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An analysis of the test results of forty master of science students on the NLN graduate nurse qualifying examination

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AN ANALYSIS OF THE TEST RESULTS OF FORTY MASTER
OF SCIENCE STUDENTS ON THE NLN GRADUATE
NURSE QUALIFYING EXAMINATION

By

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CHAPTER I

INTRODUCTION

There is a growing need for more nurses qualified through professional education to meet the public's demand for a wider program of health care and a more comprehensive type of nursing service. In response to this demand schools of nursing have been established within colleges and universities. Here, it was felt, preparation for nursing would include professional education preceded or combined with general education. Along with the development of the collegiate school of nursing has grown the belief that specialization should take place on the master's level rather than on the baccalaureate level. As a result, a few universities are now offering a baccalaureate program directed toward the development of a general professional nurse and a master's program in which the focus is on specialization.

At the present time, the majority of nurses still follow the educational pattern of securing basic professional education in a three year diploma school of nursing followed by entrance into a graduate nurse program in a college or university offering general nursing or specialization. Since the experience offered in schools of nursing, collegiate or diploma, is variable, this investigator believes that some objective device is necessary for evaluating the professional background of candidates for the Master of Science program.

This study was done to find out how various professional background factors influenced achievement on the NLN Graduate Nurse Qualifying Examination.

Statement of the Problem

How is nursing knowledge affected by the type of professional education and nursing experience as evidenced by achievement in the NLN Graduate Nurse Qualifying Examination? Answers to the following questions were specifically sought.

1. Does the method by which students obtained their basic professional nursing education affect the scores on the NLN Graduate Nurse Qualifying Examination?
2. Does the nursing experience following basic professional nursing preparation and preceding entrance into the Master's program affect the scores on the NLN Graduate Nurse Qualifying Examination?

Justification of the Problem

At the present time the NLN Graduate Nurse Qualifying Examination is not being universally employed at Boston University School of Nursing to determine whether or not a candidate is eligible for admission to the Master of Science Program. In an interview with a member of the Admissions Committee it was brought out that there was a lack of agreement in the Graduate Nurse Division as to the value of this test in the selection and guidance of Master's students.¹ No research, however, has been

¹ Interview with a Member of Admissions Committee, May 14, 1957.

done in relation to the use of this test for such students.

The policy of the Admissions Committee at the present time is to consider each candidate individually on the basis of secondary school record, character, and personal qualifications including physical fitness and breadth of interest. The candidate must be a graduate of a state accredited school of nursing and be registered as a graduate professional nurse in one state or in one of the territories. The applicant must also have achieved satisfactory scholastic standing in all academic and professional schools attended. In addition, the candidate must hold a suitable Bachelor's degree from an accredited college. Whenever possible a personal interview is required.²

In the selection of students, reliance appears to have been placed primarily on a review of achievement within the earlier educational experience and on the length of successful work experience in a given area of nursing. This study provides an analysis of the effect of these experiences on nursing knowledge as evidenced by the NLN Graduate Nurse Qualifying Examination.

Scope and Limitations

This study was limited to forty Master's students. Examination of the records of Master's students revealed that only forty students had taken the NLN Graduate Nurse Qualifying Examination, Form 1253, as part

²Boston University, Boston University Bulletin, School of Nursing 1956-1957, pp. 47-48.

of their admission procedure. A few had taken the earlier form of the examination which was in use prior to 1954 while others had taken the test in connection with their undergraduate work. Many of the students had no record of having taken either form of this examination. The sample may not be wholly representative of the total group of Master's students but the number should be sufficient to supply some clues as to the effect of certain background factors on test results.

Preview of Methodology

The data for this study was obtained from the students' records in the Registrar's office at the Boston University School of Nursing. The students had taken this examination between 1954 and 1956 as part of the admission requirements to the Master of Science program.

