. Report.
- _____. 1973. Department of Associate Degree Programs. Criteria for the Evaluation of Educational Programs in Nursing Leading to an Associate Degree. 3rd. ed., revised. Publication No. 23-1258.
- _____. n.d. Measurement and Evaluation Services. (Leaflet.)
- _____. n.d. Statement on Functions and Qualifications of Practical Nurses. (Pamphlet.)
- New York College Proficiency Examination Program. 1969. Albany, New York: State Education Department.

- New York State Education Department Brochure. n.d. College Proficiency Exams. Albany, New York.
- New York State Nurses Association. 1967. A Blueprint for the Education of Nurses in New York State. Albany, New York. January.
- Oklahoma Board of Nurse Registration and Nursing Education. 1973. Progress Report--Nursing in Oklahoma. April. (Mimeographed.)
- Pennel, M. Y. and Hoover, D. B. 1970. Allied Health Manpower Supply and Requirements: Health Manpower Source Book, Section 21. 1950-1980. Washington, D. C.: Public Health Service Publication No. 263, Government Printing Office.
- Ramphal, Marjorie. 1968. "Needed: A Career Ladder in Nursing." American Journal of Nursing. 68(6):1234-1237.
- Reinertsen, John A. "Health Providers--New Patterns." Paper presented at the Second Annual Meeting of the NLN--AHA held at New York on June 20-22, 1972. Publication No. 20-1481, p. 22.
- Richards, Mary Ann Bruezel. 1972. "A Study of the Differences in Psychological Characteristics of Students Graduating from Three Types of Basic Nursing Programs." Nursing Research. May-June. 21(3):258-261.
- Riddick, Frank A. 1972. "HMO--Hope or Hoax?" Journal of Oklahoma State Medical Association. May. 65:194-199.
- Riessman, Frank. The New Careers Movement Paper presented at the First National Conference on New Careers, San Francisco, January 19-20, 1967. Regional Community Action Training, San Francisco State College. Proceedings for the New Careers Conference, Sponsored by the Office of Economic Opportunity. CAP No. 9227.
- Robbins, Anthony. 1972. "Allied Health Manpower--Solution or Problem?" New England Journal of Medicine. April. 289(17):918-923.
- Roethlisberger, Fritz J. and Dickson, William J. 1970. "Human Relations." Ed. by Oslar Greeley and George A. Miller. Sociology of Organization, Basic Studies. New York: The Free Press.
- Schmidt, Mildred S. and Lyons, William. 1969. "Credit for What You Know." American Journal of Nursing. 1:101-104.
- Shetland, Margaret L. 1970. "This I Believe About Career Ladders, New Careers and Nursing Education." Nursing Outlook. September. 18(9):32-35.
- Skaggs, Kenneth G. 1968. "Mobility in Nursing Careers." Bedside Nursing. Nov.-Dec., pp. 21-23.

- Smith, Dorothy M. 1968. "A Clinical Nursing Tool." American Journal of Nursing. 68(11):2384-2388.
- Somers, H. M. and Somers, A. R. 1961. Doctors, Patients and Health Insurance. Washington, D. C.: The Brookings Institute.
- Stevenson, Gloria. 1971. "Physician's Assistant: Medical Occupation in the Making." Occupational Outlook Quarterly. U. S. Department of Labor, Bureau of Labor Statistics. Summer. 15(2).
- Turner, Robert E. 1968. "Core Curriculum and Mobility." Proceedings of Symposium on Paramedical Education and Career Mobility. Evergreen Park, Ill. June 6-7.
- U. S. Department of Health, Education, and Welfare. 1971. Equivalency and Proficiency Testing: A Survey of Existing Testing Programs in Allied Health and Other Health Fields. Public Health Service, Bureau of Health Manpower Education. U. S. Government Printing Office.
- _____. 1972. Public Health Service (NIH) Division of Nursing. Selected Publications. DHEW Publication No. 72-83. Revised December.
- University of California Los Angeles Project. 1970. The UCLA Allied Health Professions Project: The Background, The Programs, The People. University of California Los Angeles. January.
- Voss, Charlotte. 1963. "Variables Associated With Educational Achievement." Terminated Research Grants Supported in the Field of Nursing. Washington, D. C.: Division of Nursing, Public Health Service, Department of Health, Education, and Welfare, Grant No. GN6145. April.
- Waddle, Frances I. 1965. Planning for Nursing Education: A Study of Current Resources and Future Needs. Oklahoma City: Oklahoma League for Nursing, Oklahoma State Nurses' Association. August. (Mimeographed preliminary report.)
- _____. 1973. Nursing Needs in Oklahoma During the '70's. Oklahoma City, Oklahoma: Oklahoma Board of Nurse Registration and Nursing Education. Spring. (Mimeographed report.)
- Walker, Dorothy, and Hungler, Bernadette. 1968. "A Proposed Approach to the Education of Nurses." Nursing Outlook. 16(8):24-26.
- Wallenstein, R. J. 1968. Knowledges Commonly Useful in Twelve Allied Health Occupations. Report No. 25. Final Report. Washington State Coordinating Council for Occupational Education, Olympia, Washington State University. Pullman, Department of Education. August.

