

CONTRIBUTION OF CHILD GROWTH AND DEVELOPMENT
AS AN ALLIED DISCIPLINE
TO MATERNAL-CHILD NURSING

by

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ABSTRACT

This study deals with the contribution of the subject matter specialists in allied disciplines, to the nursing curriculum at Montana State College, Bozeman, Montana. The focus of this study is limited to the Home Economics Courses of Child Development (H. Ec. 105) and Later Childhood and Adolescence (H. Ec. 305) and the importance of their contribution as that contribution is manifested in the behavior of the students in Maternal-Child Nursing. Nursing curriculum depends, to a considerable extent, on the contribution of subject matter specialists for basic understandings of student nurses in hospital areas.

A method was developed by which some of the contribution to the nursing curriculum made by subject matter specialist may be identified. Certain subject matter concepts used by student nurses in learning Maternal-Child Nursing but which were taught in Child Growth and Development were established.

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TABLE OF CONTENTS

	page
I. INTRODUCTION	
The Problem - - - - -	1
Selection of Problem - - - - -	1
Statement of Problem - - - - -	5
Objectives of the Study - - - - -	5
Importance of the Study - - - - -	6
Hypothesis - - - - -	7
Definition of Terms Used - - - - -	8
Procedure - - - - -	10
Selection of Material - - - - -	10
Selection of Sample of Students - - - - -	12
Limitations of Study - - - - -	12
Method of Obtaining Data - - - - -	13
II. PRESENTATION OF FINDINGS	
Criteria for Evaluating the Data - - - - -	16
Differences Between Course Content in Child Growth and Development and Maternal-Child Nursing - - - - -	21
III. SUMMARY - - - - -	26
IV. CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER STUDY	
Conclusions - - - - -	28
Implications - - - - -	29
Recommendations for Further Study - - - - -	31

APPENDIX A

Cover Letters sent with Tests	- - - - -	32
Constructed Test	- - - - -	34
List of Differences	- - - - -	46

APPENDIX B

Overall Objectives	- - - - -	53
Frequency Distribution	- - - - -	54
Range	- - - - -	54
Raw Scores	- - - - -	55
Ranks	- - - - -	57
Student Profiles	- - - - -	59

BIBLIOGRAPHY

CONTRIBUTION OF CHILD GROWTH AND DEVELOPMENT
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PART I

INTRODUCTION

The Problem

Selection of Problem

"Nursing, as an applied science, develops its principles by inter-relating ones from all other known sciences and applying them to everyday nursing problems."¹ On the campus of Montana State College, one of the 'other known sciences' that Miss Peplau is talking about is Child Growth and Development, which includes Child Development and Later Childhood and Adolescence, in the Home Economics department. In a study that was reviewed by Fedder in her discussion of literature which is pertinent to this study, she states that

The need for clinical instructors to help students apply basic science principles was emphasized by Skinner (9). This study, which was designed as a guide in a specific teaching situation, indicated an increasing tendency to teach the basic sciences to student nurses in classes with other college students; these courses were often not directed toward nursing. Pretests in the clinical area indicated that many student nurses had a knowledge of basic science principles, but were unable to apply them to nursing care of their patients.²

Is it the teaching that is at fault because the students cannot transfer their knowledge from one subject area to another? If not,

¹Peplau, Hildegard E., Interpersonal Relations in Nursing. New York: G. P. Putnam's Sons, 1952, page 14.

²Fedder, Helma Julie, "Basic Science Concepts Essential in Planning Nursing Care," Nursing Research. (4:101) Number 3.

just what is the reason? John I. Goodlad says that there are three factors which predominate in the learning-teaching act. These factors are the learners, something to be learned, and a process through which learning takes place. He further states that these dimensions constitute the core of solid matter of the learning-teaching act. There are desirable organizational centers from learning and teaching and these would include, to be adequately comprehensive, a breath of ideas which would allow for individual differences, an organizing capacity which would permit for the building from the known to the unknown with ideas and materials, and a capacity for movement, for the intellectual movement from facts to generalizations and then on to applications.¹

To be able to recognize the abnormal one must first be able to recognize the normal.² This is one of the basic assumptions in nursing theory. If one does not know what the normal is, how can one recognize what is not normal? Just what is normal? Dr. Roger J. Williams did a study in the chemical makeup of man and found that when one item or characteristic was used to compare people that 95% of them would lie within the average while only 5% would deviate from this. He explained that what was abnormal was that which deviated from the 95% population on the one item. If two items were to be considered then only 90% would lie within the normal range of the initial 95% group. When considering 10 items, then of the original 95% only 60% would

¹Goodlad, John I., "Three Dimensions in Organizing the Curriculum for Learning and Teaching," Vincent J. Glennon, Ed., Frontiers of Elementary Education. New York: Syracuse University Press, 1956, pages 11-22.

²Stone, Joseph, and Church, Joseph, Childhood and Adolescence. New York: Random House, 1957, pages 346-347.

still be considered normal. When dealing with 100 items only one-half of one percent would be found left in the normal range of the original 95%.¹ Since each individual must be considered as an entire person, is there such a thing as a 'normal' individual?

In spite of the obvious discrepancy in logical thought as to what is 'normal' and the ability to recognize the 'normal,' the nursing curriculum tries to establish in the student the concept of 'normal' in the emotional, social, mental, and physical development of a child. This practice is regarded as necessary in order to give the student a basis from which recognition of the abnormal can stem.

In the nursing curriculum, the campus courses offered at Montana State College in child growth and development are in the allied discipline field. Many people criticize the use of subject matter specialists on the grounds that they teach inappropriately, i.e. the objectives from which they teach are too technical for the large majority of the students.²

The questions which they (subject matter specialists) should be asked runs somewhat like this: What can your subject contribute to the education of young people who are not going to be specialists in your field? What can your subject contribute to the layman, the garden variety of citizen? If subject specialists can present answers to this question they can make an important contribution, because, presumably, they have a considerable knowledge of the specialized field and many of them have had opportunity both to see what this subject has done for them and for those with whom they work. They ought to be able to suggest possible contributions, knowing the field as well as they do, that it might make to others in terms of its discipline, its content, and the like.³

¹Williams, Dr. Roger J., "Chemistry Makes the Man," Saturday Review. April 6, 1957, pages 42-46.

²Tyler, Ralph W., Basic Principles of Curriculum and Instruction. Chicago: University of Chicago Press, 1950, page 17.

³Ibid., pages 17-18.

Most of the answers to the above questions are written in the form of reports and most of the reports do not stop with the objectives of the course. Many of the specialists do not specifically list objectives. There are generally two kinds of suggestions that can be gleaned from the reports as far as the objectives are concerned: (1) a list of suggestions regarding the broad functions that a particular subject can serve, and (2) the particular contributions that the subject can make to other large functions that are not primarily functions of the subject concerned.¹

It is desirable for nursing students, as a general rule, to have special preparation in human relations. "They need to understand the influence of emotional and social forces, and particularly the effect which the family background has on human behavior."² In obstetrics there is further emphasis placed on the respect for one's own personality and the personality of others; emphasis placed on the recognition of limitations in the self, in others; and appreciation of the importance of causal sequence in behavior; and last, an understanding of all the needs which motivate behavior.³

It was this need for understanding of self, of the influences of emotional and social forces in the patients background and its relation to the behavior exhibited by the ill person that made a change from content-centered nursing curriculum to patient-centered nursing cur-

¹Tyler, *op. cit.*, page 18.

²Burton, Genevieve, "Education for Life: Developing Insight and Understanding in the Classroom," Nursing Outlook. (4:265-267) May, 1956, page 265.

³Carroll, Herbert A., Mental Hygiene, The Dynamics of Adjustment. New York: Prentice-Hall, Inc., 1947, page 12.

riculum important and necessary. Vreeland and Knott conducted a study for analyzing the costs of collegiate schools of nursing. There were four major areas of concern that they felt needed evaluation. They were: (1) the broad general area of how much curriculum and basic clinical experience is necessary for a qualified professional nurse; (2) what the relationship is between the value of services given by the students and the clinical experience needed by student nurses; (3) should the clinical experiences and the students service value be negotiated in terms of finance?; and (4) the financial structure of the nation's nursing education system.¹ These authors were trying to determine what was the basic clinical experience necessary for nurses. They felt that there was too much emphasis placed on how many beds a student made or how many 'surgical' patients the student cared for rather than the type of care the student gave these 'surgical' patients.²

Statement of the Problem

It was the purpose of this study to determine what is the nature of the contribution of a subject matter specialist in an allied discipline as the contribution is manifested in the learning (behavior) of nursing students as practiced in Maternal-Child Nursing?

Objectives of the Study

The main objective of this study was to determine the degree of readiness of the students entering Maternal-Child Nursing in the

¹Vreeland, Elwynne M., and Knott, Leslie W., "What are the Issues in the Evaluation of Student Service," Nursing Outlook. (4:262-264) May, 1956, pages 262-264.

