



Comparison of State Board achievement in two schools of nursing utilizing different curriculum designs
by Sharon Rae Hovey

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
Montana State University
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Abstract:

The purpose of the study was to determine if differences exist, as measured by five subtests of the State Board Test Pool Examinations in nursing, in the achievement of graduates from two nursing programs each utilizing a different structural design to curriculum. The population included all students graduating from each of the schools during the years 1969, 1970, 1971, 1972, and 1973. A total population of 297 students from School I, the subject centered curriculum, and 414 students from School II, the integrated core curriculum, were included in the study.

The statistical hypotheses were that there is no difference between the two groups on any of the state board examination areas during any of the years investigated with either of the covariates studied. The analysis of covariance statistical design was used to equate the two curriculum groups by use of each student's college cumulative grade point average and college entrance examination stanine score as the covariates.

Some of the null hypotheses were rejected and some were not rejected in medical nursing, surgical nursing, obstetrical nursing, and nursing of children. In each case of the rejected null hypotheses School I achieved the higher scores. Some of the null hypotheses were also rejected and some were not rejected in psychiatric nursing. School II achieved the higher scores in the majority of rejected null hypotheses. In School II psychiatric concepts are integrated in addition to a subject centered type of psychiatric experience. The other state board examination areas in School II are integrated, with no specialized experience.

Consideration must be given to the subject centered arrangement of state board examination. All of the knowledge and abilities of the graduate, from the integrated core, curriculum may not be evaluated by a standardized test constructed in a subject centered manner.

The greatest benefit to graduates may be provided by a curriculum which integrates a common core of nursing knowledge and experience in addition to providing a brief subject centered experience in each area of nursing.

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Date May 20th, 1975

COMPARISON OF STATE BOARD ACHIEVEMENT IN TWO SCHOOLS OF
NURSING UTILIZING DIFFERENT CURRICULUM DESIGNS

by

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A thesis submitted in partial fulfillment
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ABSTRACT

The purpose of the study was to determine if differences exist, as measured by five subtests of the State Board Test Pool Examinations in nursing, in the achievement of graduates from two nursing programs each utilizing a different structural design to curriculum. The population included all students graduating from each of the schools during the years 1969, 1970, 1971, 1972, and 1973. A total population of 297 students from School I, the subject centered curriculum, and 414 students from School II, the integrated core curriculum, were included in the study.

The statistical hypotheses were that there is no difference between the two groups on any of the state board examination areas during any of the years investigated with either of the covariates studied. The analysis of covariance statistical design was used to equate the two curriculum groups by use of each student's college cumulative grade point average and college entrance examination stanine score as the covariates.

Some of the null hypotheses were rejected and some were not rejected in medical nursing, surgical nursing, obstetrical nursing, and nursing of children. In each case of the rejected null hypotheses School I achieved the higher scores. Some of the null hypotheses were also rejected and some were not rejected in psychiatric nursing. School II achieved the higher scores in the majority of rejected null hypotheses. In School II psychiatric concepts are integrated in addition to a subject centered type of psychiatric experience. The other state board examination areas in School II are integrated with no specialized experience.

Consideration must be given to the subject centered arrangement of state board examination. All of the knowledge and abilities of the graduate from the integrated core curriculum may not be evaluated by a standardized test constructed in a subject centered manner.

The greatest benefit to graduates may be provided by a curriculum which integrates a common core of nursing knowledge and experience in addition to providing a brief subject centered experience in each area of nursing.

CHAPTER I

INTRODUCTION

Curriculum design is a contemporary issue in nursing education. Various structural designs are being utilized by baccalaureate schools of nursing in the nation. The integrated core curriculum is a popular approach to curriculum design. In the past decade many baccalaureate schools of nursing have undergone curriculum structural revision instituting an integrated core approach to curriculum in preference to a subject centered approach. Schools continuing to structure curriculum in a subject centered manner are faced with the decision of whether to retain their current approach or whether to accept proposed integration methods of curriculum.

Reviewed literature revealed no statistical evidence of any difference in the achievement outcome of graduates from different curriculum designs.

Taba proposes that rather than being based on clear-cut theoretical considerations or tested knowledge, many decisions leading to changes in curriculum or organization have been made largely by chance, by pressure, or in terms of expediency.¹

¹Hilda Taba, Curriculum Development: Theory and Practice (New York: Harcourt, Brace & World, Inc., 1962) pp. 383-384.

The dangers of wholesale adoption into nursing practice of theories and concepts without adequate testing of their appropriateness, meaningfulness, and utility is warned of by Wald and Leonard.² Nursing curriculum needs to be investigated, evaluated, and tested as to its effectiveness.

STATEMENT OF THE PROBLEM

The problem of the study was to determine if differences exist according to achievement in State Board Test Pool Examination (SBE) in medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing between a baccalaureate school of nursing utilizing a subject centered approach to curriculum and a baccalaureate school of nursing utilizing an integrated core approach to curriculum.

HYPOTHESES

1. There is no significant difference in medical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core

²Florence S. Wald and Robert C. Leonard, "Toward Development of Nursing Practice Theory," Nursing Research, XIII, 4:309-310, 1964.

curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

2. There is no significant difference in medical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

3. There is no significant difference in surgical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

4. There is no significant difference in surgical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

5. There is no significant difference in obstetrical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

6. There is no significant difference in obstetrical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

7. There is no significant difference in nursing of children SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

8. There is no significant difference in nursing of children SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

9. There is no significant difference in psychiatric nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

10. There is no significant difference in psychiatric nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969
- b. 1970
- c. 1971
- d. 1972
- e. 1973
- f. 1969-1973 group

PURPOSE OF THE STUDY

The purpose of the study was to determine if differences exist, as measured by five subtests of a standardized test, in the achievement of graduates from two different nursing programs each utilizing a different structural design

to curriculum. Possible benefits can be derived from such a study by aiding schools of nursing in assessing the effectiveness of their curriculum design. Results may also have an effect on change or modification of curriculum structure in baccalaureate schools of nursing.

ASSUMPTIONS

For the purpose of this study, the investigator assumed that:

1. Evaluation standards were comparable in each school, e.g. an A or 4.00 grade signifies excellence.
2. Both schools met the criteria as set up by the National League for Nursing in their curriculum offerings to students, e.g. balance between nursing and general education credits.
3. Faculty members were comparable in expertise and educational background since both schools were accredited by the National League for Nursing.

METHODOLOGY

Statistics were gathered and analyzed from School I, a baccalaureate school of nursing utilizing a subject centered approach to curriculum, and from School II, a

baccalaureate school of nursing utilizing an integrated core approach to curriculum. SBE scores in medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing were compared between the two schools for each of the years 1969 through 1973 and for the total five years as a group. The college cumulative grade point average and a college entrance verbal aptitude stanine score for each student were recorded for the control of variables in the study.

LIMITATIONS OF THE STUDY

Limitations of the study to be considered are:

1. Background experience of students within each school were not investigated.
2. College entrance examination tools from each school are comparable but not identical.

DEFINITION OF TERMS

For the purpose of this study, the investigator has defined the following terms:

1. Subject centered curriculum is an organization of the content of nursing into subjects of instruction and

practice, such as medical, surgical, obstetrical, pediatric, and psychiatric nursing.

2. Integrated core curriculum is an organization of the content of nursing in which elements or concepts common to all areas of practice are emphasized such as mobility, protection, metabolism, reproduction, oxygenation, and sensorium. Variables which cross over and expand into integrated nursing care of patients with interferences with functioning of any of the core concept areas include sociological and economic variables, cultural values, diagnosis and prognosis, sex, and age.