- Ward, Sharon and Jamison, Patricia. 1973. A Feasibility Study for Career Mobility in Oklahoma. Developed under the Direction of Dr. Don Frazier, Oklahoma State Department of Vocational and Technical Education, Stillwater, Oklahoma. Spring.
- Wood, Mary Ellen. n.d. "Upgrading Nurses Aides to LPN's/LVN's". California Board of Vocational Nurse and Psychiatric Technician Examiners, Sacramental. (Unpublished.)
- Wood, Lucile A. 1970. The Nursing Program in the UCLA Allied Health Professions Projects. Summary Report. California University, Los Angeles. April.
- _____. 1972. Nursing Skills for Allied Health Services. Philadelphia: W. B. Saunders Co. Vols. 1 and 2.
- Yates, Judith A. 1970. "Breakthrough in Minnesota." American Journal of Nursing. March.

APPENDIXES

APPENDIX A

COMMITTEE

Mrs. Lynn Bales, R.N.
Coordinator Health-Related
Career Programs
South Oklahoma City Jr. College

Mrs. Carolyn Briggs, R.L.T.
Director-Health Institute
Tulsa Junior College

Mrs. Betty Chase, R.N.
Nursing Consultant
Continuing Education Center
Health Studies Department

Mrs. Doris Golab, R.N.
Health Occupations Training
Program, MDTA
University of Oklahoma Health
Science Center

Mrs. Delores Kruger, R.N.
Chairman, Nursing Department
Cameron College

Mrs. Peggy McClain, R.N.
Coordinator, P.N. Programs
Oklahoma City Public Schools

Mrs. Juanita Millsap, R.N.
Assistant Professor
Oklahoma Baptist University

Dr. Neila Poshek, R.N.
Chairman, Department of Nursing
Tulsa University

Dr. William Stevenson
Assistant State Director
Oklahoma State Department
Vocational-Technical Education

Miss Frances Waddle, R.N.
Executive Director
Oklahoma Board of Nurse Regis-
tration and Nursing Education

APPENDIX B

Name _____ Student No. _____

School _____ A.D. _____ P.N. _____

(Check One)

1. Your educational background includes?

- | | |
|--|---|
| ☐ Graduation from High School | ☐ Some College |
| ☐ G.E.D. | ☐ College Graduate |
| | ☐ None of These |

2. Your highest level of nursing education program completed?

- | | |
|---|--|
| ☐ Nursing Assistant or Orderly | ☐ Licensed Practical Nursing |
| ☐ Waivered Practical Nursing | ☐ Associate Degree Registered Nursing |
| | ☐ None of These |

3. What were you doing before you first enrolled in this Program?

- | | |
|--|---|
| ☐ Employed | ☐ Unemployed |
| ☐ Going to School | ☐ Other |
| ☐ Military | ☐ Employed and Going to School |

4. If your reply to Question 3 was "Employed", what was your job category?

- | | |
|---|--|
| ☐ Work in a Nursing Occupation | ☐ Two Years or More |
| ☐ Work in other Health or Health-Related Occupations | ☐ Two Years or More |
| ☐ Work in a job unrelated to Health | ☐ Two Years or More |
| ☐ Not applicable | ☐ Not applicable |

