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ABSTRACT

The first paper presented at this conference on the evaluation and effective teaching of nursing students discusses the theoretical perspective on evaluation--that is, steps in writing and validating tests. A worksheet on multiple choice item types, with examples appropriate for nursing education, is included. The second paper discusses the clincial perspective on evaluation and offers a model for relating curriculum objectives to behavioral and communication skills observed in clinical settings. It emphasized that clinical evaluation is a highly value-laden entity requiring careful planning, systematic ongoing evaluation, and a commitment to specific beliefs about performance evaluation. A third paper defines cognitive style mapping and discusses the impact of training nursing educators in this technique. A fourth paper describes replicable teaching strategies which conference participants had successfully used to involve students in their own learning. Implications of cultural diversity for teaching and learning is explored in another paper. Finally, a remedial program which provided counseling and developmental courses in reading, science, and mathematics is described. The program, designed for culturally diverse students, has specified cognitive and affective skills necessary for beginning nursing students. Two textbook readability measures, the Fry Readability Scale and the Cloze Procedure Test, are briefly described. (CP)

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FOREWORD

The Faculty Development in Nursing Education Project, a three-year grant administered by the Southern Regional Education Board, aims to help nurse educators at twenty institutions to enhance teaching and learning experiences. Each year of the project period a regional conference is held for, but not limited to, nurse educators at the project sites. These conferences provide opportunities for faculty to share experiences and to address pertinent issues in the provision of effective teaching and learning experiences. Evaluation: The Hidden Agenda was the topic of the Second Regional Conference.

INTRODUCTION

The second regional conference of the Faculty Development in Nursing Education Project convened in Atlanta, Georgia at the Terrace Garden Inn on October 22-24, 1978. The conference was attended by 150 persons representing the 14 SREB states*, four state boards of nursing (Alabama, Kentucky, Louisiana, Virginia) and 26 associate degree, 17 baccalaureate, and nine baccalaureate and higher degree nursing programs in the region.

The conference, developed around the theme "Evaluation: The Hidden Agenda," was designed to provide an opportunity for participants to:

1) identify personal and professional values reflected in educational programs;

2) identify values reflected in theoretical and clinical evaluation tools;

3) compare and contrast strategies for clinical evaluation of nursing students;

4) compare and contrast selected evaluation instruments for different teaching strategies;

5) identify value conflict and congruity that impede or enhance the teaching and learning process;

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*The 14 member states of the Southern Regional Education Board (SREB) are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia.

6) design strategies for resolving value conflicts that impede the teaching and learning process.

The conference began on Sunday, October 22 with presentations by the consultants, Eleanor Lynch, Associate Professor and Research Associate in the Department of Nursing at Hampton Institute, and Sue Legg, Assistant Director of Testing at the University of Florida in Gainesville. Ms. Lynch and Dr. Legg provided the theoretical framework for the two concurrent work sessions on Monday morning. These sessions allowed participants to address specific issues regarding theoretical and clinical performance evaluations.

Following the consultants' wrap-up session on evaluation Monday afternoon, Norma Rawlings, Assistant Professor in the School of Nursing at the University of Maryland at Baltimore, and Ann P. Morgan, Professor in the School of Nursing at the University of Maryland at Baltimore, led a discussion of faculty and student interactions. Videotapes of simulated situations involving students and faculty were used to stimulate this discussion.

The following quotation was most appropriate in concluding the sessions on Monday:

> No one is other than a different person. Difference is the most cherished quality that human beings can have. Seeing people as other than different subverts the potential of this cherished human quality. Perceiving all people as inevitable and properly different brings all educational plann' into a focus that promotes a dynamic individuality among the total population. Perhaps I would conclude that "When They Are Different" means I've finally begun to see when I look.[1]

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[1] R. L. Shannon. "Where the Truth Comes Out," Humanistic Education. Columbus, Ohio: Charles E. Merrill, 1971, p. 84.

The concluding session of the conference on Tuesday morning consisted of four special interest groups. These groups represented the major areas of concentration at the 20 project sites. The special groups and facilitators were:

Teaching and Learning Styles. Janet Awtrey, Associate Professor, Delois Skipwith, Assistant Professor, and Kathleen Goldblatt, Professor, the University of Alabama School of Nursing in Birmingham, discussed activities related to cognitive mapping and its implication for teaching and learning which are underway in their program.

Identifying Learning Obstacles. Gail Kettlewell, Instructor of Developmental Studies, Goldie Bradley, Assistant Professor, and Fred Jeffcoate, Counselor, the Nursing Division at Tidewater Community College, described their program's ongoing activities to identify learning obstacles.

Management of Teaching Strategies. Kathleen Mikan, Professor and Director of The Learning Resource Center at the University of Alabama School of Nursing in Birmingham, used slides and several group activities to help participants examine their use of various teaching strategies.

Cultural Awareness. The implications of cultural diversity for teaching and learning were explored in this group. Norma Rawlings, Assistant Professor, and Ann P. Morgan, Professor, the School of Nursing at the University of Maryland at Baltimore, and Mary Guidry, Assistant Professor in the School of Nursing at the University of St. Thomas, were the catalysts in this special interest group.

The major presentations and highlights from the special interest groups follow.

THE THEORETICAL PERSPECTIVE ON EVALUATION

Sue Legg

Evaluation Is Part Of The Remedy

> The American educational enterprise is like a gigantic beast, which on close examination displays some healthy tissue, some diseased tissue, and some scar tissue. There is room for controversy about how healthy or sick the creature actually is. Pessimists will say that the creature's death is imminent and unavoidable. Optimists will say that this creature is not dying any faster than is natural, and will foresee a long and useful life for it. It is possible that the creature is not well enough understood for us to know how healthy or sick it is (Cooley and Lohnes, p.1).

The metaphor created by Cooley and Lohnes seems appropriate for the discussion of the methods we use to meet the challenges of educating the diverse students in higher education. Clearly, the beast of higher education has been upset by a change in diet. Instead of grazing on the traditional student, it finds its trough filled with the culturally diverse student. In addition to a difference in ethnic backgrounds these students may be transfers, occupationally oriented, underprepared, disadvantaged, and older. These students upset the beast; they may not respond well to the traditional instructional treatments.

The usual lecture method is supposed to stress the analysis of ideas, but most of the newer students have little interest in theoretical knowledge. Even though many studies have found that lectures emphasize factual content more often than ideas, the sheer volume of information overwhelms many

students. Thus, the beast tends to spit them out of the system rather quickly.

How do we adapt this beast to its diet of new students? Doctors of education have offered remedies in several categories. In a review of the research on instructional methods, McKeachie (1974) reported the strengths and weaknesses of a variety of teaching methods. One collection of methods, self-paced instruction, is a reaction to the inhumanity of the beast. The Keller Plan, PSI, and audio-tutorial instruction are all perscribed medicines guaranteed to soothe the beast and improve its diet. Each of these methods is based upon similar priniciples: the student should know precisely what to learn, practice and feedback are needed, the material should be sequenced in small units of instruction with teacher-prepared supplements to replace lectures. Students interact with the materials and the tutors, and proceed as they master each unit.

The philosophy which underlies these approaches is that time to learn, not intelligence, differentiates student achievement. It is this time factor that can be the "Achilles heel" of self-paced instruction. Materials must be self-explanatory or the utility of the method is lost. Procedures must be carefully structrued or procrastination becomes the bane of self-paced instruction, and high withdrawal rates and incomplete grades often occur.

Another school of educational medicine calls for artificial organ transplants -- educational technology in the form of television, teaching machines, and simulations. But, research indicates that the effectiveness of machines is limited when interaction with instructors is lacking. These methods do not stand alone.

We are confronted with a variety of students and an array of teaching techniques. It is our values as educators that determine whether we see the problem as the changed diet in the form of a diverse student body, or as the failure of the digestive system of higher education to adapt. How we view the problem determines the curative procedures we propose. We must do some hard thinking about what we are trying to do in our classrooms and with our curricula. If we ascribe to the value of open access to higher education or the value of individuality, different teaching strategies must be adopted. This cannot be done in a haphazard way, any more than serious illness can be cured with Aunt Nellie's poultice or fists full of vitamins randomly selected. Not only must student bodies be properly analyzed, but there must be a comprehensive and organized plan to administer dietary supplements.

The traditional lecture method provides factual content. That material can still be presented, but it is how the material is organized that determines how well it is assimilated. Similarly, if conceptual learning is the goal, situations must be structured to insure pupil/instructor interaction. The latest curative lies in the proper management of diverse teaching techniques.

Good management techniques recognize the learning characteristics of the students. Research in cognitive learning styles sensitizes us to the different ways people learn. If we are concerned with the new students who have a history of low academic achievement, then we must be aware of their approach to learning. Patricia Cross, for example, argues that low achieving students approach learning with the "fear of failure" syndrome. Unlike academically oriented students who prefer tasks in which they have a 50-50

chance to succeed, low achievers tend to prefer tasks in which success is either quaranteed or so remote that failure can be easily rationalized. In this situation, the instructor must try to overcome a passive approach to learning. If you fail long enough, you cease to try. Another characteristic of the new students, particularly those from blue-collar backgrounds, is their tendency to accept authority. Therefore, they often prefer explanation to problem-solving. This characteristic complicates our role as educators. If the new students require self-paced instruction to learn, but prefer to have material explained in lectures, what do we do? The answer seems to be in a combination of methods which emphasizes the development of an independent approach to learning. The literature suggests that instruction be individualized, tightly structured, and well-managed. A variety of techniques, including lectures, motivates students and helps them integrate material.