Sequence of Presentation

Chapter II presents a survey of related research and a statement of the hypothesis. Chapter III presents a description of the study group and the statistical method used in analysis of the findings. Chapter IV is a presentation of the findings in graphic form and an analysis of these findings. Chapter V contains a summary of the study and the conclusions and recommendations resulting from it.

CHAPTER II

THEORETICAL FRAMEWORK OF THE STUDY

This investigator has been unable to locate any research directly related to the use of the NLN Graduate Nurse Qualifying Examination for Master's students.

In 1955-1956 a study was done at Teachers College on a group of 334 Master's candidates in relation to their nursing experience and basic professional education.¹ The purpose of the study was to secure information that would help to determine the adequacy of the existing admissions policy for the Master's program. Difficulties in determining what constituted an adequate nursing major in the baccalaureate program for graduate nurses gave impetus to the study. Included in the findings was the following information:

1. Seventy-five per cent of the Master's students had received their baccalaureate degree after graduating from a hospital school program.
2. Seven types of undergraduate degrees were held by the Master's students.
3. Advanced standing granted in undergraduate schools for hospital programs ranged from fifteen to seventy-two points.

¹Division of Nursing Education, Teachers College, "Report of the Study of the Undergraduate Programs of Master's Candidates at Teachers College." (unpublished report), 1955-1956.

4. Time lapse between completion of hospital program and enrollment in baccalaureate programs extended up to twenty-nine years. The average was 4.4 years.
5. Time lapse between receiving baccalaureate degree and starting the Master's degree ranged from less than one year up to twenty-two years. The average was 4.3 years. Eighty-five per cent continued immediately with graduate study.

Examination of the nursing experience of students who received their baccalaureate degrees from schools other than Teachers College revealed the following information:

1. Sixty-five per cent had held staff nursing positions ranging from one to twenty-three years. The average was 4.6 years.
2. Eleven per cent had held administrative positions ranging up to twenty-two years. The average was 6.4 years.
3. One hundred and twenty-one had held supervisory positions ranging up to twenty-five years. The average was 5 years.
4. Less than two per cent had held consultative positions ranging up to eleven years. The average was 3.3 years.
5. Thirty-two per cent had held teaching positions ranging up to eighteen years. The average was 3.3 years.

At the present time Teachers College has a study underway concerning the use of the NLN Graduate Nurse Qualifying Examination for Master's students. No information is yet available on this study.

The most directly related research on the effect of experience on nursing achievement was a study by McManus.² A test of nursing information and judgment was developed and administered to two groups of nurses, one experienced and one inexperienced. The purpose of the

²McManus, R. Louise, The Effect of Experience on Nursing Achievement.

study was to determine the effect of experience in the practice of nursing upon the nurse's ability to answer test questions varying in complexity from simple recall to items involving judgment and reason. No significant difference between the two groups at each level of complexity was found. It was the conclusion of the investigator that experience failed to contribute to success in either the most specific or the most complex items in the test as a whole. Nurses who had had formal education beyond the school of nursing were found to have higher scores on the subtests of varying complexity as well as on the test as a whole. Continued education appeared to influence test scores more than any other factor.

A study was done by Beckley³ for the purpose of discovering to what extent or in what respects individuals who had completed a program of formal training in retailing were better prepared for useful business careers in that field than those who had received all of their training in actual job situations. Work experience was shown to be approximately equal in effectiveness to formal training in teaching specific job techniques. Formal training was shown to be more effective than work experience in the application of principles, interpretation of needs, identification of facts, and comprehension of the nature of distribution.

³Beckley, Donald K., "Evaluating Professional Training Through Use of the Partial Epsilon Technique." Journal of Educational Research 42: pp. 641-650, May 1949.

There were findings in the study by Shaycroft⁴ which seemed to have some implications for the selection of students for Master's programs. It stresses the fact that a test battery primarily measures scholastic ability and has greater value in predicting ability to learn than in pointing out students who will graduate. It also stresses the fact that each school should set up its own norms according to the program offered.