3. State Board Test Pool Examinations (SBE) are nationally standardized tests administered by individual State Boards of Nursing. These examinations measure minimum safety in nursing practice. SBE must be successfully passed to qualify a graduate of an accredited school of nursing for licensure as a registered nurse.

4. College entrance aptitude examinations are assessment tests administered to students for the purpose of predicting collegiate success.

SUMMARY

The general intention of this study was to provide statistical data which indicated whether the design of a curriculum in nursing education influences student outcome in terms of standardized test achievement.

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION

In recent years nursing education has undergone upheaval and evolution in curriculum structure. A number of different curriculum structures have appeared since the early 1950's. Previous to this era little consideration was given in the literature to the form of the nursing curriculum. Most texts and articles assumed that all schools of nursing taught by the disease centered, body systems approach, and this assumption was substantially correct. The search for alternative modes is demonstrable in the professional literature of the 1950's.³

The purpose of this review is to explore two types of curriculum structure in nursing education. The subject centered curriculum is also referred to by various authors as the traditional, disease centered, body systems, logistical, or the big five (medical, surgical, obstetrical, pediatric, and psychiatric nursing). The other type of curriculum to be discussed is the integrated core approach. The strengths and

³Barbara J. Stevens, "Analysis of Structural Forms Used in Nursing Curricula," Nursing Research, XX, 5:388-390, 1971.

weaknesses of each design and curriculum trends will be reviewed.

SUBJECT CENTERED CURRICULUM

Discussion

The oldest surviving nursing curriculum is the disease centered or body systems approach. This logistic curriculum design predominated in nursing education for many years and few educators questioned the possibility of alternative forms. Today about one-fourth of all nursing programs follow this pattern of body systems. In this construct each physiological system of the human body becomes the focus for a course, such as cardiovascular nursing, gynecologic nursing, or gastrointestinal nursing. In turn each course focuses upon the diseases or injuries specific to the physiologic system. Each disease then demonstrates routine subdivisions into areas such as: etiology, pathology, clinical manifestations, sequelae, medical therapy, and nursing measures. With this structure, knowledge is usually amassed like the process of addition. Initially there is no overall view of the whole, but knowledge is attained as fact after fact falls to form a pattern. The concept of the nurse herself is subsidiary in this logistic form. The view of the body as the field in

which the health-illness struggle takes place is typical of the logistic interpretation.⁴

According to Taba the essence of subject organization is that both the content and the learning experience related to acquiring the discipline are divided and organized by the logic of the respective subject areas. Since the mastery of the subject matter is the central task, exposition tends to be the chief method of instruction and the textbook the chief source.⁵

Defense

The chief defense of the subject organization is that subjects constitute a logical and effective method of organizing new knowledge and, therefore, an effective method of learning it. By following organized bodies of subject matter, a student can build his store of knowledge more effectively and economically. A more recent reasoning in support of compartmentalized subjects is that following subjects systematically provides disciplined knowledge and trains in special systems of thought.⁶

⁴Ibid., pp. 389-390.

⁵Taba, op. cit., pp. 385-386.

⁶Ibid., pp. 386-387.

The student's clinical practice is directly correlated with the subject being studied. Supervision in the clinical area is conducted by an instructor with expertise in that particular area of nursing, e.g. obstetrics. Theoretical knowledge of a subject area is studied and applied to the clinical situation by students within each rotation of assigned experience.

The chief advantage of the system, according to Stevens, is that nurses educated in this manner virtually have their nursing tasks programmed for them. The nurse educated in this way will not be hopelessly caught in indecision between numerous alternatives; she will simply proceed with utmost efficiency.⁷ Another strength of this curriculum design may be that licensing examinations in nursing are organized in subject areas.

Criticisms

Although there are many practical advantages to the logistic or body systems type of curriculum, it lacks the unification and cohesion which might be provided if all nursing courses were based in a common conceptual frame of reference. There are also more concrete disadvantages.

⁷Stevens, Nursing Research, op. cit., p. 390.

Faculty members with expertise in distinct clinical areas are often grouped into subgroups which operate with some degree of autonomy in planning and implementing their respective courses. Content which transcends clinical specialties, such as communication theory, may be dealt with within each course; but since faculty groups tend to be isolated, they have few formal controls over the sequence of complexity of communication theory as the student moves through the curriculum. Concepts such as communication may never be given the attention they deserve within this type of curriculum as they become everyone's and yet no one's responsibility.⁸

As listed by Taba, the following are criticisms of traditional subject organization in regards to curriculum organization:

1. Subjects alone, qua subjects, do not provide a sufficiently adequate basis for developing a scope of well-rounded education, because in themselves they have no inherent criterion for either comprehensiveness or worth, and because subject organization discourages the pursuit of multiple objectives.

2. Subjects alone do not provide a sufficient basis for sequence, especially if they minimize understanding of and concern for analysis of what is learned or of the behavioral objectives.

⁸Eileen C. Hodgman, "A Conceptual Framework to Guide Nursing Curriculum," Nursing Forum, XII, 2:112-113, 1973.

3. Subject organization, conventionally pursued practically prevents a pursuit of interrelated learning. It tends toward unnecessary compartmentalization of learning.⁹

Progressing through the subject organized program can be described as lateral and additive rather than vertical and assimilative.

INTEGRATED CORE CURRICULUM

Discussion

Faculties throughout the country are working to develop programs which integrate the curriculum. One popular curriculum design utilizing a broad conceptual approach has been adapted to meet the needs of many different schools by varying the combinations and arrangements of broad concepts to form the framework for the core content. The faculty identify a number of core concepts drawn from the physical, biological, and social sciences in accord with the philosophy and objectives of the school.¹⁰

The curriculum stresses the integrative nature of nursing content, and in their teaching the faculty focus on

⁹Taba, op. cit., p. 392.

¹⁰Jean E. Schweer, Creative Teaching in Clinical Nursing (St. Louis: C. V. Mosby Co., 1972) p. 30.

generalizing concepts across age groups and clinical settings. More emphasis is placed on the development of the skill of problem solving than on the accumulation of knowledge. Formal classes are team taught to carry out the emphasis on a general concept of nursing.¹¹

Integrated core curriculum is based on the belief that nursing has common elements which cut across all disease entities. The common elements or strands identified by one program were growth and development, communication, stress, family concepts, and continuity of care.¹² Another example of major concepts or threads that unify the entire sequence of nursing courses are man throughout the life cycle, common nursing problems, and the nursing process. One may picture the concepts as horizontal strands and the principles guiding their use as vertical strands forming a foundation or matrix for students' learning experiences.¹³

¹¹Sister Callista Roy, "Adaptation: Implications for Curriculum Change," Nursing Outlook, XXI, 3:167, 1973.

¹²Sister Nathalie Elder and Sister Kathleen Smyth, "An Integrated Curriculum," Nursing Outlook, XVIII, 5:65, 1970.

¹³Teddy Langford, Jimmie Stephenson, and Sister Teresa Stanely, "Criteria for Choosing Textbooks for the Nontraditional Professional Nursing Curriculum," The Journal of Nursing Education, August, 1973, pp. 3-4.