²Loc. cit.

hospital following the campus courses in child growth and development. Along with this the author hoped to discover if the material covered in the subject specialist's field was used in the practice of nursing.

These objectives were an indirect method of investigating the problem under consideration. They supported the problem in this way. They were used as a basis and as a guide in this study.

Importance of the Study

This research project was one part of the total curriculum research project being carried on by the faculty at Montana State College School of Nursing. The degree program was undergoing a change with a reorganization of the lower division of the school, as plans were made to meet the requirements of a two-year diploma program. Part of the reorganization was the addition of these courses in child growth and development before Maternal-Child Nursing was offered.

The nature of the contribution of subject matter specialists as that contribution is manifested in the behavior of nursing students is a critical area in the nursing curriculum. In order that subject matter and learning experiences be selected and organized for students in Maternal-Child Nursing, the related knowledge gained in Child Growth and Development needed to be established.

The author took the child growth and development courses as a registered nurse in the fall of 1958. Enrollment at this level of nursing education was contrary to curriculum planning for nursing but the course was needed to supplement students knowledge and to meet one area of the academic requirements for the Bachelor of Science degree in nursing.

It was recognized that the emphasis placed on one area of content by one instructor might well be placed in a different area by a different instructor. This knowledge mastered by the students in child growth and development might have to be altered or revised when she enters the Maternal-Child Nursing field in the hospital. To do so would appear to place an additional burden on the student. After talking to some of the Maternal-Child Nursing instructors, the author learned that the majority of them did not feel the students were getting the information necessary for an adequate background in Maternal-Child Nursing. They said that it was necessary to teach material which they believed should have been taught on campus. Their statements applied to all the allied disciplines which contribute concepts to Maternal-Child Nursing offered at the pre-clinical nursing level. Their remarks were not limited to just one discipline of the background. It is further recognized that child growth and development is just one part of the entire background of readiness of the student entering the Maternal-Child Nursing field. Some of the other allied disciplines which contribute subject matter content to this background are: (1) Anatomy and Physiology, (2) Psychology, (3) Sociology, (4) Chemistry, and (5) Nutrition.

The instructor in child growth and development does not make specific application of the content in child growth and development to Maternal-Child Nursing, but tries to cover the material in such a way that it is pertinent to all students required to take the course.

Hypothesis

- 1) The subject matter of the allied discipline, Child Growth and Development, is necessary to Maternal-Child Nursing in the hospital.

2) When the nursing faculty, during the course in Maternal-Child Nursing, made reference to the principles of child growth and development, the nursing students' recognition of these principles tended to increase their learning.

Definition of Terms Used

In order to have a common understanding, and to prevent misunderstanding, the following definitions were used.

Readiness: This term was used to mean properly equipped with the necessary background material for the hospital courses in Maternal-Child Nursing. To have a basic knowledge and understanding of the accepted 'normal' or 'average' child.

Normal: This term referred to the accepted 'average' or 'normal' child, within which 95% of the children lie when considering a single characteristic. This norm would change to include a different 95% with a change of each characteristic considered.

Average: This referred to the general rule, where most of the population tended to fall in a given situation.

Placement Tests: This referred only to the American College of Education Achievement Test Total Stanine Score.

Maternal-Child Nursing: Referred to in the paper as MCN, this was a combination focused against the two courses, Obstetrics and Pediatrics. The textbooks used in MCN are: (1) Jeans, Philip, Wright, F. Howell, and Blake, Florence, Essentials of Pediatrics, Sixth Edition, Philadelphia: J. B. Lippincott Company, 1958; and (2) Van Barclom, Carolyn and Ziegel, Erna, Obstetrical Nursing, Fourth Edition, New York: McMillan Company, 1958.

Subject Matter: This referred to the material covered in the child growth and development classes on campus.

Subject Matter Specialist: She was the Home Economics Instructor of Child Growth and Development.

Child Growth and Development: This included the campus courses of H. Ec. 105, Child Development and H. Ec. 305, Later Childhood and Adolescence. These two classes cover the development of the child from conception through adolescence in the areas of physical, emotional, social and mental growth. The textbooks used in these courses are: (1) U. S. Children's Bureau #8 - Infant Care; (2) U. S. Children's Bureau #30 - Your Child From One to Six; (3) Spock, Benjamin, Pocket Book of Baby and Child Care; and (4) Stone, Joseph, and Church, Joseph, Childhood and Adolescence. New York: Random House, 1957.

Knowledge: This term referred to the emphasis placed on remembering, either by recognition or recall, the ideas, material, or phenomena learned earlier.¹

Comprehension: This term referred to the ability to understand what was being communicated and the ability to put that material or those ideas to use.²

Allied Discipline: This term referred to that course of study which was not contained within the nursing department proper, but which was necessary for the complete education of the student nurse and which was necessary as part of the background knowledge of students in clinical nursing.

¹Bloom, Benjamin S., Taxonomy of Educational Objectives (Handbook I: Cognitive Domain). New York: Longman, Green and Co., 1956, page 62.

²Ibid., page 89.

Course Grades: This term was used to mean the grade points earned for the specific course referred to at the time this term was used.

Modified True-False: This term referred to the first section of the constructed test given during the course of this study in which all false statements had to be corrected. This was done to help eliminate the guessing factor in that particular section of the test.

Constructed Test: The test instrument constructed by the author for this study was referred to in this study as the test.

Procedure

Selection of Material

When commencing the work on the paper the author contacted the instructors in MCN in the three hospital units, Billings, Great Falls, and Butte, asking them what knowledge they considered important for students to have as background material when entering their field in the hospital. One hospital instructor did not reply. One stated, among other things, "that the student should know the physical characteristics of the normal newborn." The other instructor who replied, stated in part, "the students had no skill in applying knowledge and they could not transfer from the verbal to the practical situation, that they should know the physical, as well as some emotional, social, and mental characteristics of the child." With these recommendations in mind the subject matter specialist was approached with the basic ideas and a brief sketch as to what was being attempted by the author.

Having taken the course in Child Growth and Development the author recognized the fact that some of the knowledge identified as lacking in the student was present in the course. Specifically some

of the material which the nursing instructors considered important in child growth and development was covered in the lectures, reading assignments, and in the class tests. The author went to the subject matter specialist in order to confirm the presence and extent of coverage of certain subject matter in the course content. This subject matter was to be dealt with in the test instrument developed for this study.

With the help of the subject matter specialist the test items were drawn from the subject matter and from teacher-made tests, which included the final and midterm tests of the child growth and development classes. After selecting the questions from the tests (using every sixth question) the items were then reworded by the investigator to prevent simple recall. Following this step the test and key were reviewed by the subject matter specialist to make sure that all the material presented in the two classes was covered; the key checked to be certain of correctness, according to course content of the classes. The test was a subject matter, content-centered test.

Following the subject matter specialist's help with the test, the next step was to have a jury of experts check the test for clarity of thought and ease of reading. The jury was composed of two people, one who had a Bachelor of Science in Education, a major in English, and one who had a Master of Science in Education, a major in English. The latter jury member is an English instructor in a high school, the former is a junior accountant, working with a certified public accountant. The final step in the preparation of the test was to make such corrections as were deemed necessary to clarify the wording of the test questions.

Selection of Sample of Students

The selection of the sample at first appeared to be no problem. All students from Montana State College School of Nursing in the MCN field of the hospital units were included. There were two units used in the study, Butte and Great Falls. The third unit was omitted because they were not offering MCN fall quarter, 1959. The same students were used for the retest. The sample was a total of 16 students, 8 from each hospital unit, who had entered the collegiate program of Montana State College in September, 1958. All transfer students were eliminated as were those who had entered the school previous to September, 1958, leaving a total of 11 students. The college entrance placement test scores of the students in the sample ranged from 3 up to 8.

Limitations of Study

This study was limited to the September 1958 class of students that entered the MCN area in the hospital in September 1959. It was realized that some of the material presented in the test (see Appendix A for a sample of the test) might have been irrelevant to nursing but the test was a content-centered test from the subject matter specialist's field. It is also recognized that the test was a hurdle test in which the students were required to pass most of the items. The test, however, was given for this purpose, and not as an instrument to spread out the group so that the average student would fall in the middle of the scale. It was also recognized to some extent, that in a hurdle test, the findings would be affected by allowing the chance factor in the statistical data to be greater.

Two other questions that were recognized in the course of this paper were: (1) Can a method be developed which may be useful in determining the nature of the contribution of a subject matter specialist from an allied discipline to the practice of nursing? and (2) Why do we use subject matter in the way that we do? It was not the purpose of this study to answer all questions that arise. Nor was this study set up in terms of cause and effect.

Method of Obtaining Data

The constructed test was given to the students in the hospital units at Butte and Great Falls in the MCN clinical experience the first week of fall quarter 1959 and the test was repeated with these same students the last week of the quarter.