5. Principal sponsor of your present education program?

- | | |
|---------------------------------------|---|
| ☐ Self | ☐ Vo-Technical |
| ☐ Student Loan | ☐ Parents |
| ☐ Scholarship | ☐ Voc-Rehabilitation |
| ☐ WIN | ☐ Other |
| ☐ BIA | ☐ Veteran or GI |

6. Who most influenced you to enroll in this Program?

- | | |
|---|---|
| ☐ Parents | ☐ High School Counselor |
| ☐ Relatives (other) | ☐ High School Academic Teacher |
| ☐ Friends | ☐ Other |
| ☐ Employer | ☐ Self |
| ☐ Vocational Teacher | |

APPENDIX B--Continued

7. When you complete your present program, will you?

- ☐ Continue your formal education full time
- ☐ Work
- ☐ Work then continue your formal education
- ☐ Work part-time and continue your formal education
- ☐ None of the above

8. Should you continue your education, would you enter?

- ☐ An advanced Nursing Program
- ☐ A Health-Related Program (Please specify, _____)
- ☐ A field unrelated to Health

APPENDIX C

STUDY PARTICIPANTS

This writer wishes to acknowledge the programs participating in this study and to express appreciation to those individuals making this study possible. Special appreciation goes to those students and instructors volunteering their time and effort. A listing of the programs by location follows:

PRACTICAL NURSING

Ardmore

Southern Oklahoma AVTS*
Mr. Jack Stone, Director
Mrs. Geraldine Toti,
Coordinator-Instructor

Enid

O. T. Autry, AVTS
Mr. Jewel Ridge, Director
Mrs. Norma Seymour
Coordinator-Instructor

Bartlesville

Tri-County AVTS
Mr. Ken Phelps, Director
Mrs. Mildred Kurtz
Coordinator-Instructor

Lawton

Great Plains AVTS
Mr. Milton Worley, Director
Mrs. Edna Hille
Coordinator-Instructor

Byng

Byng Public Schools
Mr. Marvin Stokes, Superintendent
Mrs. Lou Oats
Coordinator-Instructor

Miami

Northeastern Okla. A. & M. College
Dr. D. D. Creech, President
Mrs. Dorothy Hall
Coordinator-Instructor

Burns Flat

Western Oklahoma AVTS
Dr. C. C. Holcomb, Director
Mrs. Jean Hanchey
Coordinator-Instructor

Midwest City

Midwest City Public Schools
Mr. J. E. Sutton, Superintendent
Mrs. Ruth Killough
Coordinator-Instructor

Drumright

Central Oklahoma AVTS
Mr. John Hopper, Director
Mrs. Jan Harris
Coordinator-Instructor

Muskogee

Indian Capital AVTS
Mr. Gene Beach, Director
Mrs. Stella Wetz
Coordinator-Instructor

El Reno

Canadian Valley AVTS
Mr. J. R. Gililand, Director
Mrs. Margaret Brock
Coordinator-Instructor

Norman

Norman Public Schools
Mr. Lester Reed, Superintendent
Mrs. Mary Randall
Coordinator-Instructor

*Area Vocational-Technical School

APPENDIX C--Continued

Oklahoma City

Oklahoma City Public Schools
 Dr. Si Bowlan, Director
 Adult Education
 Mr. Wesley Driggs, Director
 Mrs. Margaret McLain
 Coordinator-Instructor

Tulsa

Tulsa Public Schools
 Dr. Gordon Cawelti, Superintendent
 Adult Education
 Mr. George Marsh, Director
 Mrs. Pauline Hurlburt
 Coordinator-Instructor

Wilburton

Mr. Bill Powers, Director
 Administrative Offices
 Mrs. Doris Smith
 Coordinator-Instructor
 All Sites
 Poteau/Talahina
 Poteau Site
 Mrs. Doris Smith
 Coordinator-Instructor