A summary of the findings by various research groups regarding the use of tests for selection and counseling of students in professional colleges has been prepared by the Committee on Student Personnel Work of the American Council on Education.⁵ These studies were concerned with the problem of predicting academic success in schools of engineering, law, medicine, dentistry, music, agricultural training, teacher training, and nursing. It was found that in no instance was any one index so closely related to achievement that reliance upon it alone as a basis for prediction of individual success could be warranted. One of the most important factors contributing to success was found to be general scholastic aptitude. It was the opinion of this committee that the greatest handicap to predicting success was the fact that no simple answer exists to the question of what constitutes a minimum level of achievement or aptitude for success in a professional school because of the variation in standards and curriculums. The members of this

⁴Shaycroft, Marion F., "A Validation Study of the Pre-Nursing and Guidance Test Battery." American Journal of Nursing 50: pp. 201-205, March 1950.

⁵Committee on Student Personnel Work of the American Council on Education, Predicting Success in Professional Schools.

committee stated that the more objective the evaluating tools were the better the predictions turned out to be.

Stuit⁶ stated in his report of his study of medical school students that the number of credit hours in science courses was not found to be related to medical school performance. Emphasis was on quality of the courses rather than quantity. Grades in social sciences and in all liberal arts college work were found closely related to grades earned during the first year of medical school.

In 1941 Crawford⁷ studied a group of 800 students at Yale University Graduate School who had taken the Graduate Record Examination during 1937, 1938, or 1939 as entrants to the school. The purpose of the study was to (1) analyze the relationship of the Graduate Record results and the achievement of success in graduate study, and (2) to determine the predictive power of the Graduate Record Examination as compared with traditional academic records in forecasting success. The criterion used in the first part of this study was survival in the doctorate program. Analysis revealed that the doctorate survival group scored higher on the examination as a whole than did the group who were eliminated from the program. The analysis also revealed that "breadth of educational knowledge is no less important for graduate work than specialized altitude in one's major field."

⁶Stuit, Dewey B., "The Prediction of Scholastic Success in a College of Medicine." Educational and Psychological Measurement 1: pp. 77-84, January 1941.

⁷Crawford, Albert B., Measuring Promise for Graduate Work.

In the second part of the study eighty-six individuals were appraised in terms of their apparent promise at the time of entrance to Yale Graduate School. A forecast of first year achievement was made by the chairman or director of each department within the school based on undergraduate transcripts, records of advanced study elsewhere, publications, honors, and letters of recommendation. A second forecast was made by the investigator and his associate from Graduate Record Examination scores alone. Results showed that the Graduate Record Examination alone could predict either first year or second year ratings of success in graduate study about as well as the whole range of academic data. The best results in predicting success were obtained through a combination of the two methods of appraisal.

In 1941 Crawford⁸ did a preliminary evaluation on the use of the Advanced or B-Level Examination which had been added to the test battery at Yale Graduate School. Whereas the Graduate Record Examination was given to measure objectively the candidate's knowledge throughout the liberal arts and sciences as a whole, the Advanced tests were usually selected on the basis of the student's undergraduate major and usually his prospective field of graduate concentration. The study revealed a reasonably high correlation between B-Level test scores and first year performance ratings in the Yale Graduate School. The investigator stated that these tests could be used to further strengthen the Graduate Record Examination in forecasting individual promise for graduate study.

⁸Ibid., pp. 71-82.

In the report by the Maryland League for Nursing⁹ one of the bases upon which the general statement of philosophy rests is that in nursing, unlike most professions, it is not possible at present to distinguish clearly between basic professional education and continuing education. Basic nursing courses vary so widely that what would be continuing education for the graduate of one school might have been part of the basic preparation for another. These variations exist not only in relation to classroom hours, but also in the type, variety, and extent of classroom experiences offered.

In the light of this situation, this investigator believes that some standardized objective test is needed for the evaluation of individual nursing backgrounds.