The results of the first test were analyzed in the following manner: (1) Split-half correlation for reliability (Spearman-Brown rho); (2) Range determination for the group; (3) Frequency distribution; (4) Rank correlation between the students' test results and the course grade in MCN; (5) Rank correlation between their placement test score and the test score; (6) Rank correlation between the test score and the child growth and development course grades; and (7) Rank correlation between the National League for Nursing Obstetrics and Pediatrics Achievement Test results, using the percentiles of the total diploma and degree nurses taking the tests.

The results of the second test were analyzed in the following manner: (1) Range determination; (2) Frequency distribution; (3) Test-retest rank correlation for reliability; (4) Rank correlation between the test score and the MCN course grade; (5) Rank correlation between

the test score and the course grade in child growth and development; and (6) Rank correlation between the test score and the National League for Nursing Obstetrics and Pediatrics Achievement Test results, using the same percentiles as on the first test.

The course grades earned in the different classes were correlated individually with the placement score. The League test score was also correlated with MCN and with child growth and development course grades individually.

The following verbal picture is a diagrammatic presentation of the relationship of 1) Subject Matter Specialists and Nursing Curriculum to the nurse and 2) the specific subject matter specialist in child growth and development (as one area of subject matter) and MCN to the practice of nursing is shown.

 I

Subject Matter Specialists with special contributions	Nursing Curriculum	The Nurse
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II

<u>Subject Matter</u>	<u>Nursing</u>	<u>The Nurse</u>
Child Growth and Development (Anatomy and Physiology) (Psychology) (Sociology) (Chemistry) (Nutrition) (English) (Bacteriology)	MCN Practice MCN Theory Selected experiences in relation to mothers and children outside the hospital	Practice of Nursing in the MCN Field

PART II

PRESENTATION OF FINDINGS

Criteria for Evaluating the Data

All the statistics were obtained using the Spearman-Brown rank correlation. There are, however, two major factors of consideration. When using rank correlation it must be remembered that this type of correlation assumes that intelligence is a constant factor and that all differences are in the other abilities of the individual person. Because of the small sample available at the time this study was conducted, the Spearman-Brown rho was used.

The test was sent to the hospital units in which it was to be given. The tests were returned to the author for correction and evaluation. The correct answers were those developed from the materials given in the classes in child growth and development. There were two types of questions used in this test. The first two sections tested the knowledge¹ gained in the child growth and development classes, with modified true-false to help eliminate guessing. The third section required comprehension¹ in answering the questions. When a high negative correlation, $-.88$, was received on the split-half for reliability, a split-half was done on each section of the test to try to determine where the factor for the high negative correlation lay. The results received on the individual sections were: True-False = $-.95$; Vocabulary = $.53$; and Characteristics = $.29$. Unless noted by a minus sign (-) preceding the correlation result, it may be assumed that the

¹The reader is referred to the specific definitions of these terms as explained on page 9 of this study.

direction of the correlation is positive. The negative correlations may have been due to chance since all scores tended to fall within a small portion of the scale (see Appendix B for the frequency distribution and range). This test was not for the purpose of showing the individual student's position on a scale. The negative correlations may also have been due to poor guessing.

Since the test was made up of two distinct types of questions and the tests given in the child growth and development courses were of the knowledge type, a correlation of the true-false section with child growth and development was done, with a result of .42. Then, more out of curiosity than for any other reason, a correlation was done between the characteristics section and the child growth and development course, with a result of -.84. In the child growth and development course the true-false tests were not modified in any way. In the test used for this study the true-false section was modified, the student correcting all false statements by changing the underlined word. This was done to help eliminate the guessing factor. It is recognized that the guessing factor cannot be ruled out altogether. Skewing the results in the true-false section to a positive answer was another method used to help rule out guessing.

Tyler summarized the process of validation of a test in the following manner:

All methods of measuring human behavior involve four technical problems: (1) defining the behavior to be evaluated, (2) selecting the test situations, or determining the situations in which the behavior is expressed, (3) developing a record of the behavior that takes place in these situations, and (4) evaluating the behavior recorded. Regardless of the type of appraisal under consideration, whether it be the observation of children at play, the written examination, the techniques of the psychological laboratory, the questionnaire, or the personal interview, these problems are encountered.

The choice of the methods of measurement rests primarily upon the effectiveness with which the methods solve these problems in the particular case under consideration.¹

Tyler regarded a valid test as one which afforded satisfactory evidence of the degree to which the students were actually reaching the desired objectives of teaching, these objectives being specifically stated in terms of the kinds of behavior expected in the students.

In the following table the author has given the different rank correlations and their results. The behavior to be evaluated was the degree of comprehension the students had arrived at by taking courses in child growth and development. The behavior was further defined as specific knowledge of the subject matter included in the child growth and development courses and required to answer the test items. The test situation was the classroom in the individual hospital unit, and the test was administered by the instructors, with directions printed on the test for the student and instructions sent to the individual instructor with the tests. The test situation was the same in both test and retest to help rule out some of the intervening variables. The students were told that this test would in no way affect their grades.

As another method of test validation in the study, the results of the National League for Nursing Achievement Tests in the areas of Obstetrics and Pediatrics were correlated with the first test, with a correlation of .31; with the second test, with a resulting correlation of .76; with the course grades in child growth and development for a

¹Thirty-Fourth Yearbook of the National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1935, page 114.

CORRELATIONS

Reliability Tests: Split Half = Total test - - - - - .88

Sections:

True-False - - - - - .95
Vocabulary - - - - - .53
Characteristics - - - - - .29

Test-Retest - - - - - .56

Validity Tests: Test 1 and Growth and Development - - - .34

Placement Tests: and MCN - - - - - .24
Test 1 - - - - - .28
Child Growth and Development - - - .40
Chemistry - - - - - .37
Introduction to Nursing - - - .42
English - - - - - .40
Medical-Surgical Nursing - - - .49
Bacteriology - - - - - .46
Anatomy and Physiology - - - .44
Sociology - - - - - .47
Nutrition - - - - - .26
NLN League Tests - - - - - .18

National League for Nursing Obstetric and Pediatric Achievement Tests

and MCN - - - - - .78
Child Growth and Development - - - .66
Test 1 - - - - - .31
Test 2 - - - - - .76

Maternal-Child Nursing

and True-False (Test 1) - - - .30
True-False (Test 2) - - - .37
Characteristics (Test 1) - - - .23
Characteristics (Test 2) - - - .61
Child Growth and Development - - - .47
Test 1 - - - - - .39
Test 2 - - - - - .70

Child Growth and Development

and True-False (Test 1) - - - .42
Characteristics (Test 1) - - - .84
Test 2 - - - - - .31

correlation of .66; and with the MCN course grades with a result of .78.

How much of the information gained on campus through the completion of the courses in child growth and development was retained when the MCN area was entered in the hospital six months later? Some psychologists say that approximately 85% of that which is learned is forgotten in six months time. The correlation between the first test and the child growth and development course grades, .34, would appear to bear this out.

The second test was given for the purposes of: (1) test-retest reliability; (2) to try to discover the measurement of what was learned after MCN was given in the hospital; (3) to see if the material covered in the test was present in the learner while he was enrolled in the MCN class; and (4) to try to determine the ability of the students in application of information learned in the campus courses. There was a definite increase in the correlation of the second test results and the MCN course grades over the first test results and the MCN course grades. The correlation results jumped from a .39 to a .70. This could have been due to the fact that the material was covered in the hospital course or it could have been due to the fact that the students had learned to apply the knowledge gained in the campus courses to the practical situation in the hospital. The subject matter being tested in the behavior of the learners had changed from a knowledge type of learning to one of comprehension.¹ Since the MCN situation called for comprehension of the material in the test, a correlation was done between the characteristics section of the first and the second test

¹See definition of these terms on page 9.

and the MCN course grades. With the first test the result of the correlation was a .23. With the second test the result of the correlation was a .61. This would again tend to indicate that the material had been reviewed or the students had begun to apply it.

Dorothy Johansen states that "integration of courses can be successfully accomplished only where a common approach is possible, and where there is a related body of material, exemplifying a significant, meaningful whole."¹ From an overall view of the results of this study, the author felt that there was demonstrated (or evidence of) a relationship between the body of material in child growth and development and in MCN.

The overall course grades of MCN and child growth and development were correlated with a result of .47. Because of the elevation of the correlation between the second test and the MCN course grade over the first test and the MCN course grade, it would appear that there was some relevancy of the campus courses in child growth and development for the MCN courses in the hospital area.

All of the students with the exception of two, tended to range over the entire area of ranks. Of the two exceptions one remained in the ranks from 4 up and one remained in the ranks from 8 down, with the exception of one class where she jumped to a rank of 4. For the profile of each individual student, see Appendix B. All the student profiles were superimposed upon each other to give a total picture.

¹Johansen, Dorothy, "The Integrative Method of Teaching," American Journal of Nursing. (50:117-119) January, 1950, page 117.

Differences Between Course Content in Child Growth and Development and Maternal-Child Nursing

Each profession has a set of terms that are defined quite specifically within that profession. These terms differ in definition from one profession to another and between the professional and lay people. It is necessary to recognize this factor when working with subject matter specialists in allied disciplines.