Talihina Site
 Mrs. Gail Watt
 Instructor

McAlester Site
 Mrs. Betty Hammond
 Instructor

Woodward

Woodward Public Schools
 Dr. Joe Glover, Superintendent
 Miss Sue Mitchell
 Coordinator-Instructor

ASSOCIATE DEGREE PROGRAMS

Bacone (Muskogee)

Bacone College
 Dr. Gerald Holstine, President
 Mrs. Billie Tower
 Chairman, Nursing Department

Tishomingo

Murray State College
 Dr. Clyde Kendell, President
 Mrs. Winnie Dunham
 Chairman, Nursing Department

Lawton

Cameron College
 Dr. Don Owen, President
 Mrs. Delores Krueger
 Chairman, Nursing Department

Tonkawa

Northern Oklahoma College
 Dr. Edwin Vineyard, President
 Mr. Tom Harned
 Chairman, Allied Health

Oklahoma City

Oklahoma State University
 Technical Institute
 Dr. Philip P. Chandler, Director
 Mr. Herman Riesenber
 Chairman, Nursing Department

Tulsa

Tulsa Junior College
 Dr. Al Philips, President
 Mrs. Marty Doyle
 Chairman, Nursing Department

Seminole

Seminole Junior College
 Mr. Elmer Tanner, President
 Miss Gladys Scott
 Chairman, Department of Nursing

Wilburton

Eastern Oklahoma State College
 Dr. James Miller, President
 Mrs. Joy Regaldo
 Chairman, Nursing Department

APPENDIX D

School Name _____

PARTICIPATING SCHOOL

I understand that this testing is a part of a research project being carried out with the cooperation of the State Department of Vocational Education Research Division and the Health Occupations Education Division to determine the feasibility of developing a Career Mobility Program in Nursing and the Health Related Occupations. This testing phase is designed to initiate an assessment of an evaluation instrument and to provide data relating to the problem of Mrs. Jamison's doctoral dissertation. All data are to be held in the strictest confidence. No comparison will be made that could in any way identify an individual or a school. Each school may get a report of the individual school data on written request, however, individual scoring will be by number only. I am aware that this can be reported as participation in research on our school report.

Director of ProgramI would like a copy of the research findings report. _____
(check here)I would like an individual report of my school's data. _____
(check here)

APPENDIX E

APPENDIX E-1

TEST ADMINISTRATION PROCEDURE

1. Lay materials on desk in room where testing is to take place.
2. Check for test papers, pencils, erasers, biographical sheets, score sheets and instruction sheets.
3. Lay out guide sheets for proper sorting of papers when testing is finished by student.
4. Stay occupied as students assemble.
5. When students are assembled, silently pass out biographical packets face down to each student. (Quietly observe that these sheets are left face down.) When all have packets.....
6. Proceed to the front of the room and proceed with: #1.
"FOR THE TEST ADMINISTRATOR". (If there is an assistant, introduce at this time.)
7. When you have completed the last sentence, "Now, would you please turn the papers you have so that you are reading the sheet that asks for your name, your school, and so-forth.", allow for, but do not solicit questions. In any event, keep this period limited.
8. Proceed to INITIATING DATA GATHERING PROCESS, #II.
Note: Papers are face-up with space for students name, number, etc.
9. When the biographical data sheets are completed and the student has turned to the INSTRUCTIONS TO THE PARTICIPANT, III, read with the student to the last sentence: "If there are no further questions, you may begin." (Answer questions, but do not solicit. Move on as quickly as everyone understands.) If there are no papers in the

APPENDIX E-1--Continued

packets, instruct the students to turn the instruction sheet over and use as a guide on the score sheet. If papers are included, instruct them in the use as a guide.

10. Monitor as little as possible. Answer only necessary questions. Move quietly among the students.

APPENDIX E-2

FOR THE TEST ADMINISTRATOR

(If other than the researcher, please identify that this test is being administered for Mrs. Jamison,)

Hello. I am _____

of the Health Occupations Division, State Department of Vocational and Technical Education. Since each of you will be leaving this room as you finish the test, I would like to start out by thanking you and your instructors for being here, for giving of your time and effort to this research project, and for the contribution you will be making to nursing education in Oklahoma.

Your instructor may have already informed you of my purpose here this (morning - afternoon). Let me state it again, briefly.