The Clinical Test in the NLN Graduate Nurse Qualifying Examination has been constructed in such a way that the questions cover a wide range of difficulty levels. Each question is a useful contributor to the total test in its function to discriminate among the examinees with regard to their general nursing ability. Although designed primarily for applicants to baccalaureate programs it has a high ceiling. In a group of 336 graduating seniors in fully accredited degree programs, the average answered less than two thirds of the 325 questions correctly and none gave the keyed answers to more than 289 questions.¹⁰

⁹Maryland League for Nursing, A Plan for the Continuing Education of Nurses, p. 5.

¹⁰National League for Nursing, The NLN Graduate Nurse Qualifying Examination, Pamphlet No. 3.

This study is being done to determine how nursing knowledge, as evidenced by the NLN Graduate Nurse Qualifying Examination, has been affected by various professional background factors. The first hypothesis is that nursing knowledge, as demonstrated by this examination, will not be affected by the type of basic professional education. The second hypothesis is that length of nursing experience will affect nursing knowledge as demonstrated by this examination.

CHAPTER III

METHODOLOGY

The records of forty entrants to the Master of Science program at Boston University School of Nursing between 1954 and 1956 furnished the data for this study. As part of the admission procedure each student had taken the NLN Graduate Nurse Qualifying Examination, Form 1253. As stated in Chapter I, a few of the Master's students had taken an earlier form of the examination while some others had taken the test in connection with their undergraduate work.

The records for this study were obtained from the student files in the Registrar's Office at the Boston University School of Nursing. Tabulation sheets were set up in such a way that the name of the student and the facts about her preparation and experience could be studied individually as well as treated statistically for the whole group. The achievement results on the NLN Graduate Nurse Examination were obtained from the Admissions Office of the School of Nursing.

The present form of the NLN Graduate Nurse Qualifying Examination consists of three parts:¹

1. American Council on Education (ACE) Psychological Examination for College Freshman, 1948 Edition, a test of general ability consisting of six subtests, three of which (Arithmetic, Figure

¹National League for Nursing, op. cit., p. 3.

Analogies, and Number Series) involve mathematical and spatial abilities, and three of which (Completion, Same-Opposite, and Verbal Analogies) involve verbal abilities. The former three tests are grouped together to yield the quantitative score; the latter three yield the linguistic score. The total score is the sum of the quantitative and linguistic scores.

2. Cooperative English Test - Test C2; Reading Comprehension, (Higher Level) Form S. - Part II; Reading, which yields two scores. The speed of comprehension score takes into account both the speed and the accuracy with which the person taking the test is able to read materials of varying degrees of complexity. The level of comprehension scores, on the other hand, measures the degree of understanding with which she can read a specific amount of material; speed of reading plays no important part in determining this score.
3. Clinical Test (Form 1253), an achievement test, the total score of which gives an indication of the applicant's general nursing abilities which are reflected in the test. The test also yields three subscores which indicate achievement in medical-surgical nursing, maternal and child health nursing, and psychiatric nursing. The total score contains elements not present in the subscores and is therefore neither a sum nor an average of the three subscores.

Performance on this examination is reported in terms of both raw scores and percentiles. The raw score indicates the number of questions to which the applicant knows the correct answer. Percentile scores indicate the percentage of individuals in the group with which the applicant is being compared who made a lower score than she did.

The normative group upon which the percentiles for the ACE Psychological Examination and Cooperative English Test are based consists of 1,742 applicants to graduate nurse programs leading to a baccalaureate degree. The normative group for the Clinical Test consists of 149 entrants in graduate nurse programs. Of this latter group, 115 were in programs leading to baccalaureate degrees, seventeen were enrolled in master's programs, and seventeen were not working for any degree.

CHAPTER IV

FINDINGS

The forty Master of Science students concerned in this group included sixteen graduates of collegiate schools of nursing and twenty-four graduates of diploma schools of nursing. Dates for completion of basic professional education for the collegiate group ranged from 1945 through 1956 and for the diploma group from 1924 through 1954. In checking the records it was noted that most of the students had been actively engaged in nursing since graduation, although not always in the same type of work. Table I shows the distribution of students according to length of nursing experience.