Did the nursing instructors agree with the subject matter specialist about the material covered in the test? The test contained a total of 236 items to be answered. Out of this total there were actually 20 items, or about 8.5%, that proved to be points of difference between nurse instructors and the subject matter specialist. In the sections of the test covering vocabulary and characteristics, there were, in the former, 2 out of 36 items questioned and in the latter, 2 out of 90 items questioned. On these two sections there was agreement on 122 out of 126 items. This leaves 16 items from the true-false section of the test (with 110 items) as items of difference. Some of these points of difference in regard to specific items appeared to be a matter of individual interpretation of the statements as made by the members of two different professions.

From one hospital division came this comment, "Our real criticism was that very many of the test items could have several equally correct answers. We felt that perhaps the items were not specific enough."

This difference in emphasis, as shown by the following examples from both hospitals, is due in part to the definitions of specific terms, and the authorities used in the different courses. These differences show the possibilities in interpretation by the individual

disciplines. For the complete list of differences see Appendix A. Whenever subject matter comes to the extremely specific level, where the content is applied to a particular situation, these differences appear. In the same instance there may be the same kind of disagreement within a profession itself.

The following items are some of those with which the first hospital unit had specific differences as to where the emphasis was placed in the instruction of students.

True-False Section

Test Item Number 26

During the second stage of labor, the cervix is opened completely and the patient should be taken to the delivery room.

<u>Key</u>	<u>Hospital</u>
True	False - during the first stage at 7-8 cm's.

Discussion

According to the authorities used in child growth and development, since a mother is not ready to deliver a child until the dilatation is complete, she should not be taken to the delivery room until the second stage of labor. On the other hand, the nursing instructor states that the mother should go to the delivery room before dilatation is complete to prevent a precipitous delivery. This difference is also apparent between members of the medical profession, for instance, one obstetrician says to take the mother to the delivery room when dilatation is complete, another will say that between 7 and 8 cm's the woman should go to the delivery room. Both answers are correct in one sense of the term. The professional responsibility, the operational policies, and

the unique situations give direction to members of a discipline in dealing with this kind of question.

Test Item Number 105

Maturity is an individual matter.

Key

Hospital

True

False or true - depending on interpretation.

Discussion

Depending upon the authority used and the interpretation of the statement by the reader, this is either true or false; both answers may be correct.

Vocabulary Section

Test Item Number 20

Born head first

Key

Hospital

z-normal birth

z-born 'feet first' can also be normal.

Discussion

Child growth and development considers 'head first' as the only normal birth. According to the child growth and development courses the fetus is developed en utero for a cephalic presentation during birth. Since this is nature's intention, it is the only 'normal' birth. According to the medical profession if the pregnancy and the labor progression is normal, a breech, or footling presentation during birth may also be 'normal.' Again, both are correct. This kind of question serves to illustrate the fact that the same body of knowledge or factual material may be used differently in different disciplines.

From the other hospital division came the following comment:

"Some of the questions in the true-false cannot be answered because they contradict with the information given in obstetrics. The O.B. instructor says there is a lot of lay terminology."

The following items are some of those with which this hospital unit had specific differences as to where the emphasis was being placed in the instruction of students.

True-False Section

Test Item Number 27

A Cesarean Section is performed when the pelvic structure is not large enough to accomodate the head of the baby; the cervix fails to dilate; when the placenta has become attached to the cervix.

Key

True

Hospital

True - the word 'attached' is questioned (lay terminology?)

Discussion

The child growth and development classes do not attempt to teach all the medical terminology necessary to nursing. There are some students in the child growth and development courses who are not nursing students. This is one example where the difference mentioned is in the words used instead of the thought of the sentence. The technical terminology nursing students need should be taught but is it the place of the subject matter specialist in an allied discipline to teach this?

Vocabulary Section

Test Item Number 20

Born head first

<u>Key</u>	<u>Hospital</u>
z-normal birth	unmarked - What do you mean by this statement?

Discussion

See page 22 for the discussion of this item. Of the 20 items mentioned by the two hospital units, this is the only item that appeared for question by instructors from both units.

This nurse instructor suggested that the word 'womb' should be omitted, in matching words (number ii). And that the word 'buttock' should be added with the word 'feet first' (number ss).

Characteristics Section

Test Item Number 53

Need for orthodontia may be apparent but treatment not begun for another year.

<u>Key</u>	<u>Hospital</u>
c - 6-10 years	unmarked - question the statement for validity.
r - physical	

Discussion

According to the authority used in child growth and development this statement is valid, particularly in the case of dental braces for the teeth. In nursing, if a defect is apparent the treatment should be begun as soon as possible.

PART III

SUMMARY

The contribution of subject matter specialists is important to nursing education. For the nursing student to have a well rounded background of understanding and appreciation for each patient as an individual she should study with instructors and professors who are not nurses. She should participate in classes with students who are not nurses and share learning experiences which do not gear everything to nursing. Since the nurse has other responsibilities within the culture her education must prepare her as a citizen and as a participating member of society.

The problem discussed in this paper was: What is the nature of the contribution of a subject matter specialist in an allied discipline as that contribution is manifested in the learning (behavior) of nursing students as practiced in Maternal-Child Nursing?

The objectives of the study were: (1) to determine the degree of readiness of the students entering Maternal-Child Nursing in the hospital following the campus courses in child growth and development. The correlation between the Maternal-Child Nursing course grades and the child growth and development course grades would tend to show that these students had a kind of readiness. The elevation of the correlation between the second constructed test results and the Maternal-Child Nursing course grades over the first test results and the MCN course grades would tend to show that these students increased in their ability to recognize the principles of child growth and development. (2) To discover if the material covered in the subject matter special-

ist's field is relevant to nursing. Again this material in child growth and development would appear to be necessary and relevant to nursing from the correlation of .66 between child growth and development course grades and the MCN course grades. These objectives are used to arrive at the problem indirectly.

The first step in the procedure of this research problem was to make up the test to be used in obtaining the data for the study. This was done with the help of the subject matter specialist. These questions were read by a jury of experts for clarity. The key was also made with the help of the subject matter specialist.

The students who entered Montana State College in the fall of 1958, with no previous history of college or trade school, a total of 11, and who entered the MCN area of the hospital units in September, 1959 constituted the sample in this study.

The evaluation procedure used was Spearman-Brown rank correlation of test results, placement scores, and the various course grades. To help give validity to this study, the results of the students in their MCN and the child growth and development courses, and the scores of the two tests, were correlated with the students' results on the National League for Nursing Achievement Tests in Obstetrics and Pediatrics.

The author does not feel that the sample was large enough to be able to draw any definite conclusions from the findings. The results, however, were such that certain implications can be drawn and pertinent suggestions made which may be of value in working with the Home Economics department, and with other subject matter specialists in allied disciplines to the nursing school.

PART IV
CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS
FOR FURTHER STUDY

Definitive conclusions cannot be drawn from the findings. However, there may be certain implications drawn for the benefit of the instructors in allied disciplines and in the nursing curriculum. It must be kept in mind by the reader that the sampling of students was small, and that all the results of the correlations may be due to chance.

Conclusions

1. Each student answered the first test as best she could, based on knowledge learned 6 to 12 months earlier.
2. The rise in the correlation results from the first to the second test, a period lapse of approximately 10 weeks, would tend to show that the material had been reviewed in class, or that the students had learned to recall, transfer to different situations and to apply knowledge learned 6 to 12 months earlier.
3. The subject matter in child growth and development must tend to be relevant to the Maternal-Child Nursing course in the hospital due to the correlation between the two courses and the elevation of the correlation of the second test and the Maternal-Child Nursing course grades. These findings would tend to support the hypothesis that the subject matter of the allied discipline, Child Growth and Development, is necessary to the practice of Maternal-Child Nursing in the hospital in this curriculum, and that the student's recognition of the principles of Child Growth and Development tended to increase their learning when the MCN instructors made reference to those principles.

4. The National League for Nursing correlations tended to give validity to the study, even though the sampling of students was small,

5. Because the child growth and development courses are given at the beginning of the nursing student's college education and because she has little understanding of how material from allied disciplines will be applicable to nursing, there would appear to be a need for a coordination of facts learned in allied disciplines and use in the practice of nursing. As to who should do this and how it should be done -- this should be worked out between the specific disciplines concerned.

6. Because of the specific and unique interpretation of material by different disciplines, would it be possible for the instructors from all the disciplines to meet (1) for an examination of facts that each discipline teaches (this is not to say that any discipline should change the facts taught, but rather to establish some common understandings of the contributions, expectations, and authorities held by these cooperating disciplines)? (2) for a coordination of the facts taught? This would help the nursing school discover where certain facts are presented, in what manner, and to what extent they are covered; and (3) to determine where content needs clarifying by the faculty of the School of Nursing for the benefit of the student nurses? This is necessary when one recognized that identical material is used differently in each discipline.