We have examined the beast and found what ails it. It suffers from growing pains and a rich diet. Diagnosing the problems and categorizing the remedies is important but inadequate; even better management of treatments is not enough. How do we know if the beast is getting well? Again we are confronted with our values. In evaluating the beast, what we measure and how we measure it reflect our values. If we test only to assign grades, we devalue accountability to the educational system and to the student, and we often find ourselves in an antagonistic relationship with both. If we test for mastery of skills, we use criterion-referenced measurement. Students are pitted against specific learning objectives, not each other. Yet, how do we know that our standards for mastery are meaningful? If we use

norm-referenced tests, students compete against each other--not a productive situation for insecure students.

Simple logic dictates that our test should reflect what we teach. We teach for specific skills and for the ability to transfer learning to new situations. Therefore, we should test for both. Testing, like teaching, requires a variety of methods.

The difficulty in testing is to phrase items which actually require different intellectual abilities. Essay tests do not guarantee that, conceptual understanding is being measured. Objective tests may include items which measure a variety of intellectual abilities. Recently I conducted a study to find which abilities would predict success on essay and objective tests over the same content. The results showed that certain students excelled on the objective test because they excelled on abstract or transfer of learning items. Students who performed better on concrete items drawn directly from course material also scored higher on the essay test. It is, therefore, not only the academic level of the student or the form of the test, but also the nature of the item that must be considered in constructing tests. If what we are testing is not what we are teaching, then how do we know if the diet is improving, and the beast is getting well?

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Steps In Writing Examinations

I. PLANNING THE TEST

Too often test development is a hurried, last minute affair. The major purpose of the test is to assign a grade, not to evaluate learning. If testing is to be related to learning in a meaningful way, there is a test development procedure. This procedure includes planning not only the test and the items, but also evaluating the effectiveness of the testing process.

The first step is to identify the objectives to be tested and to set the test specifications. The usual procedure is to develop a test blueprint which includes the test objectives and the cognitive level of the items. The test objectives are weighted by assigning a percentage of the test items to each objective. Thus, a test which covers five areas equally would have twenty percent of the items assigned to each objective. Some objectives may emphasize factual knowledge while others stress understanding or application of knowledge. Therefore, it is useful to place the objectives on one axis of the blueprint and the cognitive level on the other axis. In this way the test can be balanced by content and cognitive requirements. In the example below of a 50-item test (Table 1), four content areas and three cognitive levels are to be tested. Eighteen percent of the items (9 items) relate to the comfort of the patient. Thirty percent of the test (15 items) require a knowledge of nursing terminology in the four content areas.

Table 1

EXAMPLE OF A TEST BLUEPRINT

Course Content	Objectives: Terminology	Understanding	Calculation	Weight
Comfort	3	5	1	18% (N=9)
Hygiene	6	7	2	30% (N=15)
Safety	3	5	3	22% (N=11)
Nutrition	3	3	9	30% (N=15)
Weight	30% (N=15)	40% (N=20)	30% (N=15)	50 Items

Several taxonomies have been developed to assist instructors in specifying the cognitive level of test items. Bloom's (1956) taxonomy is familiar to many instructors. Another taxonomy which may relate more closely to nursing content was developed by Ebel (1965). The two taxonomies are shown below.

Bloom's Taxonomy

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Ebel's Taxonomy

Terminology
Understanding
Explanation
Calculation
Prediction
Recommendation
Evaluation

II. PLANNING THE ITEMS

Item Format

The choice of item format is related to the nature of the content, the test objectives, and the time available to write items. Thorndike and Hagan (1969) have summarized the advantages of various formats. Positive attributes have been signaled by plus signs in Table 2, while distinct disadvantages have minus signs.

Item Difficulty

Plan the difficulty of the items in conjunction with the objectives for the course. The more difficult items contribute more to the total score. If the difficult items are concentrated in one content area, the area will unequally weight the total score.

ASK

a. Should difficult items be from all content areas?

b. If one area is more difficult, should it include fewer items to balance its effect on total test score?

To modify the difficulty level of the items:

a. Use compound response (a and c responses are correct but not b).

b. Increase the cognitive level

c. Make options more homogeneous

d. Avoid trick questions or obscure facts; they reduce test reliability

Table 2

RELATION OF ITEM TYPE TO TEST OBJECTIVES

Factor	Essay or Oral	Short Answer	Objective
Ability to organize	+ +	+	-
Discourages bluffing	- -	-	+ +
Potential diagnostic value	- -	-	+ +
Easily and reliably scored	- -	+	+ +
Takes little time to prepare	+	+	-
Measures higher mental processes	+ +	-	+ +
Broad content sampling	- -	+	+ +
Measures application	+ +	+	+ +
Adequate sampling of objectives	- -	+	+ +

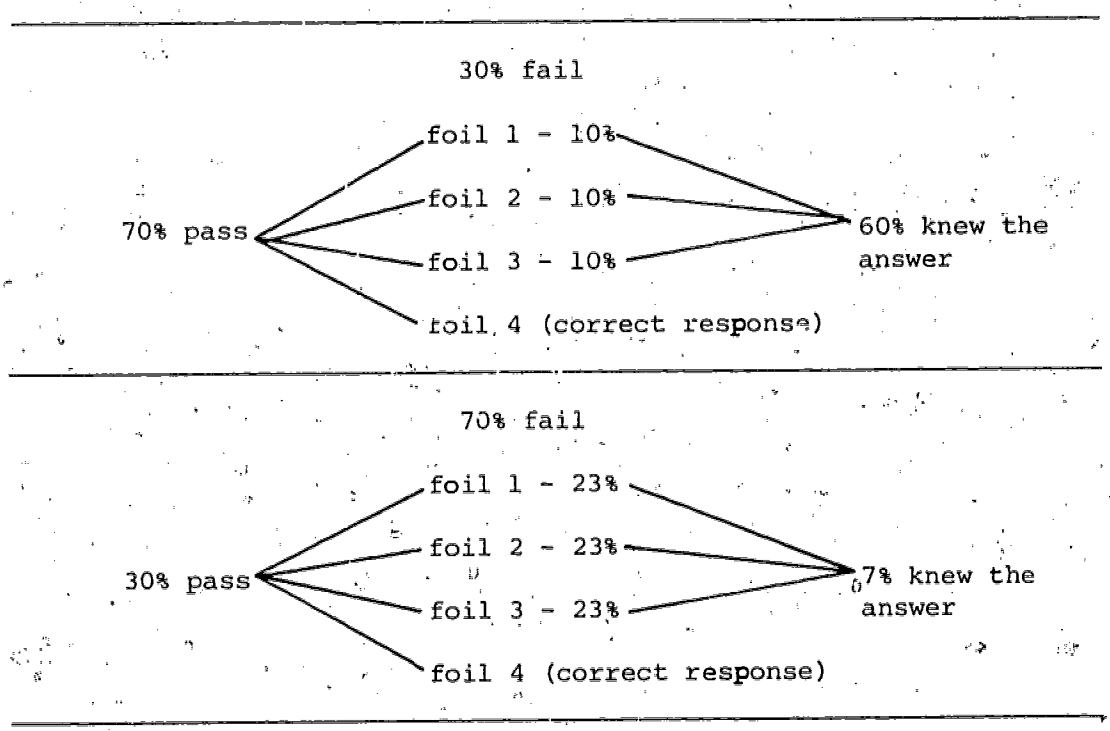
Reduce Guessing

Planning the appropriate difficulty increases the reliability of the test and reduces the effect of guessing. The major points in setting difficulty are listed on the following page.

1. The difficulty level of an item is the percent of the examinees who correctly answer an item. The difficulty of the items is related to guessing in the following way. If there are four alternate responses to an item, and the difficulty level is .70, then the 30 percent who failed the item would be distributed equally over the three incorrect responses. Therefore, the possibility of guessing any single response including the correct one, is 10 percent. Thus, while 70 percent of the students correctly responded, it is likely that 60 percent actually knew the correct answer. The more difficult the item, the greater the effect of guessing. This concept is illustrated below in Table 3.

Table 3

CONSIDER THE GUESSING RATE



2. "Ideal" difficulty level: The goal of a test intended to differentiate among students is to construct items with a medium level of difficulty and a narrow range of difficulty. Lord (1952) published the following levels of difficulty (Table 4), to maximize test reliability.

Table 4

GUIDE FOR PREPARING TESTS WITH DIFFERENT ITEM FORMAT

Item Format	Ideal Average Difficulty
Completion and short answer	50*
Five-response multiple choice	70
Four-response multiple choice	74
Three-response multiple choice	77
True-false	85

*Expect a student of average ability to answer about one-half the items correctly.

III. WRITING THE ITEMS

Item Construction

Adequate planning is essential to insure the validity of the test, i.e., the test is relevant to what was taught. Careful construction of the items makes a test reliable, and a reliable test measures what it is intended to measure. Common sources of measurement error can be reduced if the following rules are observed:

(1) Use four of five choices per item.
(2) Use plausible distractors.
(3) Fit each choice grammatically with the stem.
(4) Test content, not reading level.
(5) Keep choices short and about the same length.
(6) Include only one correct answer.
(7) Give clear directions.
(8) Vary the position of the correct response.

IV. ANALYZING THE TEST

After the test is constructed and administered, both student achivement

and the adequacy of the test can be evaluated. The individual item contribution to test reliability can be assessed. The incorrect responses in a single foil may indicate problems in the wording of the items. Another factor in assessing the effectiveness of an item is the ability of the item to discriminate between high and low scoring students.