TABLE I
DISTRIBUTION OF STUDENTS ACCORDING TO LENGTH
OF NURSING EXPERIENCE

School	1-5 years	6-10 years	11-15 years	16+ years
Collegiate	11	4	1	0
Diploma	2	7	4	11
Total	13	11	5	11

Out of the eleven students in the collegiate group who appeared in the one to five year range, ten returned to school within two years. No collegiate nursing school graduates appeared in the sixteen years and over range. This was probably due to the small number and comparative newness of collegiate schools of nursing.

The students were engaged in two fields of nursing at the time of entrance in the Master's program. Table II shows that the majority of both groups of students were in the field of nursing service. In checking the student's records, it was noted that ten of the collegiate group and ten of the diploma group planned to enter the teaching field in the future.

TABLE II
DISTRIBUTION OF STUDENTS ACCORDING TO FIELD OF NURSING AT
TIME OF ENTRANCE IN MASTER'S PROGRAM

Field	Collegiate	Diploma	Total
Teaching	5	9	14
Nursing service	11	15	26

At the time of entrance in the Master's program, the majority of students were engaged in the area of nursing which they had selected as their program major. Table III shows the distribution of the group according to area of nursing at time of entrance in Master's program. More nurses were in medical-surgical nursing than in any other area. Thirty per cent of the total group were in this classification.

Thirty per cent of the collegiate group were in psychiatric nursing and thirty-three per cent of the diploma students were in public health nursing.

TABLE III

DISTRIBUTION OF STUDENTS ACCORDING TO AREA OF NURSING
AT TIME OF ENTRANCE IN MASTER'S PROGRAM

Area	Collegiate	Diploma	Total
Medical-surgical nursing	4	8	12
Obstetrical nursing	2	0	2
Pediatric nursing	1	2	3
Public health nursing	3	5	8
Psychiatric nursing	5	3	8
Rehabilitation nursing	1	2	3
Administration*	0	4	4

*Administrators of educational and nursing service programs.

Percentiles of median scores on the ACE Psychological Examination and the Cooperative English Test are shown in Table IV.

TABLE IV

PERCENTILE OF MEDIAN SCORES ON THE ACE PSYCHOLOGICAL EXAMINATION AND THE COOPERATIVE ENGLISH TEST FOR ENTRANTS TO MASTER'S PROGRAM AND NORMATIVE GROUP UPON WHICH PERCENTILES ARE BASED

Test	16 entrants to Master's program with collegiate background	24 entrants to Master's program with diploma background	40 entrants to Master's program	1,742* applicants to graduate nurse programs
ACE Psychological Examination				
Total	80	63	70	69
Quantitative	80	28	44	47
Linguistic	78	74	79	78
Cooperative English Test				
Speed of comprehension	67	37	49	74
Level of comprehension	67	43	61	73

*National League for Nursing, op. cit., p. 11.

Table IV shows that the students with collegiate nursing school backgrounds achieved higher scores on all parts of the ACE Psychological Examination and the Cooperative English Test than did the students with diploma nursing school backgrounds. Analysis of individual scores revealed that the students were representative of a wide ability range as

measured by this examination. This is shown in Table V.

TABLE V

DISTRIBUTION OF STUDENTS ACCORDING TO PERCENTILE SCORES ON THE ACE PSYCHOLOGICAL EXAMINATION AND THE COOPERATIVE ENGLISH TEST

Percentile	Cooperative English Test		ACE Psychological Examination		
	Speed	Level	Total	Quantitative	Linguistic
91-100	3	5	9	10	9
81- 90	6	4	6	0	7
71- 80	3	3	3	5	6
61- 70	4	8	8	3	6
51- 60	4	4	4	2	3
41- 50	5	4	2	1	3
31- 40	3	5	2	4	2
21- 30	8	2	0	6	2
11- 20	3	5	3	7	0
0- 10	1	0	3	2	2

On the Speed test twenty students fell in the 0 to 50th percentile range and nine in the 71 to 100 percentile range. On the Level of Comprehension test sixteen appeared in the 0 to 50th percentile range and twelve in the 71 to 100 percentile range. In the total score for the ACE Psychological Examination ten fell in the 0 to 50th percentile range and eighteen in the 71 to 100 range. On the Quantitative test

twenty were in the 0 to 50th percentile range and fifteen in the 71 to 100 range and on the Linguistic test nine fell in the 0 to 50th range while twenty-one students appeared in the 71 to 100 percentile range.