Implications

1. Ability and skill in transfer of learning should be emphasized from the very beginning of the nursing student's education. This is

crucial to students achievement in the curriculum since nursing develops its principles by interrelating and applying knowledge from the allied disciplines -- the other arts and sciences.

2. It is necessary for the nursing instructor dealing with concepts in clinical nursing to select learning experiences which demonstrate that the material given on campus is relevant and necessary for each student to know. It may be further necessary to actually establish with the student how this material is used as a stepping stone to the understanding and application of nursing care in the hospital. The difference between knowing and not knowing might well mean the difference between the life and death of the patient.

3. The use of subject matter is somewhat influenced by hospital policy, the local customs and the vernacular speech patterns. Knowledge of the past experiences of the patient may help the nursing student in giving patient-centered care to an individual assigned to her. The selection of subject matter and the way it is used is largely within the span of control of the nursing instructor. Professional education places certain demands as to the nature of knowledge required by the learner.

4. Recognition of the variations possible in heredity, environment, and past experiences that make each patient a unique individual is a necessity to the nursing student. Therefore it is desirable that students learn the concepts of child growth and development as they exist in that discipline and as they are used in the medical profession.

Recommendations for Further Study

The following are some of the questions which must wait for a further study to be answered:

1. How much of the information given in child growth and development is applicable to the hospital situation and to the education of the nurse in general?
2. Is the increase in skill with an increase in correlation result due to performance or ability?
3. Can a method be developed which may be useful in determining the nature of the contribution of a subject matter specialist from an allied discipline to the practice of nursing? This study dealt only with subject matter.
4. Do allied disciplines make other contributions to the nursing curriculum, such as affecting attitudes and skills of the students?
5. Why do we use subject matter in the way that we do?

APPENDIX A

C
O
P
Y

423 North Tracy
Bozeman, Montana
September 14, 1959

Instructors
Maternal-Child Nursing
Hospital Units

Instructors of Maternal-Child Nursing:

When you were on campus for the Maternal-Child Nursing workshop I spoke to you concerning my master's project, the primary objective of which is to determine the degree of readiness of students in Maternal-Child Nursing following the campus courses of child growth and development.

I stated that I would have a test covering child development ready to be given to the students of the June 1959 class as it enters the maternal-child nursing clinical area, during the first week of fall quarter. As the instructors of this class the test is to be administered by you. The directions for each section of the test are given at the beginning of that section in the test itself. After the completion of the test, which will take two (2) hours, I would appreciate it very much if you would collect the tests and return them to me for grading. I will let you know which questions are missed most often if you so desire.

I will repeat this same test for these students at the end of the quarter as they finish maternal-child nursing, in order to have some data for a correlation. The second time the test is given it will be administered in the same way that this one is. It is to be given the last week of the fall quarter. I will send the test papers to you in time for the second test. This way you will not have to be responsible for keeping track of the papers during the quarter.

Thank you very much for your cooperation in this matter.

Sincerely,

(Mrs.) Dale Orback

C
O
P
Y

33

423 North Tracy
Bozeman, Montana
December 3, 1959

Instructors
Maternal-Child Nursing
Hospital Units

Instructors of Maternal-Child Nursing:

As stated in the cover letter when I first sent this test to you, it would be sent to you again for re-administration. It is to be administered in the same way that the first one was. That is, it is to be given to the students taking Maternal-Child Nursing Autumn 1959 during the last week of the quarter. As the instructors of this class, you are requested to administer the test. The directions for each section of the test are given at the beginning of that section on the test itself. After the completion of the test, which will take two (2) hours, I would appreciate it very much if you would collect the tests and return them to me for scoring.

Please tell the students to be sure to follow the directions as they are stated.

I am aware of your viewpoint regarding the test. The test is based on material from Home Economics 105 and 305 - Child Growth and Development. My problem, on my research paper, is "What is the nature of the contribution of a subject matter specialist in an allied discipline as the contribution is manifested in the learning (behavior) of nursing students as related to Maternal-Child Nursing?" In other words, what use is the material given in the child growth and development classes to nursing?

Thank you for your help.

Sincerely,

(Mrs.) Dale Orback

TEST FOR MATERNAL-CHILD NURSING

TRUE-FALSE

Directions: Place a circle around the "T" if the statement is true and around the "F" if the statement is false. If false, correct the underlined word or words and place the correction in the blank to the left of the "T" column.

- | | | |
|-------|-----|--|
| _____ | T F | 1. To understand human beings at any stage of their growth and development, you must understand the <u>very early</u> beginnings. |
| _____ | T F | 2. The experiences that have greatest significance to us in our lives are often those that <u>cannot</u> be remembered. |
| _____ | T F | 3. The pattern and direction in which <u>personality</u> develops depends upon gene inheritance, <u>early</u> family environment, and social cultural pressures. |
| _____ | T F | 4. The three stages in the <u>development</u> of a personality are conception, <u>process</u> or being born, and personal identification. |
| _____ | T F | 5. There <u>are</u> certain things an expectant mother can do to make sure her unborn child will be a boy. |
| _____ | T F | 6. Each chromosome consists of a string of minute particles that are called <u>genes</u> which carry the hereditary traits. |
| _____ | T F | 7. Each child is born with his own assets and liabilities - strengths and weaknesses - traits - characteristics - tendencies - <u>different</u> from those of all other individuals. |
| _____ | T F | 8. A <u>congenital</u> condition is that which has occurred after conception - caused by environment rather than heredity. |
| _____ | T F | 9. "Housing" of the zygote within the uterine wall takes place generally in <u>seven to ten days</u> after conception. |
| _____ | T F | 10. The male is almost always fertile, capable of producing a continuous supply of sperm while the female usually produces only <u>three</u> eggs per month. |
| _____ | T F | 11. Ovulation generally occurs <u>midway</u> between menstrual cycles. |
| _____ | T F | 12. The three stages of development following conception are called the <u>zygote, embryonic, and fetal</u> stages, in that order. |
| _____ | T F | 13. A normal course of prenatal development is dependent on conditions <u>within</u> the uterus; i.e. temperature, chemical changes, electrical potential, and gravity. |

- _____ T F 14. The Rh factor may be a disturbing influence on prenatal development.
- _____ T F 15. If some disturbing factor intrudes, the organ undergoing development at that particular time will be the organ that is affected.
- _____ T F 16. Toxins and viruses from the mother's blood stream may affect hearing, vision, brain or the heart of the embryo.
- _____ T F 17. The developing fetus never reacts to the mother's fatigue, consumption of alcohol, nicotine or narcotics.
- _____ T F 18. The fourth lunar month is considered to be a most remarkable month in the embryology of behavior.
- _____ T F 19. A fetus born during the eighth lunar month has a 50% chance for survival.
- _____ T F 20. A lunar month is the same as a calendar month.
- _____ T F 21. Symptoms of pregnancy may include a few or all of the following: cessation of menstruation, enlargement of the abdomen, and increased micturition.
- _____ T F 22. An average of 16-30 pounds can safely be gained during pregnancy.
- _____ T F 23. Under normal conditions the baby travels down the birth canal feet first.
- _____ T F 24. The first stage of labor usually lasts longer than any other stage - contractions begin and the cervix begins to dilate.
- _____ T F 25. Labor is divided into four stages.
- _____ T F 26. During the second stage of labor, the cervix is opened completely and the patient should be taken to the delivery room.
- _____ T F 27. A Cesarean Section is performed when the pelvic structure is not large enough to accomodate the head of the baby; the cervix fails to dilate; when the placenta has become attached to the cervix.
- _____ T F 28. The placenta is expelled during the third stage of labor.
- _____ T F 29. All children grow and develop according to the caudalo-cephalic pattern.
- _____ T F 30. A Baby's first environment is within the uterus.
- _____ T F 31. The rate at which children grow and develop and the age at which they can master certain skills may vary greatly in different children.
- _____ T F 32. The average weight of a baby at birth is seven pounds.
- _____ T F 33. The average length of a baby at birth is twenty-three inches.

- _____ T F 34. It is an established fact that all babies can see, hear, and smell at birth.
- _____ T F 35. An infant doesn't need a regular routine until he is around two years of age.
- _____ T F 36. An individual record of "height-weight gain" gives more conclusive evidence of progress of growth than published comparison charts of thousands of children.
- _____ T F 37. One type of development waits on another, i.e. while a baby is learning to walk he may not talk as freely.
- _____ T F 38. Each child passes through each developmental stage and each stage of development has its own characteristic traits.
- _____ T F 39. All development is caused by maturation and learning.
- _____ T F 40. Among the variables which make each child decidedly different from every other are sex, intelligence, race, glands, nutrition, health, fresh air, sunlight, position in the family, incentive heredity, parental attitudes.
- _____ T F 41. A common cause of sterility in either the male or female may be blockage of sperm or ova ducts.
- _____ T F 42. Maturation is the term that means increase in bodily dimension - taller and heavier.
- _____ T F 43. Learning refers to qualitative changes - making it possible for a child to acquire voluntary control of elimination, to feed himself.
- _____ T F 44. Growth is the term applied to the exercise and practice of a new function - acquires greater amount of skill and facility.
- _____ T F 45. Development proceeds from specific to general.
- _____ T F 46. An infant may actually be groggy from exhaustion due to the birth process and/or anesthetics used.
- _____ T F 47. The basal pulse rate for the infant immediately following birth is usually from 130-150 beats per minute and the respiration is about 35 per minute.
- _____ T F 48. Cows milk is digested much more rapidly than breast milk.
- _____ T F 49. The Moro Embrace is an infantile startle pattern brought about by sudden loud noise, flash of light, or sudden loss of support.
- _____ T F 50. The Babinski response in the infant refers to the fanning upward of the toes.
- _____ T F 51. At one month an infant's breathing may be noisy, shallow, and irregular.