Table 5

ANALYSIS OF THE TEST RESULTS

	Item Responses						
	a	b	c	d	e	Difficulty	Discrimination
1.	2	4	243+	2	1	0.96	0.00
2.	26	21	28	149+	23	0.59	0.51
3.	0	0	5	219+	28	0.86	0.09

Item Analysis

Purpose: Item analysis helps to determine the adequacy of the items within a test as well as the adequacy of the test itself. The results of an item analysis provide information about the difficulty of the items and the ability of the items to discriminate between better and poorer students.

Method: The index of difficulty is defined as the proportion of students who correctly answer an item. The average difficulty of a test is the average of the individual item difficulties. For maximum discrimination among students, average difficulty of .60 is ideal.

Example: If 36 students answered item No. 1 correctly and 14 students answered incorrectly, the difficulty level of the item would be 36/50 or .72.

The index of discrimination is a numerical indicator of how the poorer students answered the item as compared to how the better students answered the item. The scores are divided into three groups with the top 27 percent of the scores in the upper group and the bottom 27 percent in the lower group. The number of correct responses for the item in the lower group is subtracted from the number of correct responses for the item in the upper group. The difference in the number correct is divided by the number of students in either group. The process is repeated for each item.

Example: Sixty students take a test. The top 16 scores and the bottom 16 scores are the upper and lower groups. For item No. 1, twelve of the sixteen students in the upper group answered the item correctly while seven students in the lower group answered correctly. The index of discrimination for item No. 1 would be calculated as follows:

$$\frac{12 - 7}{16} = .31$$

For a small group of students, an index of discrimination for an item that exceeds .20 is considered satisfactory. For larger groups, the index should be higher because more difference between groups would be expected.

Reliability may be defined as the degree of consistency or stability between two measures of the same thing. When two measures are not available, reliability is estimated by the degree to which the items correlate with the total score. When the items are of equal difficulty, the KR_{21} formula to estimate reliability may be used. When the items have different levels of difficulty, the KR_{21} will underestimate the reliability. Other formulas are available, but they are tedious to compute by hand.

Where: r_{xx} = the KR_{21} estimate of reliability

N = the number of items in the test

$\bar{x}$ = the mean score of the total test

S_x^2 = the variance of the total test

$$r_{xx} = \frac{N}{N-1}\left(1 - \frac{\bar{x}(N-\bar{x})}{NS_x^2}\right)$$

WORKSHEET ON MULTIPLE CHOICE[1]

1. The problem should be stated in the stem.

   (Poor) Betsy Ross:

   A. Married George Washington
   B. Made the flag
   C. Rode with Paul Revere

2. All options should be plausible.

   (Poor) An electron is a:

   A. Negative particle
   B. Positive particle
   C. Voting machine

3. Avoid repeating words.

   (Poor) Anthropology is:

   A. The study of human behavior
   B. The study of animal behavior
   C. The study of insect behavior

4. Avoid making the longest response correct.

5. Avoid giving irrelevant clues due to grammar.

   (Poor) The first explorers of the Northwest were:

   A. Daniel Boone
   B. Lewis and Clark
   C. Mason and Dixon

6. Avoid unnecessary words.

   (Poor) The industrial revolution brought many changes to the American way of life. Outstanding among these was the cotton gin invented by:

   A. Eli Whitney
   B. Thomas Edison

[1]Handout used by Sue Legg.

7. Avoid using negatives.

8. Place blanks near the end of the sentence.

(Poor) A _____ is a tax on imported goods.

A. Sales Tax
B. Tariff
C. Levy

9. Use none of the above or all of the above carefully.

10. Arrange in orderly fashion. Column listing is usually easier to read.

The Battle of Tours was fought in:

A. 212 A.D.
B. 732 A.D.
C. 1215 A.D.

In evaluating the following items, ask

- Is the point important?
- Is enough information provided in the stem?
- Which cognitive level does the item measure?
- Are there common errors in test construction?
- Is there one answer which is clearly correct?

Care of Adults with Surgical Conditions

1. Samuel Babson

Based on the information provided about Mr. Babson, the initial nursing action would be to:

1. Start oxygen
2. Check vital signs
3. Place in shock position
4. Notify the doctor

2. When replacing fluids in burned patients, water intoxication may present a complication. Which of the following manifestations should alert you that water intoxication might be developing?

a. tremors
b. twitching
c. diarrhea
d. salivation

1. all of these
2. b, c and d
3. d only

3. When burns are treated by the open method rather than pressure dressings, the nursing problems are especially great because of which of the patient's needs?

a. The need for greater isolation of the patient from sources of infection
b. The need for a lower environmental temperature
c. The need for a lower environmental humidity
d. The need for special measures in handling and moving the patients

1. a and d
2. a and b
3. b and c
4. all of them

4. A neighbor has brought her burned child to you for advice. On which of the following factors should you judge the severity of the burn?

a. The rule of "eighteen"
b. The percent of body surface involved
c. The depth of the body wound
d. The amount of pain

1. a, b and c
2. b and c
3. b and d
4. d only

Maternal-Child Health Nursing

Jane Davis just delivered her first child. She is very excited about having a son; however, she tells the nurse that she is apprehensive about caring for her baby. Mrs. Davis asks the nurse about the rooming-in unit.

The following questions relate to this situation:

5. Mrs. Davis has been urinating frequently. This most likely is indicative of:

   a. A nervous response
   b. A postpartum cystitis
   c. An increased sensitivity of the bladder
   d. The body's effort to return its waste metabolism to normal

Mrs. Davis finds rooming-in a satisfying experience. She decides she wants to breast-feed.

6. Which of the following influences the success of breast-feeding?

   a. The amount of fluid intake
   b. The amount of colostrum secreted
   d. The amount of milk the baby desires
   d. The mother's desire to want to nurse

7. Your patient has fallen in the bathroom and has a compound fracture. While waiting for medical help to arrive, you should:

   a. Elevate the patient's head to facilitate ventilation
   b. Cleanse the wound with hydrogen peroxide to help prevent infection
   c. Cover the wound with a dry clean dressing
   d. Splint the fracture to prevent further injury
   e. Give the patient fluids to help prevent shock

8. Below are four (4) common solutions used for enemas. Which one is the most desirable solution?

   a. Tap water
   b. Soap solution
   c. Hypertonic solution
   d. Normal or physiologic saline solution

9. Consider these two statements:

   a. Reduction in the hemoglobin concentration of the blood is to be expected in pregnancy.
   b. Depression of erythrocyte production is a normal development in pregnancy.

   1. Both statements are true, and a helps to explain why b is true.
   2. Both statements are true, but a does not help to explain why b is true.
   3. a is true, b false.
   4. a is false, b true.

Types Of Items And Examples

The type of item used is far less important than the care and thoroughness with which the items are prepared. For most purposes, the regular multiple-choice type of item has been found most satisfactory. However, to lend variety to a test, there are several types of objective items which may be written -- each type having a number of variations. Several different types, with some examples of each, are given below.

I. MULTIPLE-CHOICE ITEMS

A. Straightforward Multiple-Choice. This is the most common type of objective test item and is familiar to everyone. Two examples are given below.

1. The fatigue of muscle is due primarily to
   (1) the overuse of the individual muscle fibres
   (2) the production of lactic acid within the muscle cells
   (3) excessive carbon dioxide production
   (4) a limitation of the oxygen supply
   (5) a limitation of the food supply

2. If a train runs x miles in y hours, how far does it run in z hours?

   (1) $\frac{xz}{y}$ (2) $\frac{xy}{z}$ (3) $\frac{yz}{x}$ (4) xyz (5) $xy - z$

B. Reverse Multiple-Choice. In this type of multiple-choice item, the student is asked to select the one wrong answer. The use of this type is not highly recommended, since it tends to be confusing to students, but in cases where it is used, the work which indicates the negative, or reverse, quality of the item should be capitalized and underlined, as follows:

1. Which of the following has NOT been derived from Darwin's thesis expressed in the Origin of Species?
   (1) the "argument from design," demonstrating the existence and benevolence of God
   (2) the theory that the only standard for judging a line of conduct is its ability to make itself prevail
   (3) the theory that man is the product of causes which had no prevision of the end they were achieving
   (4) the theory that war is a fundamental law of development
   (5) the belief that ruthless self-assertion and cutthroat competition are principles to be followed

2. The various social security laws of the state and federal governments insure men at least partially against the hardships resulting from all of the following EXCEPT
   (1) unemployment
   (2) injury on the job
   (3) old age
   (4) blindness
   (5) ill health

3. In which of the following was there the LEAST amount of economic freedom?
   (1) the manorial system
   (2) the merchant-guild system
   (3) the craft-guild system
   (4) the domestic system and the period of mercantilism

C. Complex Multiple-Choice. This type of multiple-choice item allows for the asking of more than one question at once. It does not, however, allow credit for any partial knowledge. That is, the student must know all of the answers to receive credit on the item. This type is illustrated as follows:

1. Which of the following statements are correct according to the theory of the Bohr atom?
   a. The nucleus of an atom contains only protons and electrons.
   b. The number of electrons in an atom in the normal state equals the number of protons.
   c. The nucleus of an atom contains protons and neutrons.
   d. The number of protons always gives the atomic number.
   e. An atom may lose one or more protons in ordinary chemical reaction.

   The correct answer is

   (1) a and c (2) b and d (3) d and e
   (4) b, c, and d (5) a, b, and c

II. GROUP ITEMS

A. Common-Data Items. This kind of group enables the examiner to ask several questions on a situation without the necessity for repeating the data in each item. An example follows:

1-3. In mice, yellow coat color (Y) is dominant to non-yellow (y). Whenever two yellow mice are mated, it is found that their offspring always occur in a ratio of approximately two yellow to one non-yellow.