This testing is a part of a research project being carried out with the cooperation of the State Department of Vocational Education Research Division and the Health Occupations Education Division to determine the feasibility of developing a Career Mobility Program in Nursing and the Health Related Occupations. This testing phase is designed to initiate an assessment of an evaluation instrument and to provide data relating to the problem of my (Mrs. Jamison's) doctoral dissertation.

Briefly, the statement of that problem is:

Do graduates of practical nursing programs in Oklahoma have adequate foundation to continue with advanced standing in associate degree nursing programs without repetition of equivalent course content?

All data are to be held in the strictest confidence. Your test response sheets and biographical data sheets will be sealed in these envelopes before leaving this room. Only this researcher (Mrs. Jamison)

APPENDIX E-2---Continued

will have access to the envelope containing the names. No comparisons will be made that could in any way identify an individual or a school. Each school may get a report of the individual school data on written request, however, individual scores may be requested by you as a participant by special arrangement. The only purpose of the cross name-number procedure is to provide for future research on follow-up should this be desirable.

Again, thank you for participating in this research project. I believe that you are making a truly valuable contribution to planning for nursing education in Oklahoma.

Now would you please turn the papers you have so that you are reading the sheet that asks for your name, your school, and so-forth. (Answer, but do not solicit questions.) So that we will proceed at the same speed, and to be sure that there are no misunderstandings as to meaning, we will complete this sheet together.

Check your number in the right hand corner to see that it is the same as the number on the score sheet--the red one on the bottom. Take your pencil and lightly trace the numbers.

Now back to the top sheet--write your first name, middle initial and last name. Write the name of your school and check the proper type school--A.D.--P.N.

Now we will read and check one response in each of the eight (8) questions below. (Read with students as they check.) When completed, place this sheet behind the red scoring sheet and read with me the INSTRUCTIONS TO THE PARTICIPANT.

APPENDIX E-3

INSTRUCTIONS TO THE PARTICIPANT

This is an examination in the Fundamentals of Nursing I. There are 80 items of multiple choice response. There is one best response.

This is not a timed test, however, it is best to first read the question, choose and record the response of your choice, then quickly leave it for the next question. Should you choose to change the response, please erase carefully and completely. About two hours should be sufficient to complete the test items.

This is an example question:

Select the ONE best answer.

If a patient complains of bleeding, spongy gums, the nurse should review the diet for adequate intake of which nutrient:

1. vitamin C
2. protein
3. calcium
4. vitamin D

Then mark under the number of your choice: (Number 1 is the correct response.)

1	2	3	4	5
—	—	—	—	—

Remember, if you wish to change an answer, be sure to erase the first mark well. Mark under one response only for each question.

If you have questions please ask them at this time as questions cannot be answered after testing starts. When you have completed the test, please check to see that all 80 items have been recorded, then bring all papers to me.

If there are no further questions, you may begin.

APPENDIX F -- TABLES

APPENDIX F

TABLE 19.--Nursing Education Categories Collapsed--Comparison of Rural and Urban Nursing Programs by Highest Level of Nursing Education Completed

Highest Level of Nursing Education Completed	Rural		Urban	
	Number	Percent	Number	Percent
Nursing Assistant or Orderly	213	51.7	167	50.9
P.N. or Higher	15	03.6	22	06.7
None of These	184	44.7	139	42.4
Total	412	100.0	328	100.0
N = 740	Chi-square = 3.6742		.10 < p < .20	

TABLE 20. --Comparison of Rural and Urban Nursing Programs by Students' Status When Enrolled

Status When Enrolled	Rural		Urban	
	Number	Percent	Number	Percent
Employed	232	56.3	184	56.1
Going to School	71	17.2	62	18.9
Military	0	00.0	4	12.0
Unemployed	51	12.4	30	9.1
Other	48	11.7	36	11.0
Employed and Going to School	10	02.4	12	03.7
Total	412	100.0	328	100.0
N = 740	Chi-square = 8.0567		.10 < p < .20	

APPENDIX F--Continued

TABLE 21.--Comparison of Rural and Urban Nursing Programs by Employed Students' Job Category