- _____ T F 52. At two months an infant sheds tears when he cries.
- _____ T F 53. At three months an infant enjoys mild roughhousing.
- _____ T F 54. Usually the sixth month is significant for the ability to release an object at will.
- _____ T F 55. Certain play activities are popular at certain ages no matter what the nationality, economic status or environment.
- _____ T F 56. Teeth begin to form during the 17th week of of pregnancy.
- _____ T F 57. Toilet training to control bowel and bladder movements is an important part of socialization.
- _____ T F 58. If a child's need for love is met, other emotional needs will be taken care of; i.e. security, and belonging.
- _____ T F 59. Temper tantrums are not a form of misbehavior but an indication of feelings difficult for the child to handle.
- _____ T F 60. There are 20 teeth in the deciduous set.
- _____ T F 61. A child needs to feel secure about his possessions before he is ready to share them.
- _____ T F 62. Children need opportunity to play out accumulated feelings of tension, frustration, insecurity, aggression, fear, bewilderment, and confusion.
- _____ T F 63. Children's emotions can usually be detected by behavioral symptoms.
- _____ T F 64. Children's emotions are intense - whole hearted and without reservation.
- _____ T F 65. Reactions of anger, fear, worry, contentment and apprehension accompany feelings of frustration.
- _____ T F 66. Reactions of happiness, joy, love, infuriation, and pleasure accompany feelings that are satisfying.
- _____ T F 67. Play is serious business to a child and serves to develop muscles; exercise all parts of the body and serves as an outlet for surplus energy.
- _____ T F 68. Nail biting, thumb sucking, and nose picking are outward signs of nervous tensions.
- _____ T F 69. A few children will have a few temper tantrums between one and three years of age.
- _____ T F 70. At two years children engage in parallel play.
- _____ T F 71. Motor skills become specialized with practice and repetition.
- _____ T F 72. At 1½ years the baby is a passive bystander in the social scene - more occupied with self.
- _____ T F 73. At 2 years cooperative play starts - sharing toys is easy.

- _____ T F 74. At 3 years there are no social distinctions among most children.
- _____ T F 75. At 4 years feminine roles are becoming more significant for little girls and masculine roles are becoming more significant for little boys.
- _____ T F 76. At 5 years play becomes more organized and competitive, leadership becomes more evident.
- _____ T F 77. At 6 years separate gangs are beginning to be formed by both sexes and the influence of the group is strong.
- _____ T F 78. Curiosity - the desire to learn - the desire to know - the desire to explore - is considered a favorable kind of emotion.
- _____ T F 79. All children have the same basic fundamental needs, drives, and motivations.
- _____ T F 80. Growth is a continuous process but not always steady.
- _____ T F 81. In every group of children some will be ahead of others their age - physically, mentally, and emotionally.
- _____ T F 82. Typical behavior in children may be exasperating to adults.
- _____ T F 83. Any behavior in excess at any age level needs adult help and guidance to help a child overcome his problem rather than to let the child "outgrow" it.
- _____ T F 84. Adults cannot force growth but they can understand the needs and characteristics of a growing child and encourage growth.
- _____ T F 85. Communication refers only to the spoken word.
- _____ T F 86. Nursery school helps many children to adjust socially.
- _____ T F 87. The acquisition of positive, self-assertive, commanding and demanding attitudes in the first two years of human life is an essential step in the development of every child.
- _____ T F 88. Most children feel aggressive and hostile some of the time - but not all children dare act out or show these feelings.
- _____ T F 89. The child solves problems according to the standards of his own developmental level.
- _____ T F 90. The nursery school should offer the child opportunities to learn but should not make demands for achievement.
- _____ T F 91. The main aims of a nursery school should be to meet individual needs and to provide scope for growth.
- _____ T F 92. The label "gang age" points to the fact that during this period, affiliation with one's own age group - the gang - becomes of cardinal importance.

- _____ T F 93. Child society is the proving ground where the child begins to live with people outside his own family unit.
- _____ T F 94. Most boys go through a period when they reject all females, loudly announcing vows of total, permanent celibacy.
- _____ T F 95. Girls go through a period similar to that of boys when all boys are rejected.
- _____ T F 96. Ambivalence about growing up is characteristic of all ages of childhood.
- _____ T F 97. An important characteristic of the individual who becomes mature is that he is at home with reality.
- _____ T F 98. The attitudes and behavior of a child are enormously influenced by his school relationships.
- _____ T F 99. The good marital adjustment of their parents are the best preparation which children can have for the development of desirable attitudes and values.
- _____ T F 100. Friendship fulfills a need of security and a sense of belonging.
- _____ T F 101. Adolescents tend to be very tactful and diplomatic towards their friends.
- _____ T F 102. Girls tend to need the closeness of a best friend for a longer period of time than do boys.
- _____ T F 103. The youngster who is approaching puberty begins to show changes in his growth pattern and often in his attitudes and behavior.
- _____ T F 104. There are reasons back of any disturbing behavior that appears to be naughty or bad.
- _____ T F 105. Maturity is an individual matter.
- _____ T F 106. A vital concern of the adolescent is that of being accepted by others his own age, not only of the opposite sex, but also of his own sex.
- _____ T F 107. An adolescent will usually turn to others of his own age for support in an attempt to find his own individuality and lessen his need for dependence upon the family.
- _____ T F 108. The experience of going to school is the most important social change a child will encounter between childhood and adolescence.
- _____ T F 109. When reality is not satisfying to the child, he often resorts to daydreaming in order to substitute pleasure and success for real experiences.
- _____ T F 110. Social competence comes from acquaintance with various rules of conduct and etiquette through actual experiences and ever-widening circle of attachments to his friends.

VOCABULARY MATCHING

Directions: Place the letter(s) of the word(s) that best defines the phrase in the blank to the left of the number.

<u>DEFINITION</u>	<u>WORD</u>
_____ 1. A yellow fluid that preceeds the flow of milk in the breasts.	a. Fetus
_____ 2. A vascular structure by which the fetus is nourished during development before birth.	b. Colostrum
_____ 3. The male organ of copulation.	c. Penis
_____ 4. The tubes that conduct the egg from the ovary to the uterus.	d. Placenta
_____ 5. External bag or pouch that contains the testicles.	e. Conception
	f. Oviducts
	g. Scrotum
	h. Fallopian
_____ 6. External parts of the female genitalia	i. Vulva
_____ 7. The cord arising from the naval of the fetus.	j. Umbilical
_____ 8. Serves as the canal or passageway from the uterus to the outside of the body.	k. Gonorrhea
_____ 9. Process of discharging of the menses.	l. Leucorrhea
_____ 10. White discharge of mucous in the female genital organs.	m. Vagina
	n. Menstruation
	o. Orgasm
	p. Mesion
_____ 11. Period of natural cessation of the discharge of the menses occuring usually between the ages of 45 and 50.	q. Climacteric
_____ 12. The organ in which the egg is produced.	r. Circumcision
_____ 13. The viscid whitish fluid which contains the sperm during ejaculation.	s. Extra-uterine
_____ 14. The neck of the uterus.	t. Menopause
_____ 15. A pregnancy occuring outside the uterus.	u. Semen
	v. Ovary
	w. Cervix
	x. Ectopic Gestation
_____ 16. The term applied to the operation performed to remove the baby from the uterus through the abdominal wall.	y. Natural Birth
_____ 17. When life or movement of the fetus is felt.	z. Normal Birth
_____ 18. The act of cutting away the foreskin that covers the glans penis.	aa. Circumcision
_____ 19. The act of giving premature birth.	bb. Quickening
_____ 20. Born head first.	cc. Abortion
	dd. Cesarean Section
	ee. Copulation
	ff. Miscarriage

DEFINITION

- _____ 21. Born head first with little or no fear or anesthesia.
- _____ 22. An organ containing the unborn child.
- _____ 23. Fusing of two germ cells.
- _____ 24. Twins formed by one sperm and one egg.
- _____ 25. Twins formed by two sperm and two eggs.

- _____ 26. Secreting and yielding of milk by the mammary glands.
- _____ 27. Cephalic presentation.
- _____ 28. Breech presentation.
- _____ 29. Two glands located on either side of the vaginal tract which produce a lubricating fluid.
- _____ 30. The soft spots of the baby's head.