The clinical teaching program is organized to provide a longitudinal approach in the application of those broad concepts regarding health and illness and their effects on patients. The emphasis of the clinical teaching remains relevant to the relationship between the concepts to be learned and the actual problems presented by the patient regardless of his diagnosis. Although students are assigned to various clinical services on a rotation basis, the learning focus is on the basic application of concepts and principles of pathophysiology, psychology, sociology, and nutrition and the use of problem solving techniques in assisting patients in terms of nursing. No deliberate attempt is made to teach the concepts in terms of medicine, surgery, pediatrics, obstetrics, or psychiatry. The integrated core type of approach calls for a clinical teacher who can adapt to a multiplicity of clinical nursing situations. Clinical supervision usually is confined to a group of students representing a variety of clinical areas and serves to coordinate the concepts in their application to the problems of patients representing a wide range of health and disease.¹⁴ Clinical correlation is

¹⁴Schweer, op. cit., pp. 30-32.

increased by utilizing team teaching. The team shares responsibility for both class and related clinical experiences.¹⁵

Defense

The premises of the core approach to curriculum are supported by Bruner as he asserts that the curriculum of a subject should be determined by the most fundamental understanding that can be achieved of the underlying principles that give structure to that subject.¹⁶

In integrated curriculums emphasis is placed on presenting learning experiences in an order and manner which will help the student integrate previous knowledge with new knowledge. In principle, this approach would reduce the need for frequent repetition of information such as has occurred when a topic like electrolyte balance has been studied in medical nursing, surgical nursing, pediatrics, and maternity, as well as in anatomy and physiology.¹⁷

¹⁵Barbara J. Stevens, "Adapting Nursing Education to Today's Student Population," The Journal of Nursing Education, April, 1971, p. 20.

¹⁶Jerome Brunner, The Process of Education (Cambridge: Harvard University Press, 1961) p. 12.

¹⁷Langford, loc. cit.

Criticism

Among the most criticized aspects of the core program is their failure to offer significant and systematic knowledge. This weakness may be caused by insufficient attention to the implementation of the design. Any new design suffers in practice from lack of teachers competent to teach with the plan. Core programs are especially subject to this difficulty because they require broad competence, while teachers have fairly specialized training and experience in content areas. Taba supports the premise that core programs have not yet received a fair test.¹⁸

CURRICULUM TRENDS

A current educational trend, even in elementary schools, is again an emphasis on content, disciplined knowledge, and the lifting of the intellectual level by a return to compartmentalized subjects.¹⁹

A change in nursing education which is just beginning is a return to the logistic mode. The disease centered focus of the previous logistic form in nursing education is making

¹⁸Taba, op. cit., pp. 410-412.

¹⁹Ibid., pp. 392-393.

way for a new focus. The content in the new logistic form can be seen in the use of programmed learning, computer-assisted instruction, and systems engineering in nursing education. Such procedure as cardiac monitoring and tele-diagnosing are examples of this focus in patient care. The computerized approach, stressing relationships of factual data, is in the logistic mode of constructionism.²⁰ The concept of the patient also is changed in this logistic mode. He is now seen chiefly as a source of information.²¹

Thus it appears that the logistic method may be returning to prominence. In this case the focus of content is on collecting all the data pertinent to one patient and the relating of that data into a coherent pattern. This return to a logistic mode may represent the beginning of a new methodological cycle. In the future it will be interesting to see if the other structural forms pass through new periods of popularity.²²

In her historical analysis of curriculum concepts, Longway suggests that the integrated curriculum may be the

²⁰Stevens, Nursing Research, op. cit., p. 396.

²¹Lillian M. Pierce, "Patient-Care Model," American Journal of Nursing, LXIV, 8:1700-1701, 1969.

²²Stevens, Nursing Research, op. cit., pp. 396-397.

highest level of content possible without losing essential specifics. Any future change in the educational process of nursing may be accommodated for by early specialization.²³

Chioni contends that it takes more knowledge and skill to be a generalist than a specialist. She suggests that nursing educators look at the possibility of specialized areas of practice at the undergraduate level and generalized areas of practice at the graduate level, e.g. neurologic nursing leading to long-term care.²⁴

The direction of change for the future may be indicated by the recommendation of the National Commission for the Study of Nursing and Nursing Education for a two-track system of basic nursing preparation--episodic and distributive.²⁵

²³Ina M. Longway, "Curriculum Concepts--An Historical Analysis," Nursing Outlook, XX, 2:120, 1972.

²⁴Rose Marie Chioni, "Identifying Changes and Priorities in Social and Health Care Needs," Faculty Curriculum Development: Part 1 The Process of Curriculum Development, Department of Baccalaureate and Higher Degree Programs Publication No. 15-1521 (New York: National League for Nursing, 1974) p. 25.

²⁵National Commission for the Study of Nursing and Nursing Education, An Abstract for Action, Jerome P. Lysault, director (New York: McGraw-Hill Book Co., 1970) pp. 90-91.

SUMMARY

The purpose of this chapter has been to explore the subject centered and the integrated core structures of curriculum in nursing education. The strengths and weaknesses of each design and curriculum trends were reviewed. The future design of nursing curriculum may contain some aspects of each of the structures explored.

CHAPTER III

METHODOLOGY

INTRODUCTION

The problem of the study was to determine if differences exist according to achievement in State Board Test Pool Examinations (SBE) in medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing between a baccalaureate school of nursing utilizing a subject centered approach to curriculum and a baccalaureate school of nursing utilizing an integrated core approach to curriculum. This chapter includes the following:

1. A description of the population.
2. Method of collecting data.
3. Method of organizing data.
4. Statistical hypotheses.
5. Analysis of data.
6. Precautions taken for accuracy.
7. Summary of the chapter.

POPULATION DESCRIPTION

For the purpose of the study the population was described as those students who have previously taken a college entrance examination and who completed initial

writing of medical nursing, surgical nursing, obstetrical nursing, nursing of children and psychiatric nursing SBE during the years 1969, 1970, 1971, 1972, and 1973 in School I (subject centered) and in School II (integrated core).

Curriculum structural revisions last took place in School I during the summers of 1966 through 1969 and in School II in 1965. The two baccalaureate schools compared met the following criteria:

1. A school within a public supported state controlled university.
2. National League for Nursing accredited.
3. Comparable admission standards.
4. Located in the West.

In considering population description, the following includes a discussion of the philosophy, purposes, and objectives of the curriculum design of each of the schools involved in this study. Sources of the information include each university's catalog and publications and Self-Evaluation Report for Continuing Accreditation to Department of Baccalaureate and Higher Degree Programs of the National League for Nursing.

The faculty of School I, utilizing a subject centered approach to curriculum as listed in Appendix A, believes that nursing, as one of the health professions, is a dynamic, interpersonal process with a scientific

base aimed at the optimum health of the individual involved. This interpersonal process necessitates involvement with all persons on a cognitive and affective sphere utilizing principles, skills, and scientific knowledge drawn from the humanities and the natural and social sciences.

Nursing implies concern for the needs of humanity and requires an understanding of the factors and forces operating in the interpersonal process which affect each human being, including the nurse. Within this context the potential for learning exists and is promoted through a constant search for knowledge and its application in both formal and informal settings.

The faculty believes that opportunities for learning should be available to qualified, interested persons of a heterogeneous population; that the role of the faculty is to act as a catalyst in the learning process; that the students and faculty carry responsibility for their own learning; and that together they share responsibility for assisting others to develop their full potential.

The purpose of the school of nursing is to provide educational opportunities for nurses and potential nurses to serve the community by: (1) preparing a nurse who can function as a member of a health agency providing direct patient service using the problem-solving approach; (2) preparing a nurse who can function as a citizen of a community with responsibility for the health of that community, involved in community needs and health problems; (3) preparing a nurse who has a personal commitment to the profession (this commitment involves a continuing program of self-improvement through study and action as well as contributing to the development of research and increased knowledge in nursing); (5) fostering, supporting, and providing continuing education for nurses and other interested individuals in society.

Upon completing the program of nursing, the individual will: (1) demonstrate respect for the uniqueness, worth, and dignity of each individual, including self; (3) implement appropriate communication

processes in interpersonal relationships; (3) implement appropriate nursing actions based on an understanding of principles of biological, physical, and behavioral sciences in the provision of professional nursing care; (4) utilize the problem-solving approach; (5) provide safe, intelligent, and appropriate nursing care; (6) demonstrate qualities of leadership in planning, directing, coordinating, and evaluating nursing care; (7) demonstrate a personal commitment to the profession; (8) collaborate with other health disciplines to provide improved health services in the community.