The mean scores and standard deviations of the group on the Clinical Test, Form 1253, are shown in Table VI. The table also includes scores made by two groups which have been compiled by the National League for Nursing.¹

Analysis of Table VI revealed a difference in the test results of the collegiate and diploma students. The greatest difference appeared in the Total score which represented over-all nursing ability. A lesser difference appeared in the scores on the three subtests. Although the variations were small, the collegiate scores were consistently higher than the diploma scores. It was also apparent from the standard deviations that the collegiate students were a more homogeneous group.

In the National League for Nursing study of the achievement on the Clinical Test by various pre-service groups, the highest scores were found in the group of 421 seniors in fully accredited degree programs. Comparison of the scores of this group with the Master's group showed that the Master's students were higher in all tests with the exception of the Maternal and Child Health subtest.

¹National League for Nursing, op. cit., p. 20.

TABLE VI

MEAN SCORES AND STANDARD DEVIATIONS ON THE CLINICAL TEST, FORM 1253,
OF THE NLN GRADUATE NURSE QUALIFYING EXAMINATION
FOR ENTRANTS IN MASTER'S PROGRAM

Clinical Test	16 entrants in Master's program with collegiate background	24 entrants in Master's program with diploma background	40 entrants in Master's program	421* seniors in fully accredited pre-service degree programs	149* entrants in graduate nurse programs
Total					
Mean	221.8	207.5	213.2	208.3	193.3
S.D.	19.0	31.1	31.2	30.1	19.0
Medical-surgical					
Mean	65.6	62.0	63.5	59.5	56.3
S.D.	7.5	9.8	9.2	10.1	9.7
Maternal and child health					
Mean	45.3	43.3	44.1	46.0	42.3
S.D.	3.8	8.3	5.7	6.5	6.5
Psychiatric					
Mean	37.2	33.0	34.5	32.3	29.3
S.D.	3.2	6.7	6.0	7.0	6.4

*National League for Nursing, op. cit., p. 20

Comperison was made with the NLN normative group of 149 entrants to graduate nurse programs as this group most closely resembled the Master's group. The NLN group consisted of 115 students in programs

leading to baccalaureate degrees, seventeen enrolled in Master's programs, and seventeen who were not working for any degree. The scores of the Master's students at Boston University were higher on all parts of the Clinical Test.

In Table VII and Table VIII Clinical Test scores are shown in relation to length of nursing experience. Table VIII shows that the scores of the total group decreased gradually through the one to five, six to ten, and eleven to fifteen year categories. This slight downward trend was reversed in the sixteen years and over category. With the exception of the score on the psychiatric subtest, the scores of this group with over fifteen years experience were the same as the total group scores in the six to ten year category. This group with over fifteen years experience was composed of only graduates of diploma schools of nursing.

TABLE VII

MEAN SCORES FOR COLLEGIATE AND DIPLOMA SUBGROUPS ON CLINICAL TEST, FORM 1253, IN RELATION TO LENGTH OF NURSING EXPERIENCE

Clinical Test	1-5 years		6-10 years		11-15 years		16+ years
	Coll-egiate	Di-ploma	Coll-egiate	Di-ploma	Coll-egiate	Di-ploma	Di-ploma
Total	218.1	242	236.2	195.8	208	201.2	210.9
Medical-surgical	65.1	75	67.7	59.8	62	58.5	62.6
Maternal and Child health	44.5	48.5	49	39.7	40	44.7	44.1
Psychiatric	36.3	39	40.2	31	35	33.2	32.1