1. The two-to-one ratio obtained in matings of yellow mice is an example of
   (1) interaction of factors
   (2) hybrid vigor
   (3) sex linkage
   (4) complementary factors
   (5) lethal factors

2. The genotypes of the parent yellow mice are
   (1) both sexes Yy
   (2) both sexes YY
   (3) both sexes yy
   (4) one sex Yy, the other yy
   (5) one sex Yy, the other YY

3. The cross also illustrates
   (1) independent assortment
   (2) multiple effects of a single gene
   (3) backcross
   (4) bihybrid ratio
   (5) interaction of factors

B. Key List Items. A short or a long key list may be used for a group of items, but since each item may have only five possible answers, a slightly different technique must be used for the long-key-list groups.

Example of short-key-list groups.

1-5. Select from the key list the appropriate description or definition of each of these items.

Key List

1. a statement resulting from direct observation
2. a statement of value
3. a statement depending upon interpretation of a variety of evidence
4. a statement summarizing a group of instances
5. a statement resulting from agreement, differences, and/or concomitant variation

1. A generalization
2. A simple fact
3. A statement of moral worth
4. A casual connection
5. An hypothesis

C. Diagram or Picture Groups. Diagrams may be used in the same manner as a key list is used, if there are no more than 5 parts to be labeled. That is, the parts might be labeled 1-5, and the items written as follows:

1-5. These items refer to the diagram above. Select your answer for each item from the diagram.

1. Which part of the diagram represents the left ventricle?
2. Which part of the diagram represents the left auricle?

Also, a group of five illustrations might be used in the same manner.

Where more than five parts of a diagram or locations on a map need to be identified, it is usually preferable to write items of the multiple-choice type. Each item may begin with a reference to one of the diagram symbols. For example:

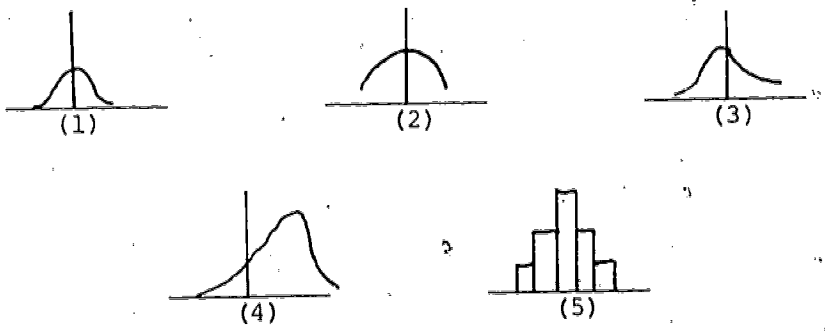
6-20. These items refer to the diagram 1-5.

6. The symbol A in the diagram refers to the
   (1) liver
   (2) pancreas
   (3) stomach
   (4) duodenum
   (5) spleen

7. The part labeled B is part of the
   (1) digestive system
   (2) respiratory system
   (3) autonomic nervous system
   (4) reproductive system
   (5) skeletal system

In certain fields it is effective to use small diagrams labeled 1-5 as answers to ordinary multiple-choice items. For example:

21. Which of the following graphs shows the greatest positive skewness?



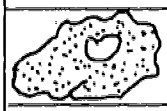
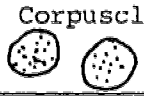
IV. COMBINATIONS OF VARIATIONS

There are many variations of each of the types of items mentioned, and many combinations of types. On the following pages are given a few of these possibilities.

A. Variations of Diagram Type.

117-122. Directions: In Table 1 certain body-parts or cells are indicated by picture or by name. These are numbered and listed vertically. The horizontal line lists five of the chief types of tissues. Fill in the table by placing the letter x in the space which indicates the correct major tissue for the body-part named.

Table 1

	BODY PART or CELL	TISSUE TYPES OR CLASSES				
		Epithelial (1)	Contractile (2)	Nervous (3)	Sustentative (4)	Reproductive (5)
117.	Cartilage					
118.	Bone					
119.						
120.	Egg					
121.	Teeth					
123.	Red Corpuscles 					

B. Variations of Classification Type.

Items of the type illustrated below are useful in measuring how well students handle correlated or cause-and-effect relationships. In writing such items, where the relationship is definitely cause and effect, the cause should be given first.

188-190. Answer each of these items.
1 if increase in the first of the things referred to is accompanied by increase in the second, or if decrease in the first is accompanied by decrease in the second;
2 if increase in the first of the things referred to is accompanied by decrease in the second;
3 if the second of the things referred to remains constant, or approximately constant, even though the first increases or decreases.

188. Amount of carbonates dissolved in the water of a river.
Number of clams in the river.

189. Temperature of the environment of a mammal.
Body temperature of the mammal.

190. Number of lemmings in an arctic area.
Number of caribou in the same area.

One means of presenting students with items which require reflective thinking rather than memory alone is to set up hypothetical situations which differ from the situations encountered during instruction. The items given below illustrate such a series.

200-203. You have acquired some knowledge of the earth and its motions as they really exist. In these items you are to identify the effects of some wholly imaginary conditions. Answer each item
1 if the statement would be true if the earth were not inclined on its axis;
2 if the statement would be true if the orbit of the earth were a circle rather than an ellipse;
3 if the statement would be true if the earth revolved toward the west rather than toward the east;
4 if the statement would be true if the earth had half its present diameter but retained its present mass;
5 if the statement would be true if the earth had no moon.

(Assume only one of the above imaginary conditions occur at a time.)

200. All the solar days would be of equal length.

201. Objects would weight equator and the ecliptic would be identical.

202. The celestial equator and the ecliptic would be identical.

203. The sun would set in the east.

C. Minimum-Information Items. It is possible to write machine-scorable items in such a way that the correct answer is not actually shown. An illustration of such a method is given in the following items.

1-15. In each of these items a word is defined. Think of the word that fits the definition. Then mark on your answer sheet the rectangle corresponding to the choice which gives the first letter of the correct word.

1. Acceleration of a chemical reaction produced by a substance which may be recovered practically unchanged at the end of the reaction.

(1) a (2) c (3) d (4) e (5) o

2. The smallest particle of a substance which retains the properties of a substance.

(1) a (2) c (3) m (4) p (5) r

In the first item, of course, the answer is 2 because the word sought -- catalysis -- begins with a c; in the second, the answer is 3, for molecule begins with an m.

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LIST OF PERFORMANCE OBJECTIVES RELATED TO THE AREA OF COMMUNICATION TO BE EVALUATED BY CONFERENCE PARTICIPANTS[1]

Directions: Read each behavior listed below, and evaluate each one in terms of whether or not, as stated, a clear description of the behavior to be observed is incorporated in the statement. If your answer is "Yes", place a (✓) in the "Yes" column. If your answer is "No", place a (✓) in the "No" column. Use the "Undecided" column if your decision is neither "No" nor "Yes".

Clinical Objectives Establishes and maintains effective relationships	Yes	No	Undecided
2. Uses clues from client to determine receptivity to new ideas.			
3. Communicates orally with effectiveness.			
4. Respects the individuality and dignity of clients.			
5. Makes effective use of periods of silence in communicating with clients.			
6. Gives positive and negative cues to indicate a genuine response in client interactions.			
7. Summarizes, at intervals, dialogue between the nurse and client.			
8. Confirms cues in client's messages.			
9. Demonstrates a willingness to listen.			
10. Evaluates nurse/client interactions.			
11. Applies appropriate measures to cope with barriers to communication.			
12. Describes meaningful patient behavior in objective terms.			
13. Selects language appropriate to the listener.			
14. Maintains eye contact with clients during interviews.			
15. Uses concepts and communication techniques adequate to accomplish the intended purposes of nurse/client communications.			
16. Conveys acceptance of client during nurse/client communication.			
17. Maintains open channels of communication with clients, families, and team members.			
18. Reports promptly pertinent information about patients and clients to an appropriate member of the health team.			
19. Encourages client and family to verbalize their feelings.			
20. Interacts constructively as a client advocate with members of the health team.			
21. Develops therapeutic relationships with clients.			
22. Identifies behaviors which reflects alternations in system speech formation and transmission.			
23. Demonstrates controlling and directing feedback.			
24. Establishes trust in nurse/client interactions.			

[1]Handout used on October 23, 1978

THE CLINICAL PERSPECTIVE ON EVALUATION

Eleanor Lynch

Clinical Components of Evaluation

INTRODUCTION

The basic principles of evaluation in educational programs are applicable equally whether we are measuring the theoretical components or evaluating the clinical components of nursing. Whatever purposes are designated to be served by the evaluation of nursing students' performance in the clinical setting, they will only be served effectively if the evaluation process is systematic, if the objectives to be assessed are stated unambiguously, and if the evaluators have agreed-upon standards to be used to assess the extent to which the specified objectives have been attained by nursing students. We cannot judge whether objectives are being or have been achieved without knowing specifically what skills and abilities are expected to be attained by nursing students at various stages in the educational program.

Evaluation of the clinical components of a nursing course differs from the evaluation of the theoretical components in that the emphasis is on the assessment of behavioral skills related to performance -- the "doing" aspect of nursing. A question that needs to be raised is: "What will the nursing student be doing when she or he is demonstrating achievement of the behaviors designated to be assessed in the clinical setting?" Once this question is asked and answered appropriately, it is unlikely that behaviors

to be assessed could be stated in terms related to "appreciating" or to "has the ability to." "Appreciating" could mean holding in high regard. But, since the verb could also mean exercising wise judgment, experiencing a warm feeling, or valuing highly, the word is ambiguous unless defined more finitely. "Has the ability to" is too general a phrase. An ability is a construct. As a construct, the particular aspect cannot be evaluated as stated. A construct is a psychological trait or quality which we presume exists in order to explain some aspect of behavior. The particular ability in question must be considered in terms of simpler subsystem or subset behaviors. Until we are able to identify the several subset or subsystem behaviors by analysis to determine the factors involved in the ability, the construct cannot be evaluated or measured.