The faculty believes the philosophy, purpose, and objectives as accepted provide a framework for an educational program that can change with the needs of society and the changes in the delivery of health care.

To be eligible for admission to the school of nursing at the beginning of the sophomore year, the student must have completed 24 semester hours of credit with at least a 2.15 average. All students must have a 2.25 average to start the clinical courses of the junior year, as well as completing all prerequisite courses. An average of 2.25 in the nursing major is required for graduation.

Following the freshman year of basic science and liberal education courses, students begin the study of nursing the sophomore year, along with more liberal education and science background. In the junior and senior years, students concentrate more on the nursing major clinical courses, though continuing with electives from general education areas.

The following includes a discussion of the nursing courses offered by School I. Clinical practice for students is experienced concurrently with their theoretical studies in medical-surgical nursing, mental health nursing, pediatric nursing, community health nursing, and maternity nursing.

Fundamentals of Nursing. A sophomore course including an introduction to philosophies, concepts,

and skills basic to nursing in any setting with special emphasis on the maintenance of health; the utilization of problem-solving techniques to the planning, providing, and evaluating of direct care; and the application of theory from natural and behavioral sciences as a means of providing appropriate, individualized, intelligent, creative health care to individuals of various ages and in various community settings.

The following are junior nursing courses:

Medical-Surgical Nursing. A study of the health problems of the adult patient with medical-surgical conditions, including the operative experience. Clinical practice includes planning and implementing nursing care of selected patients, communication skills, the problem-solving process, and establishing interpersonal relationships.

Community Mental Health Nursing. Eight week clinical experience includes encounter or group process and experience in a drug and alcoholic unit. Focus is on self-awareness, self-growth, understanding various human behaviors, therapeutic intervention, and prevention in any setting in the community; increasing ability to work with various therapeutic teams.

Family-Centered Pediatric Nursing. Eight week experience in the nurse's role in meeting the needs of the child and his parents in illness and health.

The following are senior nursing courses:

Nursing Options. An opportunity for senior students in nursing to plan special experiences to meet individual needs and interests; special projects in various clinical areas or settings.

Community Health Nursing. Principles of Public Health Nursing applied through family centered service in public health agencies; introduction to nursing in school and health education; assessment of community resources.

Maternity Nursing. Principles of caring for the antepartal, partal, and postpartal patient. Emphasis given to the patient in labor and delivery and care of the newborn infant including care of the premature and critically ill infant in the Intensive Care Nursery.

Organization for Community Health. Identifies and discusses philosophy, concept, and principles of public health, their relationship to the ecological framework and organization of community for meeting its health service needs.

Leadership in Team Nursing. Eight week experience in the principles of leadership applied to the management of a nursing team with experience as a nursing team leader.

Trends in Nursing. Change in relation to responsibilities and opportunities of the nursing profession, trends affecting nursing and allied professions, organizations to meet these needs.

Nursing Research. An overview of the research process as it develops from problem-solving in nursing; consideration of clinical research and its application to the improvement of nursing care.

The following nursing courses may be taken but are not required:

Seminar in Nursing. One to four credits of specially arranged seminars or courses pertinent to nursing and allied health care.

Independent Study. One to four credits of supervised study by non-honor students in nursing. Open to juniors and seniors in the nursing program.

Honors in Nursing. Three to six credits of supervised independent study in nursing which may be substituted for senior electives.

The faculty of School II, utilizing an integrated core approach to curriculum as listed in Appendix B, believes that professional education builds on a broad foundation in the humanities, biological, physical, and social sciences. Students complete approximately eighty credits of required and elective courses and are of sophomore standing before entrance into the courses of the nursing major offered in the clinical setting. Students must demonstrate a 2.0 grade point average or better before admission to the upper division courses offered by the School of Nursing.

The faculty believes that the curriculum must be responsive to social change and to the changing health needs of people. The curriculum is organized utilizing the concept of common human needs. These needs are identified as physiological and psychosocial. The physiological needs, protection, safety, mobility, metabolism, reproduction, oxygenation, sensorium, and perception are the primary focus of a series of four nursing intervention courses. Concurrently, the psychosocial needs are considered in a similar series of courses. Both sets of courses are clinical in nature focusing on the individual nursing care needs of particular patients.

Emphasis is given to helping the students master four fields of knowledge. The first field of knowledge is referred to as "the common core" by the faculty. The second field is the nursing care needs that are influenced by the variables of sex, age, and medical diagnosis. These variables form the basis for nursing specialization. The third field of knowledge is the psychosocial core. The fourth field is concerned with the knowledge and skills for patient assessment and the adaptation of nursing process to the individual patient.

Through these four fields of knowledge in a horizontal relationship there are identified sequences of content derived from disciplines other than nursing. This knowledge is adapted by faculty members and is integrated by students developing professional skills. Examples of this content are identified as human growth and development, pharmacology, communication, and nutrition.

The objectives of the program focus on the student as a developing professional nurse who will be prepared for beginning positions in nursing. Emphasis is on the development of the knowledges, skills and abilities required of a professional nurse in a changing society, on development of a self-directive citizen capable of providing leadership to the nursing team and committed to continuing her professional education and participation in professional nursing organizations.

The rationale for organization of the curriculum is that:

1. learning develops from simple to complex concepts.
2. core material develops in scope and complexity in relation to patient care assignments.
3. specialty content is best learned as a variable of patient care.
4. problem-solving skills, leadership activities, and mature judgments are gained by practice as are manual skills.
5. one of the functions of teaching is to develop the independent learning abilities of students through assignments which require the students to practice self-directive behaviors.
6. participation in the delivery of health services in the hospital and in the community as a student promotes and enhances these functions as a graduate.
7. professional organizations develop to serve the needs of the professional members and the clients they serve.
8. participation in the student professional organization promotes participation in professional organizations by graduates.
9. the demographic, transportation, and urban-rural factors are peculiar to the state.

The courses in the first or freshman year establish:

- (1) an introduction to the nature of man and society with emphasis on man's biological and social development,
- (2) the roles of professions in society with a focus on

the profession of nursing, and (3) electives to meet individual needs and interests of the students. Twelve credits of humanities must be included in the elective credits over the four years enrolled in the program. No more than sixteen credits of electives in nursing may be applied toward degree requirements.

Courses in the second or sophomore year build on the foundations of the freshman year and are still largely in general education with emphasis on man's biological and cultural nature. These include courses in basic nutrition, general and biological chemistry, communicable disease control, nursing seminars, and beginning nursing care techniques.

Transitions in Health and Illness, provides the opportunity for the student to apply knowledge to the laboratory practice. This involves application of physics principles, mathematics to pharmacology problems, and case study discussions.

At the end of the fifth quarter of study the student enters the hospital or clinical setting where Nursing Intervention I is offered. This course introduces nursing care in real life situations and with Psychosocial Aspects of Nursing I establishes the clinical foundation. These two courses assume that every patient has psychosocial needs which nurses can help to meet and that all patients experience needs for protection and changes in mobility.

The third or junior year of the program is completed from the hospital and community setting. Nursing Intervention II and Nursing Intervention III set forth content which is concerned with major interferences with meeting man's biological needs in reproduction, oxygenation, and metabolism. The emphasis is toward promotion of high-level wellness, of prevention of interferences with health needs, and with therapeutic and rehabilitative measure. Some of the specific content deals with the maternity cycle, fetal development, newborn and premature nursing care, fertility and infertility, digestion, assimilation, interferences with renal and respiratory function, hormonal imbalances, aging and chronic illness, and the complexly ill.