Job Category	Rural		Urban	
	Number	Percent	Number	Percent
Nursing and Other Health Related	140	77.2	147	75.0
Unrelated to Health	56	22.8	49	25.0
Total	196	100.0	246	100.0
N = 442	Chi square = .1900		.50 < p < .70	

TABLE 22.--Comparison of Rural and Urban Nursing Programs by Employed Students' Job Tenure

Job Tenure	Rural		Urban	
	Number	Percent	Number	Percent
Two or More Years	139	56.5	117	59.7
Less Than Two Years	107	43.5	79	40.3
Total	246	100.0	196	100.0
N = 442	Chi-square = 0.3339		.50 < p < .70	

APPENDIX F--Continued

TABLE 23.--Influencer Categories Collapsed--Comparison of Rural and Urban Nursing Programs by Students' Influencer to Enter Program

Influencer	Rural		Urban	
	Number	Percent	Number	Percent
Parents	276	67.0	198	60.4
Relatives	24	05.8	32	09.8
Friends	19	04.6	16	04.9
Employer	38	09.2	36	11.0
Vocational Teacher	20	04.9	17	05.2
High School Counselor	11	02.7	9	02.7
High School Academic Teacher	2	00.5	4	01.2
Other	22	05.3	16	04.9
Total	412	100.0	328	100.0
N = 740				
Chi-square = 6.9005 .30 < p < .50				

TABLE 24.--Comparison of Rural and Urban Nursing Programs by Students' Future Plans

Future Plans	Rural		Urban	
	Number	Percent	Number	Percent
Continue Education Full Time	11	02.7	16	04.9
Work	214	51.9	139	42.4
Work and Continue Education	134	32.5	122	37.2
Work Part Time and Continue Education	46	11.2	43	13.1
None of the Above	7	01.7	8	02.4
Total	412	100.0	328	100.0
N = 740				
Chi-square = 8.1610 .05 < p < .10				

APPENDIX F--Continued

TABLE 25.-- Advanced Education Categories Collapsed--Comparison of Rural and Urban Nursing Programs by Students' Choice of Advanced Education Field

Field of Continuing Education	Rural		Urban	
	Number	Percent	Number	Percent
Advanced Nursing	360		287	87.5
Other Health Related Field	31		23	07.0
Field Unrelated to Health	07		8	02.4
Undecided	14		10	03.1
Total	412		328	100.0
N = 740	Chi-square = .6279		.80 < p < .90	

TABLE 26.--Comparison of Practical and Associate Degree Nursing Programs by Employed Students' Job Category

Job Category	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Nursing and Other Health Related	218	76.5	119	75.8
Unrelated to Health	67	23.5	38	24.2
Total	285	100.0	157	100.0
N = 442	Chi-square = .0023		.95 < p < .98	

APPENDIX F--Continued

TABLE 27.--Comparison of Practical and Associate Degree Nursing Programs by Employed Students' Job Tenure

Job Tenure	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Two or More Years	155	54.4	101	64.3
Less Than Two Years	130	45.6	56	35.7
Total	285	100.0	157	100.0
N = 442		Chi-square = 3.71	.05 < p < .10	

TABLE 28.-- Advanced Education Categories Collapsed--Comparison of Practical and Associate Degree Nursing Programs by Students' Choice of Advanced Education Field

Field of Continuing Education	P.N.		A.D.N.	
	Number	Percent	Number	Percent
Advanced Nursing	399	89.3	248	84.6
Unspecified Health Related Field	26	05.8	28	9.6
Field Unrelated to Health	7	01.6	8	2.7
Undecided	15	03.3	9	3.1
Total	447	100.0	293	100.0
N = 740		Chi-square = 5.052	.10 < p < .20	