TABLE VIII

MEAN SCORES FOR TOTAL GROUP ON CLINICAL TEST, FORM 1253, IN
RELATION TO LENGTH OF NURSING EXPERIENCE

Clinical Test	1-5 years	6-10 years	11-15 years	16+ years
Total	221.8	210.5	202.6	210.9
Medical-surgical	66.6	62.5	59.2	62.6
Maternal and Child health	45.1	43.1	43.8	44.1
Psychiatric	36.7	34.5	33.8	32.1

With the exception of the total nursing score and the medical-surgical score obtained by the two diploma students in the one to five year range, the highest scores were found in the collegiate group with six to ten years of nursing experience. The lowest scores were found in the diploma group with six to ten years of experience.

The investigator believes that the most significant finding in this area of the study was the test results shown by the group of eleven diploma students in the sixteen years and over category. These students were the furthest from basic professional programs and, with the exception of the maternal and child health subtest, they achieved higher scores than the NLN study group of 421 collegiate students in fully accredited pre-service programs shown in Table VI.

Distribution of Clinical Test scores in relation to type of nursing

engaged in at time of entrance in Master's program is presented in Table IX. This table shows that the collegiate students who were in medical-surgical nursing at the time of entrance in the Master's program achieved higher scores on the medical-surgical subtest. This same group, however, held the highest scores on all parts of the Clinical Test. The lowest scores on the medical-surgical subtest were found in the diploma group in medical-surgical nursing and the lowest scores on all parts of the Clinical Test were held by this group.

TABLE IX

MEAN SCORES ON CLINICAL TEST, FORM 1253, IN THE NLN GRADUATE NURSE QUALIFYING EXAMINATION ACCORDING TO TYPE OF NURSING AT TIME OF ENTRANCE IN MASTER'S PROGRAM

Clinical Test	Medical-surgical nursing			Maternal-child health nursing			Psychiatric nursing		
	Col- legi- ate	Di- plo- ma	Total	Col- legi- ate	Di- plo- ma	Total	Col- legi- ate	Di- plo- ma	Total
Total	236.3	170.3	192.4	210	219.1	214.9	221.4	215.2	218.6
Medical-surgical	71.2	51.3	57.9	61.8	63.2	62.6	64.6	63	63.8
Maternal and child health	47	36.4	39.9	44	45.8	45	45.4	45	45.2
Psychiatric	39.2	27.2	31.2	35.6	34.2	35.3	37	33.7	35.5

The findings from this analysis seem to agree with the NLN validation study which indicated that the Clinical Test appears to measure a general clinical ability to a much greater extent than ability in specific areas of clinical instruction.²

Clinical Test scores were examined in relation to the fields of teaching and nursing service. The findings appear in Table X.

TABLE X
MEAN SCORES ON CLINICAL TEST, FORM 1253, OF THE NLN GRADUATE NURSE QUALIFYING EXAMINATION IN RELATION TO TEACHING AND NURSING SERVICE BACKGROUND

Clinical Test	Teaching			Nursing service		
	Coll-egiate	Di-ploma	Total	Coll-egiate	Di-ploma	Total
Total	229.6	206.2	214.6	218.3	208.2	212.5
Medical-surgical	67.6	62.4	64.2	64.7	61.8	63
Maternal and child health	45.8	43.3	44.2	45.1	43.4	44.1
Psychiatric	39	30.8	33.7	36.4	33.6	34.8

Analysis of Clinical Test scores presented in Table X showed no significant difference between the scores of students in the fields of

²National League for Nursing, "The NLN Graduate Nurse Qualifying Examination." Nursing Research 3: pp. 21-25, June 1954.

teaching and nursing service. Here again, the students with collegiate nursing school backgrounds held higher scores on all parts of the test.