In the third quarter of the junior year the focus remains on major interferences with health needs and the variables of age, sex, and genetic inheritance. Family and community nursing responsibilities are identified and the student learns to help people deal with these problems in and out of hospital settings. The transition from mental health to mental illness is studied as a major health problem in the general hospital, in the home, and in the community. Some of the content dealt with in this quarter of study is health needs of a biological nature. Included are concepts of demography, biostatistics, epidemiological studies and services, patient assessment and evaluation in home settings, mental illness and mental health, and professional nurse action on the health team.

The nursing courses of the senior year further develop: (1) nursing intervention within the home and community and in leadership and cooperation with a larger health team, (2) nursing intervention with the mentally ill patient in the psychiatric hospital (involving keener communication skills to affect behavior changes in new setting), and the leadership role of the professional nurse as head of the nursing team. During the final quarter, students are stimulated and guided toward a reorganization of values interwoven with professional knowledges and skills in order to crystallize desirable professional attitudes in Professional Goals.

Electives in nursing are available to enable the student to explore selected areas of nursing, i.e. cardiac care, pediatrics, operating or emergency room. The student, with the consent of a faculty member who will assume direction and supervision, can complete these kinds of experiences as an elective special topics course.

METHOD OF COLLECTING DATA

The data was collected from the statistical records of School I and School II.

The State Board Test Pool Examination for licensure as a registered nurse consists of tests in the following areas: medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing. Each test is an integrated test and includes questions in areas such as the natural and social sciences, nutrition and diet therapy, and pharmacology as they relate to the particular clinical subject.²⁶

The steps in the development of a licensure examination are, in brief:

1. Initial discussion and agreement on test plans, by the Blueprint Committee appointed for the examination, working with National League for Nursing (NLN) staff.
2. Construction of questions by subject-matter experts (item writers) each of whom, as a representative of the state board, works with NLN staff.
3. Content validation of the items by staff, to the extent possible, and analysis of content in terms of the test plans.
4. Study by the Blueprint Committee of the items and the analyses, in preparation for development of the Review Draft of the examination.
5. Review by boards of nursing of the Review Draft.
6. Study by NLN staff of the tabulated data and the comments of the boards, and organization of data for the Blueprint Committee.
7. Study of the review data by the Blueprint Committee, with special attention to items presenting problems. Agreement of content of the First Form of the examination.

²⁶American Nurses' Association Council of State Boards of Nursing. Licensure to Practice Nursing. May, 1972.

8. Preparation of the printed First Form, and administration by boards of nursing for purposes of obtaining item analysis data.

9. Study of item analysis data, and preparation, printing, and distribution of the Final Form.

10. Development of norms after the administration of the Final Form of the examination.²⁷

The college entrance examination administered to students in School I was the American College Test (ACT). ACT's assessment program comprises tests of educational development and scholastic ability in English usage, mathematics usage, social studies reading, and natural science reading. Reliabilities of successive forms of ACT are estimated by the odd-even procedure. Interform correlations ranged from .69 in natural science to .86 on the composite. Validation of the ACT has been very extensive with consistently good results.²⁸

The college entrance examination administered to students in School II was the Ohio State University Psychological Examination (OHIO). This is a test designed primarily to predict success in college (correlation of about .60 with scholastic performance). Reliability is high. It emphasizes

²⁷National League for Nursing, Test Construction Unit. The Reviewing of the Test Questions Proposed for Licensure Examinations. 10 Columbus Circle, New York, New York, 10019.

²⁸Oscar Krisen Buros, ed., The Seventh Mental Measurement Yearbook (New Jersey: The Gryphon Press, 1972) pp. 612-615.

verbal ability. Norms are based on Ohio high-school students and freshmen in Ohio colleges.²⁹

The recording of the ACT and the OHIO test scores in verbal stanine values permits valid comparison of these two standardized entrance examinations.

METHOD OF ORGANIZING DATA

Tables are included to present:

1. Data comparisons between the two schools on medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing SBE with college cumulative grade point average as the covariate.
2. Data comparisons between the two schools on medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing SBE with college entrance verbal aptitude stanine as the covariate.
3. A summary of the null hypotheses rejected.

STATISTICAL HYPOTHESES

The null hypotheses were that there is no significant

²⁹Robert L. Thorndike and Elizabeth Hagen, Measurement and Evaluation in Psychology and Education (New York: John Wiley & Sons, Inc., 1955) p. 549.

difference in medical nursing, surgical nursing, obstetrical nursing, nursing of children, or psychiatric nursing SBE scores between students educated in a subject centered curriculum and students educated in an integrated core curriculum. The nondirectional alternative hypotheses was that there is a difference.

If a difference less than .05 level of significance was found, the investigator retained the null hypotheses. If a significant level of difference was found at the .05 level or greater, the investigator accepted the nondirectional alternative hypotheses.

The .05 level of significance provides a balance between chances of a Type I error and chances of a Type II error.

ANALYSIS OF DATA

The analysis of covariance statistical design was used to equate the two curriculum groups by use of each student's college cumulative grade point average and college entrance examination stanine score. By equating the two groups on the cumulative grade point average and college entrance examination, there was an adjusting of the scores on the SBE; therefore, instead of comparing actual means,

the analysis compared adjusted means. The calculated F was compared to the tabled value at the .05 level of significance and for the appropriate population size.

The analysis of covariance is a statistical method rather than an experimental method, which may be used to "control" or "adjust for" the effects of one or more uncontrolled variables, and permit, thereby, a valid evaluation of the outcome of the experiment.³⁰

PRECAUTIONS TAKEN FOR ACCURACY

The data from the statistical records in School I was recorded and double checked by authorized school personnel. The recording of data from School II was recorded and double checked by the investigator. The analysis of data was done with a Sigma 7 computer.

SUMMARY

The problem of the study was to determine if differences exist in statistical data which will indicate whether the design of curriculum in nursing influences student outcome in terms of standardized test achievement. The analysis

³⁰George A. Ferguson, Statistical Analysis in Psychology & Education (New York: McGraw-Hill Book Co., 1971) p. 288.

of covariance statistical design was used to analyze the data.

CHAPTER IV

ANALYSIS OF DATA

INTRODUCTION TO THE ANALYSIS OF DATA AND INTERPRETATION

This study was taken from a population of 297 students in School I and 414 students in School II. This included the total number of students taking SBE in each school during the years 1969 through 1973. The population studied in the analysis of covariance with the college cumulative grade point average as the covariate included 297 students from School I and 414 students from School II. The population studied in the analysis of covariance with the college entrance verbal aptitude stanine as the covariate included 179 students from School I and 339 students from School II. In both schools most entering freshmen had taken the college entrance aptitude examination. Students transferring into the nursing program from another school of nursing or from another curriculum were not required to take college entrance examinations suggested by the school of nursing.

The analysis of covariance was used to determine if differences existed in SBE scores between the two schools. Data was analyzed using the college cumulative grade point

average and the college entrance verbal aptitude scores of each student as the covariates.

The null hypotheses were rejected if the computed F in the analysis of covariance was significant at the five percent level. A rejected null hypothesis indicated that a significant difference existed between the achievement outcomes in the two schools. The nondirectional alternative hypothesis was then accepted, thus allowing the investigator to look at the achievement in both schools.

This chapter includes a presentation of the hypotheses relating to each area of nursing with the null hypotheses either being rejected or not rejected. Within each subject area of nursing there are two main hypotheses each with six subheadings listed a through f. This yields twelve categories of hypotheses within each of the SBE nursing areas to be rejected or not rejected. This is followed by a discussion of the analysis of the data in relation to each type of curriculum. Tables and hypotheses correspond numerically.