WORD

gg. Uterus
 hh. Fertilization
 ii. Womb
 jj. Conception
 kk. Natural Birth
 ll. Fraternal
 mm. Identical
 nn. Normal Birth

oo. Copulation
 pp. Head First
 qq. Fontanelles
 rr. Parturition
 ss. Feet First
 tt. Lactation
 uu. Vernix Caseosa
 vv. Bartholin

CHARACTERISTIC MATCHING

Directions: Place the letter of the age and the letter of the type columns in the blank to the left of the characteristic which it best describes. There will be two letters on each blank.

CHARACTERISTICS	AGE	TYPE
1. Growth in height and weight are normally slow and steady; a lag just prior to pubescence 2. Child appears hurried and untidy - prone to accidents 3. Certain amount of freedom in setting up own standards 4. Skill is essential for successful group participation 5. Interested first in manipulating material and then in making something of the material	a. 1st year b. 1-5 c. 6-10 d. 11-13 e. 14-18	r. Physical s. Mental t. Social-Emotional
6. Learns many games 7. Develops from crying as only form of language 8. Shows recognition for parents, siblings, environment and routines 9. During the pubescent spurt growth is very rapid 10. Needs activities with a purpose to utilize excess energy		
11. Appetite is enormous - reducing diets may be very intriguing 12. Exhibits a know-it-all attitude 13. Puberty cycle in progress 14. Can take more responsibility but often forgets 15. Tries to imitate sounds heard	a. 1st year b. 1-5 c. 6-10 d. 11-13 e. 14-18	r. Physical s. Mental t. Social-Emotional
16. Asks lots of questions about lots of things 17. Gradually learns what is acceptable behavior and what is not acceptable 18. Toilet, sleep and eating habits gradually established 19. Rate of growth much slower 20. Bicycles and skates enjoyed		
21. May be over-anxious about own health 22. Personal hygiene is of more importance at this age		

<u>CHARACTERISTICS</u>	<u>AGE</u>	<u>TYPE</u>
23. Posture improving - control and grace displayed	a. 1st year	r. Physical
24. Many minor illnesses of short duration	b. 1-5	s. Mental
25. Competition is keen	c. 6-10	t. Social-
	d. 11-13	Emotional
	e. 14-18	
26. Child is learning to cooperate better		
27. Muscles of boys become hard and firm		
28. Heart develops in size less rapidly than body		
29. Becomes able to take care of own room		
30. Rapid development of language from a few words to an average of 2,000 words		
31. Improved coordination of small muscles		
32. Posture may be poor		
33. Concerned about right and wrong - eager - more enthusiasm than wisdom		
34. Sees relationship between ideas		
35. Uses short sentences		
36. Ability and accuracy increasing	a. 1st year	r. Physical
37. Recognized differences in how boys and girls are expected to behave	b. 1-5	s. Mental
38. Girls are about 2 years ahead of boys	c. 6-10	t. Social-
39. Many respond more readily to teacher and peers than parents	d. 11-13	Emotional
40. Social dancing important	e. 14-18	
41. Needs about 8 or more hours rest		
42. Desires prestige and may seek it through size, boasting and rivalry		
43. Awkward age ending - improvement in coordination		
44. Most rapid growth rate of any period		
45. Hand-eye coordination improving steadily		
46. Sex antagonism may be acute		
47. Likes songs, nursery rhymes, cutting, pasting, coloring		
48. Developing definite likes and dislikes - says "no"		
49. Likes to read		
50. Is gradually acquiring other skills		

CHARACTERISTICS	AGE	TYPE
51. Responds to those he knows	a. 1st year	r. Physical
52. Gradually learns to play with others cooperatively	b. 1-5	s. Mental
53. Need for orthodontia may be apparent but treatment not begun for another year	c. 6-10	t. Social-
54. Rest needs about 12 hours or more	d. 11-13	Emotional
55. Shift to own age codes	e. 14-18	
56. Wage-earning desired by many		
57. "Into everything" state is keynote of period		
58. Learns to grab, grasp, put things in mouth		
59. Short-attention span		
60. Rest needs about 10 hours or more		
61. Encouragement to exercise creative ability in rhythms		
62. Important to learn good followership as well as good leadership		
63. Some cut wisdom teeth at end of this period		
64. Enjoys myths, nature stories, heroic tales, comics, radio, TV and movies		
65. Creative, responds to music, sings, plays imaginative games		
66. Small muscles developing, manipulative skill increases	a. 1st year	r. Physical
67. Learns to control emotions some of the time - becoming independent	b. 1-5	s. Mental
68. Likes to watch others, enjoys being played with, talked to, held, rocked	c. 6-10	t. Social-
69. Begins to say "Mama"	d. 11-13	Emotional
70. Muscular growth very rapid, restlessness may be concomitant	e. 14-18	
71. Explores through his senses - touch, taste, feel		
72. No sense of time except "now" - gradually changes to morning, afternoon, today, yesterday		
73. Baby teeth being replaced by permanent ones		
74. Left or right handedness established		
75. Touch, taste and smell help him get acquainted with the world around him		

CHARACTERISTICSAGETYPE

___ 76. May grasp spoon but cannot manipulate it accurately	a. 1st year	r. Physical
___ 77. Attention span is increasing in length as interests grow	b. 1-5	s. Mental
___ 78. Full set of deciduous teeth	c. 6-10	t. Social-
___ 79. Eager and curious - wants to learn	d. 11-13	Emotional
___ 80. Eyes not ready for much close work	e. 14-18	
___ 81. Recognized much of what he sees		
___ 82. Makes issues of fairness - demands own rights and privileges - likes rules		
___ 83. Often resorts to temper tantrums to get own way or attention		
___ 84. Understands some of what he hears		
___ 85. Vocabulary grows by leaps and bounds		
___ 86. Acquires some sex information		
___ 87. Learns best when can be active while learning		
___ 88. Shows preference for certain toys		
___ 89. Hero-worship showing up		
___ 90. Has little to do with the opposite sex		

LIST OF DIFFERENCES

The test items questioned on Sections I, II, and III of the test instrument. Section I is composed of the Vocabulary section of the constructed test; Section II is composed of the Characteristics Section and Section III is composed of the True-False section of the constructed test.

Section I: Vocabulary Section

Test Item Number 20* (This is the only question marked by both units)

Born head first

<u>Key</u>	<u>Hospital</u>
z-normal birth	unmarked - What do you mean by this statement?

Test Item Number 21

Born head first with little or no fear or anesthesia

<u>Key</u>	<u>Hospital</u>
kk-natural birth	unmarked - they question the meaning of the statement

Section II: Characteristic Section

Test Item Number 53*

Need for orthodontia may be apparent but treatment not begun for another year.

<u>Key</u>	<u>Hospital</u>
c - 6-10 years	unmarked - question the statement for validity
r - physical	

* All starred test items are discussed within the body of the paper.

Section II (con't.)

Test Item Number 86

Acquires some sex information

<u>Key</u>	<u>Hospital</u>
c - 6-10 years	This varies too greatly to answer
s - mental	

Section III: True-False Section

Part A - Differences mentioned by the first hospital unit

Test Item Number 1

To understand human beings at any stage of their growth and development, you must understand the very early beginnings.

<u>Key</u>	<u>Hospital</u>
True	False - previous stages

Test Item Number 2

The experiences that have greatest significance to us in our lives are often those that cannot be remembered.

<u>Key</u>	<u>Hospital</u>
True	False - can

Test Item Number 4

The three stages in the development of a personality are conception, process of being born, and personal identification.

<u>Key</u>	<u>Hospital</u>
True	False - according to some authors
	True - according to some authors

Section III (con't.) - Part A

Test Item Number 13

A normal course of prenatal development is dependent on conditions within the uterus; i.e. temperature, chemical changes, electrical potential, and gravity.

KeyHospital

True

False - conditions outside can change course also

Test Item Number 18

The fourth lunar month is considered to be a most remarkable month in the embryology of behavior.

KeyHospital

True

Unmarked - Embryology of behavior is not at all clear

Test Item Number 22

An average of 16-30 pounds can safely be gained during pregnancy.

KeyHospital

False - 16-20

True - 18-25 pounds is the usual

Test Item Number 26*

During the second stage of labor, the cervix is opened completely and the patient should be taken to the delivery room.

KeyHospital

True

False - during the first stage at 7-8 cm's.

Section III (con't.) - Part A

Test Item Number 51

At one month an infant's breathing may be noisy, shallow, and irregular.

Key

True

Hospital

False - normally at no age

Test Item Number 64

Children's emotions are intense - whole hearted and without reservation.

Key

True

Hospital

False - not at all ages

Test Item Number 96

Ambivalence about growing up is characteristic of all ages of childhood.

Key

True

Hospital

False - if all ages of childhood are concerned

Test Item Number 101

Adolescence tend to be very tactful and diplomatic towards their friends.