There is a need to be parsimonious in evaluating student performance in the clinical setting. We need to look very carefully at what we are evaluating because the chief technique, observation, is an expensive method of evaluation generally involving a one-to-one relationship between the nursing student and the instructor. Therefore, it is important to differentiate those aspects that can be economically and effectively measured by well-developed paper-and-pencil tests from those aspects that require the more expensive method of observation. It is necessary to plan carefully so that time and resources are not used ineffectively or uneconomically.

BASIC FACTOR IN DEVELOPING A MODEL FOR PERFORMANCE EVALUATION IN CLINICAL SETTINGS

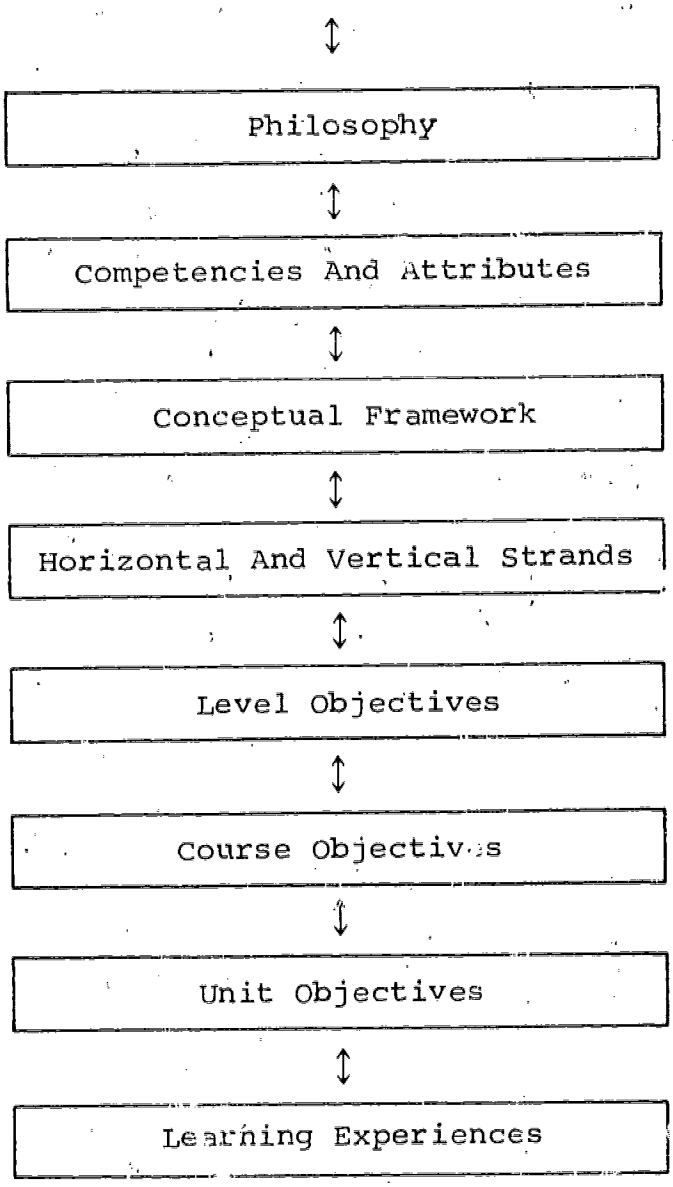
Evaluation in a nursing program is a diverse and complex process involving the collection of pertinent information -- not only about the competency of the products of educational programs, but also the process of evaluation itself.

Figure 1 provides the framework for the developmental components of the educational system. The horizontal arrows represent a two-way feedback mechanism between each of the developmental components of the system; the framework, Evaluation of the Process and the Product, and the vertical arrows represent a two-way feedback mechanism between the developmental components of the system. The characteristics of the graduates, or competencies and attributes, reflect the philosophy of the program and, in defining the overall outcomes of the program, the product is described. These general abilities provide a general direction for curriculum development and are basic to the determination of the level of specificity needed in statements of behavioral expectations at predetermined points in the program, i.e., at levels, for courses, for learning experiences, and for the development of evaluation tools. Evaluation, as conceptualized in Figure 1, is an ongoing process for the total curriculum as well as for the evaluation of objectives.

Formative and summative evaluation are two distinct and separate components of evaluation (Popham, 1975, 13-14). Formative evaluation is defined as those assessments of worth focused on instructional programs that are capable of being modified; summative evaluation is defined as those assessments of value focused on completed programs. Thus, formative evaluation provides on-going information about the effectiveness with which students are achieving objectives. Waiting until the end of the course to make such determinations is too late -- too late to serve any purpose of evaluation other than grading, i.e., summative evaluation.

The goals of evaluation should be directed to improve, not to prove. If we start out only to prove a point in relation to the evaluation process,

Figure 1


EVALUATION (PROCESS/PRODUCT)
Philosophy
Competencies And Attributes
Conceptual Framework
Horizontal And Vertical Strands
Level Objectives
Course Objectives
Unit Objectives
Learning Experiences

more than likely the decision-making process will be based on either insufficient or invalid evidence. Evaluation directed toward the improvement of the educational program requires the gathering of pertinent evidence in accordance with specific plans for making judgments.

Often an inordinate amount of time is spent grading students' performance in the clinical setting, e.g., every day or every week, and grading, instead of counseling and guidance, becomes the prominent issue. Do we allow students time to learn and understand the facets of patient care before grading them? Sometimes faculty fail to allow time for students to learn. Rather, they gather information formatively, to see where the nursing student is on the continuum of achieving objectives and use the information for summative purposes.

VALUES AND EVALUATION IN CLINICAL SETTING

The values that we place on the purposes of evaluation can indeed, affect the validity of decisions in relation to the outcomes of evaluation. Purpel and Ryan (1976) emphasized the point that education is a value-laden human activity with values being built into the curriculum in a number of ways. The use of authority, including how rewards and punishments are meted out, also carries with it a moral lesson. Since students often regard evaluation generally, and clinical evaluation in particular, in terms of rewards and punishment, a moral lesson is indeed involved in the assessment of performance in the clinical area.

Reilly (1975) asserts that in clinical evaluation the student is even more vulnerable than in any other evaluative experience. Therefore, faculty

need to focus on this vulnerability and to do whatever they can to provide a comfortable, safe, secure environment that would promote rather than retard growth. Reilly supports Purpel and Ryan's contention that students regard evaluation in terms of rewards and punishment and advises those engaged in clinical performance evaluation to establish a climate based on trust and acceptance.

Dorothy Smith (1977) contends that the considerable contact between faculty and students in the clinical setting influences the development of the students' values. Values and attitudes change more slowly and are often more nebulous than factual information. Thus, they are not usually subjected to the kind of scrutiny accorded hard facts. It is important to recognize the impact of a teacher's system of values, beliefs and philosophy during clinical instruction and clinical evaluation.

Is problem-solving an essential component of educational programs in nursing? Are students given opportunities to use the problem-solving process in the clinical setting? For instance,

> A nursing student arrived at an hypothesis that is fallacious because it is not based upon a careful analysis of nursing interventions likely to be effective in resolving a particular client's needs. The instructor conveys annoyance and utter disbelief while enumerating the errors made by the student.

What effect will such a reaction have on the student's ability to use the problem-solving process? What effect will such an approach have on the student's motivation? How could such an approach affect the student's growth in terms of her ability to solve problems? These questions are pertinent.

Do we provide adequately for the growth of students? What about the

needs of students who demonstrate a high level of ability? Consider the following situation:

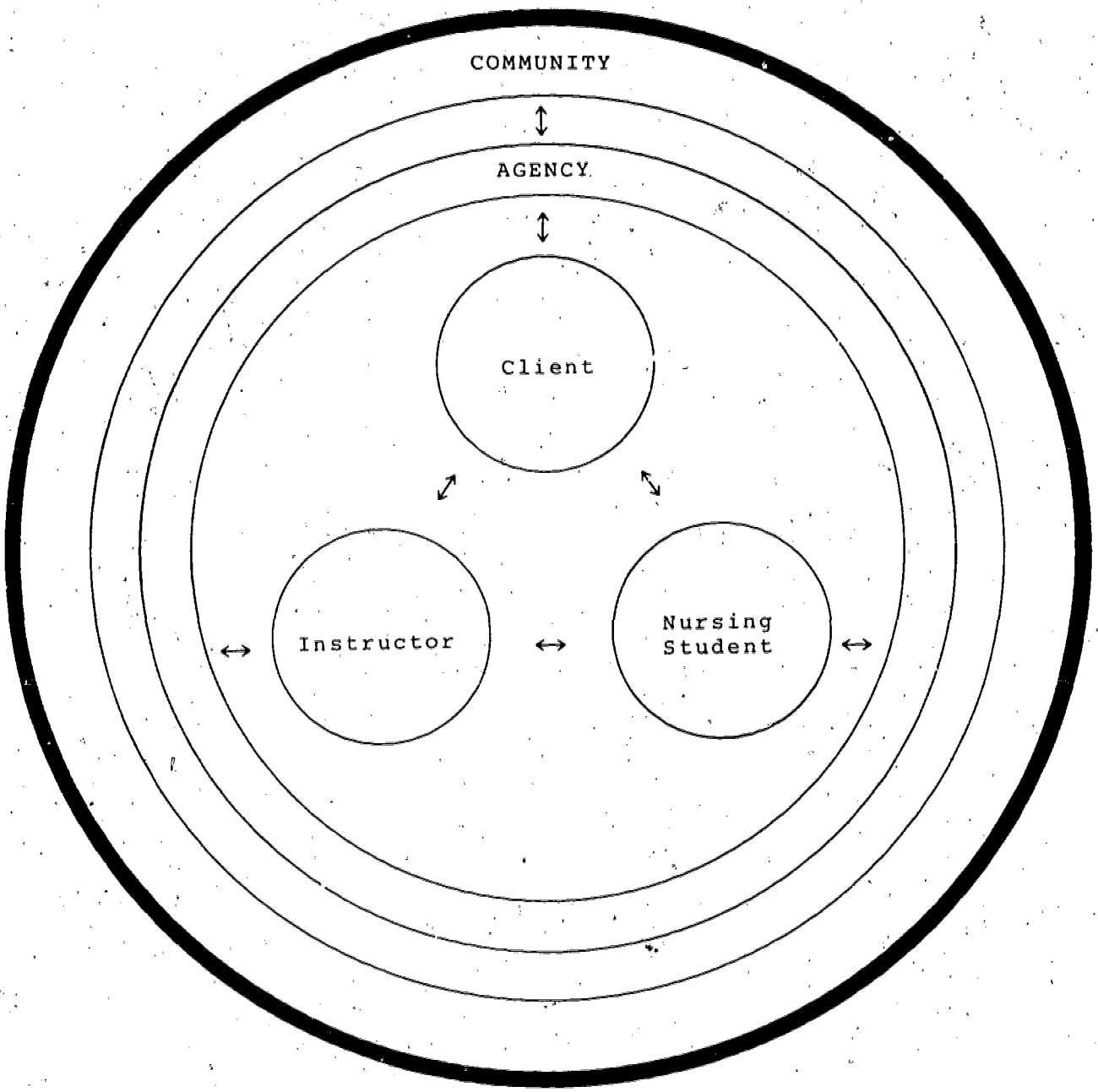
> During a post-conference session a nursing student, whose performance is at a C- level, is attempting to express an idea in response to a question raised by the instructor. As the student slowly and haltingly speaks, another student, whose performance is at an A level, interrupts and pursues the same idea.

How should the instructor react if the less capable student stops at this point? To say, "Will you please let her speak," would most certainly be inappropriate. There is a possibility that the more capable student may be unaware of her behavior and that her main objective might have been to help the less capable student. In this situation, there is a need to provide the kind of environment that would promote the security of both students. The instructor must react in a manner that supports both learners.

Is there a tendency to focus more on students whose ability falls at the lower end of the ability scale? What happens to the student whose abilities fall at the upper end of the scale? Is it possible that this focus might lead to a disregard for the needs of these students? Will these students, feeling unchallenged, leave nursing because they feel that their needs were not being met? Will the ultimate loss to nursing be a loss of persons with leadership potential? Highly competent students need encouragement and opportunities for growth. Their special lesson might be to learn to use their special skills in a beneficial manner.

Figure 2 illustrates the multivariate system involving the interelationship between a client, a nursing student, and an instructor with a multiplicity of subordinate and supraordinate components interacting. The components

Figure 2
INTERRELATIONSHIPS
Client/Nursing Student/Instructor



are pertinent whether we are talking about an agency, e.g., hospital, or a situation in which the nursing student is functioning in a community health agency. If we are dealing with an institution, or health agency, we are talking about formal organizations, while the family in the home would be a part of the social organization.

In examining the interaction between the subordinate and the supra-ordinate component one observes the client interacting with the environment in which he happens to be in terms of health-care needs, the nursing instructor serving in a supervisory capacity and the nursing student providing for the client's needs. This situation is unlike that of a student taking a test which focuses on knowledge related to the care of a patient. The clinical situation is a highly complex, multivariate entity involving a multiplicity of components. Nurse educators need to be mindful of this fact.

If an instructor focuses on the concept of client advocacy as an important role of the nurse in the theoretical segment of a course, in the clinical setting, the behavior of that instructor in relating to other members of the health-care team must be representative of this concept. The instructor's behavior will influence the way students will relate to the concept of client advocacy. If the nursing student does not observe the nursing instructor functioning in this capacity, then the student will be receiving conflicting messages, i.e., "do as I say, but not as I do."

Because performance evaluation in clinical settings is such a highly complex process, one might ask: "Why not use simulated experiences to offset some of the complexities?" Simulated experiences are of value in the assessment of some aspects of the competencies expected of nursing students.

Well-structured simulated experiences can provide information relative to the application of clinical knowledge by students. However, performance in the clinical setting using carefully selected clients whose care would serve as stimuli to elicit behaviors required to be assessed for students has the potential for a higher level of validity. The element of control possible in stimulated experiences reduces the unplanned-for aspects which normally comprise the real life situation.

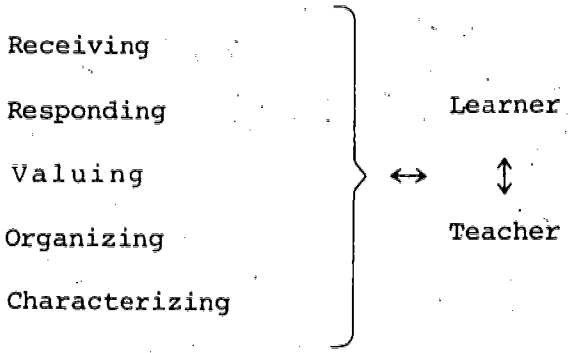
The clinical setting is a changing, evolving situation. Client care in the clinical setting involves planning for and dealing with factors that can be anticipated and dealing with factors that develop within the situation which cannot be specifically anticipated. The holistic approach to care, rather than the task-oriented approach, is used by the nurse who focuses on those procedures or techniques required to satisfy specific client needs.

Learning and practicing procedural aspects are important in the education of nursing students. These aspects may be learned and evaluated more economically in a simulated setting, e.g., the classroom laboratory. The evaluation of procedures can be accomplished by the use of a simple checklist. The checklist could be composed of the important critical components related to the safety and effectiveness of the procedure. A determination could be made with the checklist as to whether or not the student's performance reflected the critical components of the procedure.

The view of various methods used to gather information about students' competencies depend on faculty values and value systems. The learner and the instructor are affected by the intrinsic and extrinsic factors. Figure 3 illustrates the interrelationship of aspects of the affective domain in situations involving the learner and teacher.

Figure 3

INTERRELATIONSHIP OF ASPECTS OF THE AFFECTIVE DOMAIN IN SITUATIONS INVOLVING THE LEARNER AND TEACHER IN A ONE-TO-ONE RELATIONSHIP



Value systems are the products of life experiences. Value systems can change over a period of time. It is possible that an individual's concept of personal values may prove to be inaccurate in some situations. A person may believe that a specific value has been incorporated; however, in some situations inconsistency between belief and behavior may result in functioning at a level quite different from the one imagined. One's value system might be representative of a variety of levels in terms of the categorizations of the affective domain. It is important to be aware of this when working with students in the clinical setting.

PERSPECTIVES ON EDUCATIONAL EVALUATION IN NURSING

There is a hierarchial level of educational objectives in nursing, progressing from curriculum objectives to course objectives, and finally to the objectives of learning experiences. Figure 4 relates aspects of the curriculum development process to the what, who, when, why, where, and how aspects of the evaluation process.

Level objectives focus on the "who," the "what" and the "when". Faculty are dealing with the nursing student at interim points in the program, not at the end of the program. The designation of the behaviors at a particular level reflects the content of the behaviors in the expected terminal outcomes of the program but, in general, they reflect a different degree or extent of attainment. The course objectives focus, in general, on the "what" of evaluation. It is not that the other components are not important, but greater emphasis is given to the "what" in terms of the total curriculum.

Objectives of learning experiences include behaviors representative of the cognitive, psychomotor and affective realms of behavior. A paper-and-pencil test could be used to measure attainment of the aspects specific to the cognitive domain as well as the cognitive aspects related to the psychomotor and affective behaviors for the course.

A variety of tools and techniques, in addition to written tests and performance evaluation tools, are necessary to obtain evidence of achievement in relation to the multiple facets of the objectives.

Figure 4

ASPECTS OF THE EVALUATIVE PROCESS IN EDUCATIONAL PROGRAMS

- Curriculum Objectives -- What, Who, When, Why, Where, How
  - Level Objectives -- Who, What, When
    - Course Objectives -- What
      - Unit Objectives
        - Objectives of Learning Experiences
          - Cognitive behaviors
          - Psychomotor behaviors
          - Affective behaviors

Evaluation

How
Where

- Written Tests
- Performance
- Other tools

Figure 5 helps to clarify the relationship between the behavioral components of course objectives and evaluation methods. Sample evaluation methods include a variety of tests, reports, group projects, ~~and~~ the three major aspects under performance evaluation -- observation, oral communication, and written communication.