ANALYSIS OF MEDICAL NURSING

Hypothesis 1. There is no significant difference in medical nursing SBE scores between students graduated from a

subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969 Not rejected
- b. 1970 Not rejected
- c. 1971 Rejected
- d. 1972 Not rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Hypothesis 2. There is no significant difference in medical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969 Rejected
- b. 1970 Not rejected
- c. 1971 Not rejected
- d. 1972 Rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Seven of the twelve categories of hypotheses were rejected indicating that in slightly more than half of the population groups investigated there was a significant

Table 1. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Medical Nursing State Board Test Pool Examinations (SBE) with college cumulative grade point average (GPA) as the covariate

Year	School	N	$\bar{x}$ GPA	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	67	2.91	522.43	517.29	1.02
	II	83	2.84	499.78	503.95	
1970	I	56	2.83	527.52	532.38	3.41
	II	87	2.89	508.53	505.41	
1971	I	47	2.88	549.57	554.12	24.11*
	II	79	2.93	493.03	490.32	
1972	I	52	2.98	533.92	528.15	3.20
	II	69	2.89	498.87	503.22	
1973	I	75	2.99	562.67	557.89	10.63*
	II	96	2.90	518.49	522.22	
Group 69-73	I	297	2.92	539.86	537.49	28.62*
	II	414	2.89	504.52	506.22	

*Significant beyond the .05 level

Table 2. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Medical Nursing State Board Test Pool Examinations (SBE) with college entrance verbal aptitude stanine as the covariate

Year	School	N	$\bar{x}$ stan	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	36	5.33	532.75	537.39	4.54*
	II	70	5.63	503.76	501.37	
1970	I	33	5.79	529.70	526.78	.70
	II	81	5.60	509.33	510.52	
1971	I	21	4.95	516.76	519.85	2.11
	II	75	5.11	493.25	492.39	
1972	I	37	4.86	520.19	523.39	4.81*
	II	58	5.07	490.00	487.96	
1973	I	52	5.50	574.12	569.55	12.59*
	II	55	5.00	516.62	520.93	
Group 69-73	I	179	5.32	545.83	545.61	24.28*
	II	339	5.31	508.39	508.51	

*Significant beyond the .05 level

difference in achievement outcomes. In all cases of the rejected null hypotheses students from School I achieved the higher scores. Both of the covariates supported the rejection of the null hypotheses in the 1973 population and in the 1969-1973 group.

A study of the health problems of the adult patient with medical conditions is presented with concurrent clinical practice during the junior year in School I. The concepts of medical nursing are integrated throughout the curriculum during the clinical quarters in School II.

ANALYSIS OF SURGICAL NURSING

Hypothesis 3. There is no significant difference in surgical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969 Not rejected
- b. 1970 Rejected
- c. 1971 Rejected
- d. 1972 Rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Hypothesis 4. There is no significant difference in surgical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969 Not rejected
- b. 1970 Rejected
- c. 1971 Not rejected
- d. 1972 Rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Nine of the twelve categories of hypotheses were rejected indicating that in more than half of the population groups investigated there was a significant difference in achievement outcomes. In all cases of the rejected null hypotheses students from School I achieved the higher scores. Both of the covariates supported the rejection of the null hypotheses in the populations from 1970, 1972, 1973, and the 1969-1973 group.

A study of the health problems of the adult with surgical conditions including the operative experience is presented during the junior year in School I. Clinical practice with surgical patients is experienced during the

Table 3. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Surgical Nursing State Board Test Pool Examinations (SBE) with college cumulative grade point average (GPA) as the covariate

Year	School	N	$\bar{x}$ GPA	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	67	2.91	522.01	516.93	.87
	II	83	2.84	500.75	504.85	
1970	I	56	2.83	546.27	550.89	4.23*
	II	87	2.89	524.09	521.12	
1971	I	47	2.88	538.45	543.63	10.74*
	II	79	2.93	499.16	496.08	
1972	I	52	2.98	556.85	551.48	10.27*
	II	69	2.89	504.55	508.59	
1973	I	75	2.99	569.97	565.16	12.19*
	II	96	2.90	521.67	525.44	
Group 69-73	I	297	2.92	547.40	545.03	29.73*
	II	414	2.89	510.84	512.54	

*Significant beyond the .05 level

Table 4. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Surgical Nursing State Board Test Pool Examinations (SBE) with college entrance verbal aptitude stanine as the covariate

Year	School	N	$\bar{x}$ stan	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	36	5.33	523.00	527.48	2.81
	II	70	5.63	502.13	499.82	
1970	I	33	5.79	565.67	563.14	4.56*
	II	81	5.60	523.42	524.45	
1971	I	21	4.95	498.81	502.91	.04
	II	75	5.11	499.93	498.79	
1972	I	37	4.86	538.03	540.65	7.89*
	II	58	5.07	496.47	494.79	
1973	I	52	5.50	573.58	568.09	10.22*
	II	55	5.00	518.33	523.51	
Group 69-73	I	179	5.32	545.83	545.61	24.66*
	II	339	5.31	508.39	508.51	

*Significant beyond the .05 level

same block of time. The concepts of surgical nursing are integrated throughout the curriculum during the clinical quarters in School II.

ANALYSIS OF OBSTETRICAL NURSING

Hypothesis 5. There is no significant difference in obstetrical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969 Rejected
- b. 1970 Rejected
- c. 1971 Rejected
- d. 1972 Not rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Hypothesis 6. There is no significant difference in obstetrical nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969 Rejected
- b. 1970 Rejected

- c. 1971 Rejected
- d. 1972 Not rejected
- e. 1973 Rejected
- f. 1969-1973 group. Rejected

Ten of the twelve categories of hypotheses were rejected indicating that there was a significant difference in achievement outcomes in nearly all of the population groups investigated. Both of the covariates supported the rejection of the null hypotheses in the populations from 1969, 1970, 1971, 1973, and the 1969-1973 group. During 1972 SBE obstetrical scores from School II remained at a level consistent with the other years but scores from School I showed a drop in average. Thus, the difference between the schools was lessened and the null hypotheses retained. In all cases of the rejected null hypotheses students from School I achieved the higher scores. Obstetrical nursing scores in School I represent the area of highest average SBE achievement during each of the investigated years with one exception. During the year 1971 in School I the highest average SBE scores were in psychiatric nursing.

Principles and practice of maternity nursing are studies during an eight week period during the senior year in School I. In School II principles of reproduction are

Table 5. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Obstetrical Nursing State Board Test Pool Examinations (SBE) with college cumulative grade point average (GPA) as the covariate

Year	School	N	$\bar{x}$ GPA	$\bar{X}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	67	2.91	577.04	572.15	23.26*
	II	83	2.84	507.52	511.47	
1970	I	56	2.83	614.66	609.12	23.16*
	II	87	2.89	546.46	543.59	
1971	I	47	2.88	561.72	566.00	28.35*
	II	79	2.93	483.28	480.73	
1972	I	52	2.98	569.98	564.91	1.97
	II	69	2.89	541.99	545.81	
1973	I	75	2.99	599.40	593.96	53.33*
	II	96	2.90	501.02	505.27	
Group 69-73	I	297	2.92	584.24	581.99	109.83*
	II	414	2.89	515.31	516.93	

*Significant beyond the .05 level

Table 6. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Obstetrical Nursing State Board Test Pool Examinations (SBE) with college entrance verbal aptitude stanine as the covariate

Year	School	N	$\bar{x}$ stan	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	36	5.33	586.47	590.24	26.57*
	II	70	5.63	508.30	506.36	
1970	I	33	5.79	617.67	614.79	13.68*
	II	81	5.60	547.22	548.39	
1971	I	21	4.95	527.29	531.03	5.34*
	II	75	5.11	480.69	479.65	
1972	I	37	4.86	563.62	565.95	3.29
	II	58	5.07	535.33	533.84	
1973	I	52	5.50	597.67	591.10	33.91*
	II	55	5.00	496.87	503.09	
Group 69-73	I	179	5.32	583.80	583.58	76.36*
	II	339	5.31	514.26	514.38	

*Significant beyond the .05 level

studies during the junior year in Nursing Intervention II. The concepts are integrated by the student during the junior and senior years.