APPENDIX G -- SCHEFFÉ F' VALUES

TABLE 29.--Scheffe $\underline{F}$ ' Values for Practical Nursing Programs

U	R	R	R	U	R	U	R	R	R	R	R	R	R	R	U	U	R
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	.89	16.69	7.67	.05	3.01	.19	15.57	.19	.12	4.00	.76	2.27	10.82	3.97	<u>37.55*</u>	7.40	2.03
2		17.05	9.36	.92	5.05	.17	16.77	.16	1.21	5.81	2.01	4.02	12.19	5.78	<u>32.80*</u>	8.70	3.83
3			.76	10.88	4.49	11.99	.07	14.63	11.95	2.93	4.69	4.74	.24	3.46	2.06	3.16	7.87
4				4.98	1.20	7.64	.42	7.52	5.28	.84	1.74	1.40	.14	.74	5.13	.45	2.66
5					1.59	.32	9.87	.32	.00	2.33	.38	1.19	7.11	2.22	24.29	3.87	.85
6						3.40	3.68	3.35	1.63	.10	.18	.01	2.31	.05	13.88	.34	.23
7							13.86	.00	.48	4.33	1.20	3.08	10.28	4.27	<u>30.48*</u>	6.82	2.46
8								13.58	10.90	2.26	3.97	3.94	.06	2.73	3.12	2.41	6.90
9									.47	4.27	1.20	2.71	10.11	4.20	<u>29.81*</u>	6.66	2.41
10										2.41	.34	1.19	7.65	2.31	<u>27.48*</u>	4.27	.85
11											.46	.19	1.33	.00	10.33	.03	.66
12												.09	1.01	.38	11.92	.83	.00
13													2.55	.13	13.89	.49	.10
14														1.63	3.58	1.28	4.44
15															11.79	.09	.56
16																12.72	21.75
17																	1.50

$$\underline{F}' = (1.49)(17) = 25.33$$

TABLE 30.--Scheffé $\underline{F}'$ Values for Associate Degree Nursing Programs

1	4.40	8.16	.28	11.87	4.76	<u>34.59*</u>	<u>25.25*</u>
2		.89	6.90	2.81	.28	<u>17.73*</u>	<u>14.14*</u>
3			11.18	.55	.09	9.46	9.16
4				<u>15.21*</u>	6.83	<u>39.77*</u>	<u>28.74*</u>
5					.76	4.73	5.81
6						8.14	8.74
7							.73

$$\underline{F}' = (7)(1.72) = 12.04$$

TABLE 31.---Collapsed Columns--Scheffe' F' Values for All Programs

U	U	R	U	U	R	R	R	U	R		R	R	U	U	R
	2	3	4	5	6	7	8	9	10		22	23	24	25	26
1	5.14	8.94	.31	12.99	5.21	<u>37.84*</u>	27.62	30.61	25.63		1.07	6.88	1.15	7.33	15.29
2		.98	7.56	3.15	.31	19.40	15.47	13.53	12.90		.34	.88	9.21	.55	4.12
3			12.24	.60	.07	10.36	10.03	6.16	7.46		1.64	.01	13.76	.05	1.01
4				16.65	7.48	<u>43.51*</u>	31.45	<u>36.02*</u>	29.71		2.15	9.39	.31	10.31	19.28
5					.84	5.18	6.36	2.38	4.08		3.42	.30	18.0	.93	.04
6						8.91	9.57	5.50	7.10		.89	.11	9.14	.01	1.23
7							.80	.73	.04		14.09	6.62	<u>42.11*</u>	11.22	4.58
8								2.26	.40		14.01	7.75	<u>32.70</u>	10.74	5.83
9									.75		10.15	3.72	<u>35.22*</u>	6.94	1.91
10											11.43	5.42	<u>30.76</u>	8.17	3.59
11											.23	3.25	1.93	2.97	7.39
12											.13	.70	2.30	.43	2.49
13											6.67	2.08	22.78	3.63	.80
14											2.17	.06	13.02	.32	.22
15											9.64	4.00	28.59	6.40	2.31
16											.06	2.57	2.93	2.26	6.45
17											9.49	3.94	27.96	6.25	2.27
18											7.17	1.17	25.78	4.00	.80
19											1.25	.01	9.69	.03	.63
20											2.64	.36	11.18	.79	.01
21											2.40	.13	13.03	.47	.10
22												1.54	3.36	1.20	4.17
23													11.06	.09	.53
24														11.93	20.40
25															1.41

Columns 11 - 21 no significances of difference.