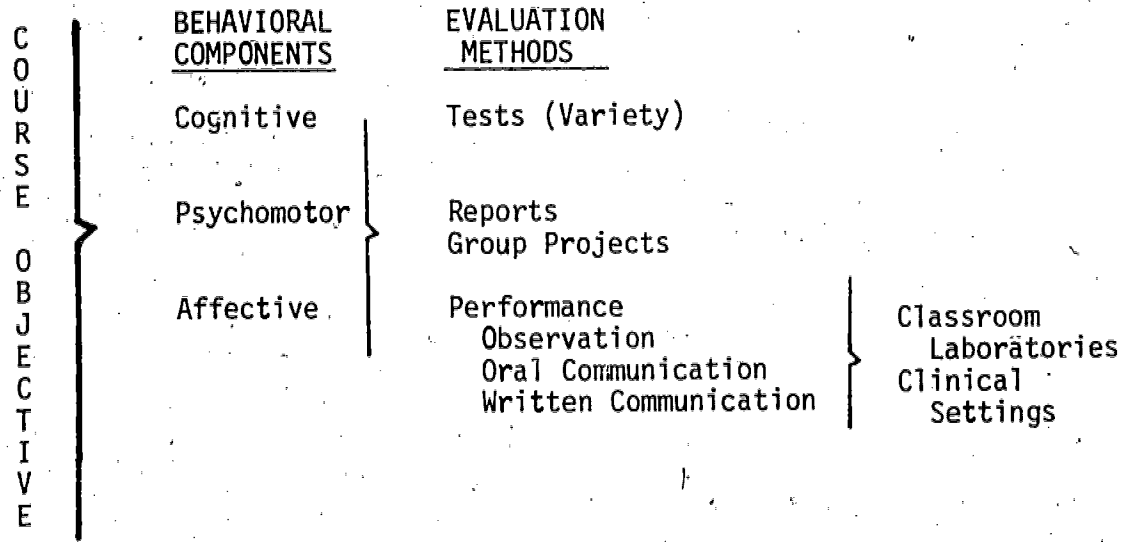
The principal tool of clinical performance evaluation, observation, does not lend itself to the degree of precision that is possible in theoretical evaluation with the use of written tests. There is no substitute in clinical performance evaluation for direct observation of the actual behavior of individuals over a period of time. However, observation must be purposeful to be meaningful. Each evaluator must be thoroughly familiar with the previously agreed-upon objectives, qualities, behaviors or abilities which are to be evaluated, the previously determined criteria or standards for judging levels of performance, and the kind of behaviors that will demonstrate most clearly the behaviors to be evaluated.

Faculty agreed-upon objectives and criteria that are well-defined and clearly stated provide the basis for purposeful and consistent observations in performance evaluation. These help to minimize the effects of biases and special interests of the faculty.

The reliability of observations is directly related to their frequency. One example does not necessarily warrant a general conclusion; however, neither does a specified number of observations assure the required competence demonstrated should be the most deciding factor.

Figure 5

SCHEMATIC REPRESENTATION OF THE EVALUATION OF LEARNER OUTCOMES FROM COURSES



Among the factors contributing to the establishment of levels of competence for student performance, for courses, and for levels in the program, are the sequence of course, course emphases, the student rotation pattern, the health status of clients used for student experiences, and the roles for which the nursing student is being prepared.

SAMPLES RELATED TO INCREMENTAL EXPECTAIONS IN STUDENT BEHAVIORS

HEALTH STATUS OF CLIENTS

MAXIMUM HEALTH POTENTIAL → IMPAIRED HEALTH POTENTIAL → DEPLETED HEALTH POTENTIAL

ROLE OF NURSE

DEPENDENT → INDEPENDENT → INTERDEPENDENT

Development of a Blueprint for the Assessment of Clinical Objectives

Figure 6 represents a possible approach to the development of a blueprint for the assessment of clinical objectives. The vertical axis of the grid could be used to list the objectives derived from behaviors stipulated in the objectives for learning experiences and related to the performance components of the objectives. The horizontal axis of the grid could be used for the content reflected by the objectives for learning experiences and related to patient/client care. Systematic planning for the assessment of the performance of nursing students, using the aforementioned grid, could also be used as a guide for the course as a whole in addition to planning for the assessment of individual nursing students.

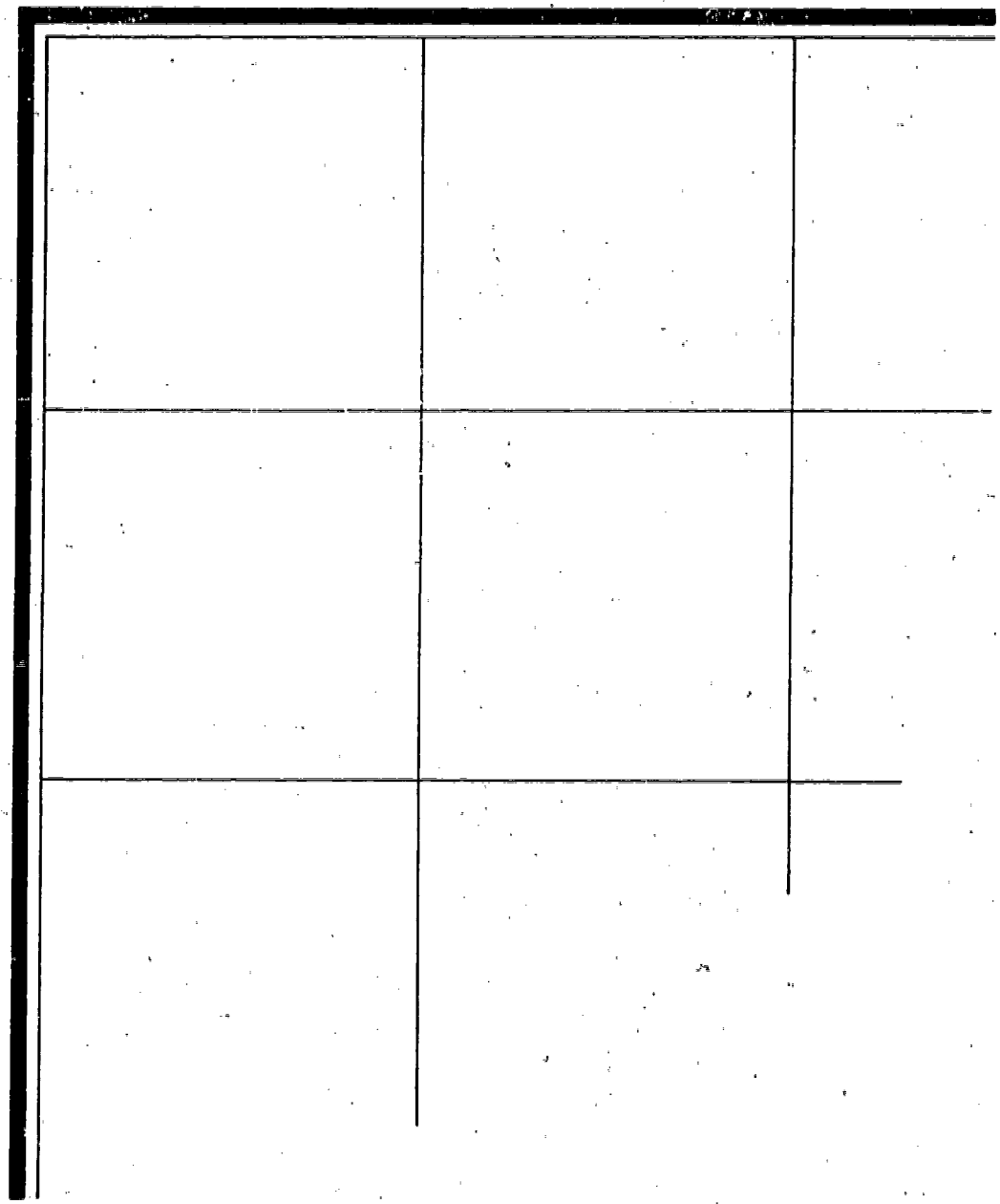
CONCLUSION

Clinical performance evaluation is a complex process involving problems that can be controlled with valid and reliable evidence about the achievement of clinical objectives by nursing students. There is no one tool that is applicable to all nursing programs since each program is unique. Although two programs establish exactly the same objectives, the needs in terms of each program for a clinical evaluation tool will differ. Effective evaluation depends on a high level of congruence between the framework of the curriculum and the techniques established to assess outcomes at various levels in the program. In addition, there must be a high level of agreement by faculty regarding the behaviors to be assessed and the standards or criteria to be used in the assessment process.

Figure 6
BLUEPRINT FOR THE ASSESSMENT OF CLINICAL OBJECTIVES

Content-Derived from materials reflected by objectives for learning experience and related patient/client care.

Objectives - Derived from behaviors stipulated in objectives for learning experiences and related to performance components of objectives.



The following approach can be used to reduce the element of subjectivity inherent in clinical performance evaluation and to increase the reliability and validity of the process:

1. Identify specific components of course objectives basic to the development of performance objectives in the clinical setting.
2. Identify and define the distinct observable behaviors that are essential to the achievement of the performance objectives.
3. Describe in behavioral terms the criteria or standards that will be used in judging levels of performance relative to each of the expected behaviors.
4. Identify specific nursing actions that illustrate established levels of performance as described by the criteria for each of the expected behaviors.

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PRINCIPLES OF PERFORMANCE EVALUATION

Some general principles of performance evaluation are basic to clinical evaluation. These principles include:

1. *Performance evaluation is concerned with how a person functions in a specific setting.*
   The more complex the setting or activity, the more complex and difficult will be the process of evaluating the individual's performance.

2. *Performance evaluation involves judgments and interpretations.*
   Evidence relative to each aspect of the performance to be evaluated is necessary for valid decision-making. An approach aimed at reducing subjectivity and maximizing objectivity is basic to valid judgments and interpretations.

3. *Performance evaluation requires knowledge of what is to be evaluated.*
   The more one knows about what is to be evaluated, the more penetrating and the more valid the evaluation is likely to be.

4. *Performance evaluation involves characteristic, measurable aspects which will serve to distinguish differences in quality or levels of performance.*
   Behaviors identified should be specific and unitary.