The greatest amount of SBE significant differences between the two schools is evidenced in obstetrical nursing. Educators in nursing have speculated that obstetrical nursing is such a speciality practice that it cannot be integrated as successfully as other areas in nursing. However, in the integrated curriculum scores in obstetrical nursing are comparable to other areas of nursing. In the subject centered curriculum obstetrical scores rank high in comparison to other areas of SBE.

ANALYSIS OF NURSING OF CHILDREN

Hypothesis 7. There is no significant difference in nursing of children SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969 Not rejected
- b. 1970 Rejected
- c. 1971 Rejected
- d. 1972 Not rejected

e. 1973 Rejected

f. 1969-1973 group. . . . Rejected

Hypothesis 8. There is no significant difference in nursing of children SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

a. 1969 Not rejected

b. 1970 Rejected

c. 1971 Not rejected

d. 1972 Not rejected

e. 1973 Rejected

f. 1969-1973 group. . . . Rejected

Seven of the twelve categories of hypotheses were rejected indicating that in slightly more than half of the population groups investigated there was a significant difference in achievement outcomes. In all cases of the rejected null hypotheses students from School I achieved the higher scores. Both of the covariates supported the rejection of the null hypotheses in the populations from 1970, 1973, and the 1969-1973 group.

Family centered pediatric nursing is studied and practiced during an eight week experience during the junior

Table 7. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Nursing of Children State Board Test Pool Examinations (SBE) with college cumulative grade point average (GPA) as the covariate.

Year	School	N	$\bar{x}$ GPA	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	67	2.91	532.79	528.49	2.30
	II	83	2.84	504.14	507.62	
1970	I	56	2.83	545.66	550.02	7.42*
	II	87	2.89	518.49	515.69	
1971	I	47	2.88	542.62	546.72	21.24*
	II	79	2.93	485.97	483.54	
1972	I	52	2.98	527.85	521.85	.01
	II	69	2.89	518.93	523.44	
1973	I	75	2.99	559.83	555.24	8.77*
	II	96	2.90	516.77	520.35	
Group 69-73	I	297	2.92	542.73	540.56	26.16*
	II	414	2.89	509.08	510.64	

*Significant beyond the .05 level

Table 8. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Nursing of Children State Board Test Pool Examinations (SBE) with college entrance verbal aptitude stanine as the covariate

Year	School	N	$\bar{x}$ stan	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	36	5.33	537.19	540.70	3.43
	II	70	5.63	507.69	505.88	
1970	I	33	5.79	563.18	560.77	7.13*
	II	81	5.60	517.77	518.75	
1971	I	21	4.98	511.95	515.65	2.84
	II	75	5.11	485.76	484.72	
1972	I	37	4.86	512.14	514.60	.11
	II	58	5.17	510.48	508.91	
1973	I	52	5.50	559.69	553.73	5.08*
	II	55	5.00	516.15	521.78	
Group 69-73	I	179	5.32	540.38	540.17	19.95*
	II	339	5.31	507.09	507.20	

*Significant beyond the .05 level

year in School I. In School II concepts of nursing of children are integrated throughout the clinical quarters.

ANALYSIS OF PSYCHIATRIC NURSING

Hypothesis 9. There is no significant difference in psychiatric nursing SBE scores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college cumulative grade point average as the covariate during the years:

- a. 1969 Not rejected
- b. 1970 Not rejected
- c. 1971 Rejected
- d. 1972 Rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Hypothesis 10. There is no significant difference in psychiatric nursing SBE cores between students graduated from a subject centered curriculum and students graduated from an integrated core curriculum with college entrance verbal aptitude stanine as the covariate during the years:

- a. 1969 Rejected
- b. 1970 Not rejected
- c. 1971 Not rejected

- d. 1972 Rejected
- e. 1973 Rejected
- f. 1969-1973 group. . . . Rejected

Eight of the twelve categories of hypotheses were rejected indicating that in more than half of the population groups investigated there was a significant difference in achievement outcomes. A greater variety of results is evident in the psychiatric area of nursing than in any of the other SBE areas. In the 1969 group the null hypothesis was not rejected with the grade point average as the covariate but was rejected with the college entrance stanine as the covariate. In the latter case School I achieved the higher scores. Both covariates supported the retention of the null hypotheses in 1970. In 1971 the null hypothesis was rejected with the grade point average covariate. School I achieved the higher scores. The null hypothesis was retained during 1971 with the college entrance stanine covariate. The rejection of the null hypotheses was supported by both covariates for the populations studied in 1972, 1973, and the 1969-1973 group. In all cases School II achieved the higher scores.

Community mental health nursing is studied with eight weeks clinical experience during the junior year in

Table 9. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Psychiatric Nursing State Board Test Pool Examinations (SBE) with college cumulative grade point average (GPA) as the covariate

Year	School	N	$\bar{x}$ GPA	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	67	2.91	561.58	556.89	3.05
	II	83	2.84	532.67	536.47	
1970	I	56	2.83	540.16	543.37	2.80
	II	87	2.89	567.68	565.61	
1971	I	47	2.88	584.89	587.94	8.30*
	II	79	2.93	550.70	548.88	
1972	I	52	2.98	548.13	543.20	22.64*
	II	69	2.89	595.28	598.99	
1973	I	75	2.99	547.20	542.88	14.13*
	II	96	2.90	578.24	581.62	
Group 69-73	I	297	2.92	555.25	553.36	5.11*
	II	414	2.89	564.47	565.82	

*Significant beyond the .05 level

Table 10. Analysis of Covariance between School I (subject centered) and School II (integrated core) on Psychiatric Nursing State Board Test Pool Examinations (SBE) with college entrance verbal aptitude stanine as the covariate

Year	School	N	$\bar{x}$ stan	$\bar{x}$ SBE	Adj $\bar{x}$ SBE	F
1969	I	36	5.33	570.86	574.98	6.83*
	II	70	5.63	535.50	533.38	
1970	I	33	5.79	544.70	542.22	3.09*
	II	81	5.60	569.49	570.50	
1971	I	21	4.95	562.57	565.87	1.18
	II	75	5.11	547.44	546.52	
1972	I	37	4.86	533.00	535.21	14.61*
	II	58	5.07	594.41	593.00	
1973	I	52	5.50	552.02	547.00	8.16*
	II	55	5.00	579.55	584.29	
Group 69-73	I	179	5.32	551.77	551.58	2.96
	II	339	5.31	563.49	563.59	

*Significant beyond the .05 level

School I. The concepts of psychiatric nursing are integrated throughout the clinical quarters in School II. Psychosocial aspects of nursing are studied the last sophomore quarter and the three junior quarters in School II. During the senior year one-half quarter is spent in the study and practice of psychiatric nursing. In School II psychiatric nursing is the only SBE area of nursing which is integrated throughout the nursing curriculum in addition to a subject centered type of concentrated experience. Average SBE scores in psychiatric nursing in School II rank higher than the average scores of any other area of nursing. Comparisons of psychiatric nursing with the other areas of nursing in School II indicate that integration of a nursing area in addition to a concentrated period of theory and direct practice yield the highest SBE achievement.

A summary of the null hypotheses rejected is presented in Table 11.