The findings from this study have been summarized in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study was done in an attempt to answer the question of how nursing knowledge was affected by the type of professional education and nursing experience as evidenced by achievement in the NLN Graduate Nurse Qualifying Examination. The investigator expected to prove the hypothesis that nursing knowledge, as demonstrated by this test, would not be affected by the type of basic professional education. The second hypothesis was that length of nursing experience would affect nursing knowledge as evidenced by this examination.

The findings of this study in terms of the analyzed data are:

1. Sixty-two per cent of the students from collegiate schools of nursing entered the Master's program within two years after completion of their basic professional education. Forty-five per cent of the students from diploma schools of nursing entered after a period of sixteen or more years.
2. Nursing experience for the students from collegiate programs ranged from less than one year to eleven years with an average of 2.3 years. Experience for students from diploma schools ranged from two to thirty-two years with an average of 16.7 years.
3. The average length of experience for the total group was 10.9 years.

4. At the time of entrance in the Master's program, thirty-five per cent of the students were in the teaching field.
5. Fifty per cent stated at the time of application that they planned to teach.
6. Thirty per cent of the students were working in the area of medical-surgical nursing, twenty per cent in psychiatric nursing, and twenty per cent in public health nursing.
7. The group of students with collegiate nursing school backgrounds had the highest median scores on the ACE Psychological Examination.
8. On the Quantitative Tests in the ACE Psychological Examination fifty per cent of the total group had scores below the 50th percentile and thirty-seven per cent had scores above the 75th percentile. On the Linguistic Tests in the same examination twenty-two per cent were below the 50th percentile and forty-seven per cent were above the 75th percentile.
9. The students with collegiate nursing school backgrounds had the highest median scores on the Cooperative English Test.
10. On the Speed of Comprehension Tests in the Cooperative English Test fifty per cent of the total group had scores below the 50th percentile and twenty-five per cent had scores above the 75th percentile. On the Level of Comprehension Tests forty-two per cent were below the 50th percentile and twenty-five per cent were above the 75th percentile.
11. Nursing knowledge, as demonstrated by the Clinical Test, Form 1253, was affected by the type of basic professional education.

Students with collegiate nursing school backgrounds achieved higher scores than students with diploma backgrounds. Although the difference was small, it was consistent through all parts of the test.

12. Standard deviations were larger on all parts of this test for the students with diploma backgrounds.
13. Nursing knowledge, as demonstrated by this test, was affected by length of nursing experience. Mean scores of the total group decreased gradually as experience lengthened from one to five years, six to ten, and eleven to fifteen years. Scores in the sixteen years and over category were the same as those in the six to ten year category.
14. Nursing knowledge, as demonstrated by this test, was not affected by the background factors of teaching, nursing service, or area of nursing such as psychiatry, etc.
15. Scores of the forty Master's students were higher than the scores of the normative groups used by the NLN Evaluation and Guidance Service for standardization of scores on the Clinical Test in the Graduate Nurse Qualifying Examination.

The first hypothesis that nursing knowledge, as demonstrated by the NLN Graduate Nurse Qualifying Examination, would not be affected by the type of basic professional preparation was disproved. Students with Collegiate nursing school backgrounds consistently achieved higher scores on this examination than did students with diploma backgrounds.

The second hypothesis that length of nursing experience would affect nursing knowledge, as demonstrated by this examination, was proved. Scores decreased as experience lengthened from one to five, six to ten, and eleven to fifteen years.

Recommendations

1. This investigator recommends that a follow-up study be done to compare achievement on the NLN Graduate Nurse Qualifying Examination with achievement in the School of Nursing.
2. It is also recommended that a study be done on the predictive value of the NLN Graduate Nurse Qualifying Examination for the graduate nurses in the baccalaureate program.
3. A study patterned on Crawford's study at Yale might prove valuable in determining the adequacy of the above examination as a predictor of success. This would be a comparison of the predictive value of this test with the predictive value of such factors as undergraduate transcripts and personal interviews.
4. A study could be done in which the scores earned on the Clinical Test would be compared with abilities subsequently demonstrated by students in the various clinical areas of nursing.

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