Key

True

Hospital

False - tactless

Section III (con't.) - Part A

Test Item Number 105*

Maturity is an individual matter.

Key

Hospital

True

False or true - depending on interpretation

Part B - Differences mentioned by the second hospital unit

Test Item Number 5

There are certain things an expectant mother can do to make sure her unborn child will be a boy.

Key

Hospital

False - are not

Unmarked - question key word

Test Item Number 20

A lunar month is the same as a calendar month.

Key

Hospital

False - shorter

Unmarked - question key word

Test Item Number 27*

A Cesarean Section is performed when the pelvic structure is not large enough to accommodate the head of the baby; the cervix fails to dilate; when the placenta has become attached to the cervix.

Key

Hospital

True

True - the word 'attached' is questioned (lay terminology)

Section III (con't.) - Part B

Test Item Number 32

The average weight of a baby at birth is seven pounds.

Key

True

Hospital

Unmarked - Wouldn't it be better to use a range or the word approximately?

Test Item Number 33

The average length of a baby at birth is twenty-three inches.

Key

False - 19-21 in.

Hospital

Unmarked - Wouldn't it be better to use a range or the word approximately?

Test Item Number 46

An infant may actually be groggy from exhaustion due to the birth process and/or anesthetics used.

Key

True

Hospital

True - again question terminology - word 'groggy'

Test Item Number 47

The basal pulse rate for the infant immediately following birth is usually from 130-150 beats per minute and the respiration is about 35 per minute.

Key

True

Hospital

Unmarked - How could this be answered? Certainly the word 'immediately' must be changed, but to what?

Section III (con't.) - Part B

Test Item Number 48

Cows milk is digested much more rapidly than breast milk.

Key

False - less

Hospital

Unmarked - How can this be corrected
with the word 'rapidly' in
the sentence?

APPENDIX B

OVERALL OBJECTIVES*

CHILD GROWTH AND DEVELOPMENT

1. To understand the behavior of all children, with particular emphasis on the child from two to adolescence.
2. To understand the effects of environmental factors on the child's growth and development.
3. To understand and practice acceptable guidance techniques as a result of research and observation.
4. To see one's self and others objectively and to control one's behavior more effectively.

MATERNAL-CHILD NURSING

1. To understand the basic principles involved in giving patient-centered maternal and child care using an integration of facts and principles from the related fields: physical sciences, social sciences, and the mental health aspect. Realizing that to give patient-centered care the situation must revolve around the patient and his family.

*These objectives have been revised since September 1958.

FREQUENCY DISTRIBUTION

Test 1	Test 2
365-367 - - - - - 1	371-373 - - - - - 1
362-364 - - - - - 3	368-670 - - - - - 0
359-361 - - - - - 2	365-367 - - - - - 1
356-358 - - - - - 1	362-364 - - - - - 1
353-355 - - - - - 0	359-361 - - - - - 1
350-352 - - - - - 1	356-358 - - - - - 0
347-349 - - - - - 0	353-355 - - - - - 2
344-346 - - - - - 1	350-352 - - - - - 0
341-343 - - - - - 0	347-349 - - - - - 1
338-340 - - - - - 1	344-346 - - - - - 2
335-337 - - - - - 1	341-343 - - - - - 0
	338-340 - - - - - 1
	335-337 - - - - - 1

RANGE

Test 1
 366-337 = 29 / 1 = 30

Test 2
 373-335 = 38 / 1 = 39

RAW SCORES

55

Students	Place- ment Tests	Test #1	Test #2	Test #1		Test #2		Test #1		True-False		Vocabulary	
				T-F	Chara.	T-F	Chara.	Even	Odd	Even	Odd	Even	Odd
A	6	362	339	202	130	190	116	188	174	103	99	16	14
B	4	362	353	204	124	196	125	187	176	108	96	16	18
C	4	359	363	186	139	196	134	172	187	86	100	18	16
D	5	366	367	201	130	198	135	184	182	99	102	18	17
E	4	344	354	195	118	191	130	177	167	99	96	17	14
F	3	360	359	198	131	192	135	190	170	102	96	17	14
G	6	356	345	195	127	186	127	181	175	98	97	18	16
H	3	350	344	195	125	197	117	189	161	105	90	16	14
J	8	362	373	206	121	209	131	184	178	104	102	17	18
K	6	338	335	185	123	187	118	169	169	91	94	16	14
L	4	337	347	188	119	199	118	172	165	96	92	16	14

RAW SCORES (con't.)

Students	Characteristics		Chromi- stry	Intra- to Nursing	Med- Surg Nursing	English	Bact- eriology	Anat- & Physio.	Soci- ology	Nutri- tion	Child- growth & develop.	MCN	NLN Tests
	Even	Odd											
A	69	61	25	20	44	12	15	35	20	9	21	39	109
B	62	62	17	22	36	16	10	25	15	6	15	39	75
C	68	71	22	23	44	4	10	35	15	9	12	46	130
D	67	63	44	24	46	16	20	40	20	12	24	39	156
E	61	57	22	19	40	12	10	15	20	9	18	39	111
F	71	60	22	23	41	12	15	30	15	12	21	46	159
G	65	62	15	17	37	12	5	25	15	6	12	33	101
H	68	57	4	13	17	8	5	20	20	6	15	20	88
J	63	58	36	24	48	16	20	40	20	12	24	52	189
K	62	61	19	24	41	12	15	30	20	9	21	39	100
L	60	59	29	23	45	16	15	40	24	9	21	39	144

RANKS

Students	Placement Test	Test #1	Test #2	Test #1		Test #2		Test #1		Test #2		True-False		Vocabulary	
				T-F	Chara.	T-F	Char	Even	Odd	Even	Odd	Even	Odd	Even	Odd
A	3	3	10	3	3.5	9	11	3	6	4	4			9	8.5
B	7.5	3	6	2	7	5.5	7	4	4	1	7			9	1.5
C	7.5	6	3	10	1	5.5	3	9.5	1	11	3			2	4.5
D	5	1	2	4	3.5	3	1.5	5.5	2	6.5	1.5			2	3
E	7.5	9	5	7	11	8	5	8	9	6.5	7			5	8.5
F	10.5	5	4	5	2	7	1.5	1	7	5	7			5	8.5
G	3	7	8	7	5	11	6	7	5	8	5			2	4.5
H	10.5	8	9	7	6	4	10	2	11	2	11			9	8.5
J	1	3	1	1	9	1	4	5.5	3	3	1.5			5	1.5
K	3	10	11	11	8	10	8.5	11	8	10	10			9	8.5
L	7.5	11	7	9	10	2	8.5	9.5	10	9	9			9	8.5

Students	Characteristics ⁽¹⁾		Chemistry	Intro. to Nursing	Med-Surg. Nursing	English	Bacteriology	Anat. + Physio.	Sociology	Nutrition	Child Growth + Develop.	MCN	NLN Tests
	Even	Odd											
A	2	5.5	4	8	4.5	7	4.5	4.5	4	6	4.5	6.5	7
B	8.5	3.5	9	7	10	2.5	8	8.5	9.5	10	8.5	6.5	10
C	3.5	1	6	5	4.5	11	8	4.5	9.5	6	10.5	2.5	5
D	5	2	1	2	2	2.5	1.5	2	4	2	1.5	6.5	3
E	10	10.5	6	9	8	7	8	11	4	6	7	6.5	6
F	1	7	6	5	6.5	7	4.5	6.5	9.5	2	4.5	2.5	2
G	6	3.5	10	10	9	7	10.5	8.5	9.5	10	10.5	10	8
H	3.5	10.5	11	11	11	10	10.5	10	4	10	8.5	11	11
J	7	9	2	2	1	2.5	1.5	2	4	2	1.5	1	1
K	8.5	5.5	8	2	6.5	7	4.5	6.5	4	6	4.5	6.5	9
L	11	8	3	5	3	2.5	4.5	2	4	6	4.5	6.5	4

STUDENT PROFILES

59

Profile of:	10.6	10	9.5	9	8.5	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1
1. N L N Achievement Tests	H	B		K		G		A		E		C		L		D		F		J
2. Placement Scores		H F					B C E L					D				A G K				J
3. M-C N									A B D E K L								C F			J
4. Child Growth and Development		C G			B H			E					A F K L						D J	
5. Test #1	L	K		E		H		G		C		F				A B J				D
6. Test #2	K	A		H		G		L		B		E		F		C		D		J

STUDENT PROFILES (con't.)

60

Profile (con't.)	11	10.5	10	9.5	9	8.5	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1
Introductory to Nursing	H		G	G	E		A		B				C F L						D J K		
Med. - Surg Nursing	H		B		G		E			F K				A C			L		D		J
Chemistry	H		G		B		L				C E F				A		L		J		D
English	C		H						A E F G K									B D J L			
Bacteriology			G H				B C E							A E F L						D J	
Anatomy and Physiology	E		H			B G				F K				A C					D J L		
Sociology				B C F G											A D E H J K L						
Nutrition			B G H								A C E K J								D F J		

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