Table 11. Summary of Null Hypotheses Rejected

SBE	GPA Covar.	Sch I higher	Sch II higher	Stanine Covar.	Sch I higher	Sch II higher
Medical Nursing	1971	x		1969	x	
	1973	x		1972	x	
	69-73	x		1973	x	
				69-73	x	
Surgical Nursing	1970	x		1970	x	
	1971	x		1972	x	
	1972	x		1973	x	
	1973	x		69-73	x	
	69-73	x				
Obstetri- cal Nursing	1969	x		1969	x	
	1970	x		1970	x	
	1971	x		1971	x	
	1973	x		1973	x	
	69-73	x		69-73	x	
Nursing of Children	1970	x		1970	x	
	1971	x		1973	x	
	1973	x		69-73	x	
	69-73	x				
Psychi- atric Nursing	1971	x		1969	x	
	1972		x	1972		x
	1973		x	1973		x
	69-73		x			

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The problem of the study was to determine if differences exist according to achievement in State Board Test Pool Examination (SBE) in medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing between a baccalaureate school of nursing utilizing a subject centered approach to curriculum and a baccalaureate school of nursing utilizing an integrated core approach to curriculum.

The population included all students graduating from each of the schools in the study during the years 1969, 1970, 1971, 1972, and 1973. A total population of 297 students from School I, the subject centered curriculum, and 414 students from School II, the integrated core curriculum, were included in the study.

The statistical hypotheses were that there is no difference between the two groups on any of the SBE areas during any of the years investigated with either of the covariates studied.

The analysis of covariance statistical design was used to equate the two curriculum groups by use of each

student's college cumulative grade point average and college entrance examination stanine score as the covariates. The data was collected from the statistical records in each of the two schools. The analysis of data was done with a Sigma 7 computer.

Some of the null hypotheses were rejected and some were not rejected in medical nursing, surgical nursing, obstetrical nursing, and nursing of children. In each case of the rejected null hypotheses School I achieved the higher scores. Of the twelve categories of hypotheses explored in each subject area the following number were rejected: medical nursing--seven, surgical nursing--nine, obstetrical nursing--ten, and nursing of children--seven.

Some of the null hypotheses were also rejected and some were not rejected in psychiatric nursing. Of the twelve psychiatric categories of hypotheses studied, School I achieved the higher scores in two categories and School II achieved the higher scores in five of the categories of the rejected null hypotheses.

CONCLUSIONS

In all cases of the rejected null hypotheses, with the exception of psychiatric nursing, School I achieved the

higher SBE scores. In School II psychiatric concepts are integrated in addition to a subject centered type of experience. The other SBE nursing areas in School II are integrated with no specialized experience. Consideration must be given to the subject centered arrangement of SBE. All of the knowledge and abilities of the graduate from the integrated core curriculum may not be evaluated by a standardized test constructed in a subject centered manner.

The greatest benefit to graduates may be provided by a curriculum which integrates a common core of nursing knowledge and experience in addition to providing a brief subject centered experience in medical nursing, surgical nursing, obstetrical nursing, nursing of children, and psychiatric nursing.

Due to the limit of time and the vast amount of knowledge to be learned in nursing the episodic or acute care and distributive or maintenance and preventive choices in nursing may become a reality in the future. The student may choose an area of specialized study during the latter portion of her educational experience and become proficient in the selected area. Such a change in educational emphasis may make the state board examinations an invalid tool of measurement. The graduate of the future may be a beginning

practitioner prepared to function in a selected specialized area rather than in all areas of nursing.

RECOMMENDATIONS

As a result of this study the following recommendations are indicated:

1. Comparative studies of population from one or more subject centered curriculum schools of nursing with School I of this study.

2. Comparative studies of population from one or more integrated core curriculum schools of nursing with School II of this study.

3. Comparative studies of the SBE achievement of the population of each of the schools in this study with a future five year population from the respective schools.

4. Studies to determine the degree of correlation of college entrance examination scores with college cumulative grade point average and SBE achievement.

5. Studies which explore the types and availability of learning experiences in a curriculum and relate these to outcomes in the student.

6. Studies which follow-up the population of this study and correlate future nursing performance and success with student SBE achievement.

7. Comparative studies of School II graduates from the curriculum as it is currently set up with a group from the same school experiencing a totally integrated psychiatric nursing experience.

8. Comparative studies of School II graduates from the integrated core curriculum as it is currently set up with a group from the same school undergoing a brief specialty experience in medical, surgical, obstetrical, and pediatric nursing in addition to their integrated nursing education.

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APPENDICES

APPENDIX A

School I Curriculum in Nursing

Semester hours

Freshman Year

Engl 101 . .	Composition I.	3
Chem 105 . .	Gen Chemistry and Qualitative Analysis . .	4
Chem 107 . .	Intro to Organic and Biochemistry. . . .	4
	Humanities Graduation Requirement. . . .	8
3 hours from:		
Math 103 . .	College Algebra.	3
Math 110 . .	Elem Concepts of Mathematics	3
Psych 101. .	Intro to Psychology.	3
Anat 204 . .	Anatomy for Paramedical Personnel. . . .	4

Sophomore Year

Engl 102 . .	Composition II	3
Nurs 203 . .	Fundamentals of Nursing.	5
Psych 251. .	Developmental Psychology	4
3 hours from:		
Soc 101. . .	Intro to Sociology	3
Anth 171 . .	Intro to Cultural Anthropology	3
Phys 301 . .	Mechanisms of Human Physiology	4
Pharm 204. .	Elem Pharmacology.	2
M. Bio 202 .	Intro to Medical Microbiology.	4
H.Ec 240 . .	Intro to Nutrition	3
	Elective	3

Junior Year

Nurs 305 . .	Medical Surgical Nursing I	13
Nurs 316 . .	Community Mental Health Nursing.	8
Nurs 318 . .	Family Centered Pediatric Nursing. . . .	8
	Elective	3-5

Senior Year

Nurs 410 . .	Nursing Options.	4
Nurs 420 . .	Organization for Community Health. . . .	2
Nurs 415 . .	Community Health Nursing	6
Nurs 417 . .	Maternity Nursing.	6
Nurs 430 . .	Leadership in Team Nursing	6
Nurs 440 . .	Trends in Nursing.	2-3
Nurs 450 . .	Nursing Research	2
	Electives.	6

A minimum of 127 semester hours are required for graduation.

APPENDIX B

School II Curriculum in Nursing

	Quarter hours
Freshman Year	
Chem 121, 122 Intro to Gen & Biological Chem.	6
HE-F 125 Child Devel: Preschool Child.	4
MB 101 Microbiology in Relation to Man	4
N 100. Prof Considerations Seminar	3
Psy 103. . . . Gen Psychology.	4
Soc 101. . . . Intro Sociology	4
Z&E 111. . . . Anatomy & Physiology.	10
Electives and/or Activities (N120, N250, etc.)	13
Sophomore Year	
Art 217. . . . Intro to Art.	3
HE-C 221 Basic Nutrition	4
MB 206 Communicable Disease Control.	3
N 200. Prof Considerations Seminar	3
N 224. Psychosocial Aspects of Nursing I	4
N 251. Transitions in Health & Illness	5
N 252. Nursing Intervention I.	8
Electives and/or Activities (N215, N220, etc.)	18
Junior Year	
N 332. Psychosocial Aspects of Nursing II.	4
N 333. Psychosocial Aspects of Nursing III	4
N 334. Psychosocial Aspects of Nursing IV.	4
N 350. Nursing Intervention II	8
N 351. Nursing Intervention III.	8
N 365. Nursing Intervention IV	8
N 400. Seminar	3
Electives and/or Activities.	8
Senior Year	
N 450. Public Health Nursing	8
N 451. Psychiatric Nursing	8
N 452. Leadership in Nursing	8
N 454. Prof Goals.	3
Nursing Elective	4
Elective and/or Activities	18

A minimum of 192 quarter hours are required for graduation.



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