5. *Performance evaluation involves consideration of varying levels of performance.*

6. *Performance evaluation involves comparison with previously determined, appropriate criteria or standards.*
   Established levels should represent reasonable expectations at specified levels of ability.

APPLICATION OF PRINCIPLES

Performance evaluation is concerned with how a person functions in a specific setting.

The clinical experiences of nursing students occur in a variety of settings; students are expected to develop and demonstrate many roles. Health-care services in nursing encompass a wide variety of health-care needs, in a variety of settings, covering the age span from birth to death. Goals for services to clients include: health promotion and disease prevention; health maintenance and health restoration; rehabilitation; and comfort and ease when body defenses can no longer be supported.

Performance Evaluation Involves Judgments and Interpretations.

Judgments and interpretations introduce the element of subjectivity not only in the process of evaluation, but also in the selection of experiences to be used for the learning and evaluation of students. Unlike evaluation of the theoretical component in which test questions can be developed and tailored to reflect emphases of specific content areas, the clinical component depends upon the selection of clients and is more nebulous. Decisions by the instructor regarding the kind of client situations that will provide appropriate learning experiences require judgment at a level that is different from that in the evaluation of the theoretical component. The process is more complex.

Performance evaluation requires knowledge of what is to be evaluated.

Observations made of students in a specific clinical area are more likely to be accurate if made by instructors who are specialists in the area, and who are experienced in the evaluation of students. For example, the medical-surgical specialist in observing students assigned to assist clients with medical-surgical problems is likely to make more meaningful observations than the maternal and child specialist observing these students. This does

not imply that the person whose area of specialization is maternal and child care will be unable to focus on the general meaning of the objective. Rather, the specialist in medical-surgical nursing will be expected to have greater knowledge of client needs, and able to make an assessment of the ability of nursing students to satisfy the requirements set forth in the objectives being assessed.

> *Performance evaluation involves characteristic, measurable aspects which will serve to distinguish differences in quality or levels of performance.*

Behavioral statements which reflect action that can be interpreted in more than one way will require validation by the evaluator. There will be a need to find out the rationale for a specific action from the person being observed. This is an essential aspect of performance evaluation.

In reviewing some of the performance evaluation instruments, one occasionally finds a listing of behaviors such as "understands the basic sciences" or "applies principles of the basic sciences." Unequivocal assessment of these statements would not be possible by direct observation.

For example, if an instructor observed a first-level nursing student administering a cleansing enema and noted the nursing student adjusted the reservoir of fluid so that it was no more than 18 inches above the level of the client's anus, all the instructor can surmise at this point is that the student carried out the procedure in accordance with the specifications for the procedure. The instructor does not know for sure that the student was applying the appropriate physical principle related to the effect of the height of a column of fluid on the pressure of the fluid as it is introduced into the lower intestinal tract. However, if the instructor asked the student

about her reason for adjustment of the level of the reservoir, and the nursing student identified the related physical principle, then, and only then, can an instructor be sure that the student was applying the related principle in this particular situation. Therefore, we cannot attribute a correct action as an application of knowledge unless steps are taken to validate the knowledge. Without proper validation, in the aforementioned situation, the only objective that can be satisfied is "carries out procedures correctly."

Application of knowledge can be measured best by a test item. The development of such an item is not as easy as one would believe. For instance, to determine whether a multiple-choice test item is at the cognitive level of application, it is necessary to examine first the alternatives of options to see if the examinee can answer the question correctly by simply recalling the concept to be tested, or whether the concept is presented in a new way. A pertinent question to ask in the assessment of alternatives is: "What is the least amount of knowledge an examinee will need to answer the question correctly?" Who is to say what the most knowledge is? What do we know about the cognitive styles of individual examinees? Since this type of information is generally unavailable to instructors, the most valid decision is based on the least amount of knowledge rather than the most. A concept will have to be presented in a new way for the examinee to demonstrate application of knowledge.

An action or a response must not be interpreted as the outcome of a higher mental process if it can be interpreted as an outcome of one lower on the psychological or performance scale. It is therefore necessary to examine

carefully the objectives in the preformance evaluation tool and test questions in the theoretical evaluation to determine whether application is truly being evaluated or measured. The use of paper-and-pencil tests is a more reliable means of measuring knowledge.

It is important in nursing education programs to assess whether students can analyze patient care situations and pull related knowledge together to provide for the identified needs of patients. Guarding against comparmentalization of knowledge needs to be given special consideration in both the learning and the assessment processes. The "putting together" of concepts, with emphasis given to the relationship between concepts, must be a part of both the learning and the assessment processes. This must be an on-going activity throughout each semester for the integration of knowledge to be realized.

Mager (1962) focuses upon the importance of the specificity of objectives. Specificity and ambiguity can be regarded as a continuum. In view of this, instructors might ask: "Is there a point at which objectives can be too specific?" This is a possibility. Many specific, uncategorized objectives contribute to fragmentation in both the learning and assessment processes. If students are expected to regard client care holistically and to integrate the various related aspects to client care, instructors may undermine the achievement of these expectations by using a tool for performance evaluation which includes many uncategorized and often overlapping objectives. The correlation of related objectives will enhance the students' ability to integrate related concepts, and will provide for more effective and efficient tools for the assessment of clinical objectives.

Performance evaluation involves consideration of varying levels of performance.

The varying levels of performance should represent what the faculty believes to be reasonable expectations for varying levels of ability at specified levels in the program. If the levels of ability to be used for the assessment process in performance evaluation are excellent, good, average, and poor, or if letter grades A, B, C, and D are used, specific standards or criteria must be developed for each level of ability.

There is a real value in reducing the number of levels or standards to satisfactory and unsatisfactory, or acceptable and unacceptable -- to use criterion-referenced anchors. However, this alone will not solve the problem of ambiguity. If the unsatisfactory or unacceptable criterion behaviors are stated as direct negatives of the satisfactory or acceptable behaviors, insufficient information will be provided.

To promote the clarity of the unsatisfactory statement, it is necessary to know specifically what the student either did or did not do. Why was the behavior inappropriate or unsatisfactory? All aspects? Some aspects? For example, the following statement provides little information for effective evaluation: "Does not carry out technical aspects of effectively."

Another problem that arises with the use of satisfactory and unsatisfactory as anchors is related to the exact meaning of the terms. "Satisfactory" can mean average performance, based on an instructor's determination of expectations for students functioning at a "C" level, or "satisfactory" can mean passing, based on an instructor's determination of a minimal level of performance. These are entirely different concepts of "satisfactory." If, perchance, there is not faculty agreement as to the exact meaning of the term for a particular program, then, unintentionally, each instructor might use

an entirely different base for the assessment process, resulting in an infringement on the validity and reliability of the assessment process.

Performance evaluation involves comparison with previously determined, appropriate criteria or standards.

This is the crux of the problem in performance evaluation. Standards, like test norms, should be appropriate and realistic for the group being evaluated. Faculty agreement is essential.

GUIDING PRINCIPLES IN EVALUATION OF CLINICAL PERFORMANCE

Two concepts, especially important in the clinical evaluation of nursing students, are:

(1) Evaluation should be based on accomplishments directed toward the philosophy and objectives of the program.

(2) Evaluation should be related to nursing students' achievement of stated objectives in terms of established criteria.

There should be a direct relationship between performance evaluation tools, the behaviors delineated for appraisal, and the curriculum framework. An evaluation tool that does not reflect the philosophy and curriculum framework can hardly provide data needed for decisions in relation to educational improvement. A unifying framework provides the basis for an organized way of looking at growth and attainment from one level to another in the curriculum. If a unifying framework is used, it is possible to determine more reliably and validly whether progressive change has taken place in the important areas that are common to courses throughout the curriculum. Performance evaluation tools which include entirely different behaviors from course to course and from year to year negate the whole idea of progression in learning as well as make meaningful decisions difficult or impossible.

Approach to the Development of a Tool Which Reflects the Curriculum Framework

The following approach may be useful in developing a clinical evaluation tool:

1. Review the horizontal and vertical components of the curriculum.
2. Identify from the horizontal components one that can, by virtue of its comprehensiveness, serve as the basis for the model for the performance evaluation tool.
3. Determine the major behavioral categories to be used for the tool.
4. Referring to the vertical components and to the horizontal component selected for the framework of the tool, determine subsystem or subset behavioral categories under each major category.
5. Determine for each course behavioral expectations related to the subset or subsystem categories of behaviors.

Use of Tools for the Evaluation of Clinical Performance Evaluation of Nursing Students.

A variety of tools are necessary to evaluate the outcomes of education in nursing. Outcomes related to synthesis and problem-solving require tools other than those centered on observation. Nursing care plans, patient care studies, process recordings, and nursing diaries are samples of tools and techniques which are important to include in the evaluation of aspects of the clinical component of nursing.

The validity of process recordings or nursing diaries can be affected by the level of trust engendered by the instructor. For example, if a student does not perceive that a trusting relationship exists between herself and the instructor, how truthful is the student likely to be? Will the student identify areas of strengths and areas of weakness? Will the student be as honest as she might be in recording exactly what happened in her interactions with patients?

If the nursing student is expected to use performance evaluation tools for self-evaluation and discrepancies occur between the student's assessment and the assessment made by the instructor, how are the discrepancies handled? What type of guidelines are needed to deal with such a problem? These are just a few questions that need to be considered in the use of the performance evaluation tools by students for self-assessment.

PROBLEMS OF PERFORMANCE EVALUATION

There are common and persistent complaints leveled at methods of evaluation of the performance of nursing students, and they add up to an absence of the four major criteria of a good rating of performance. The complaints are:

1. *Lack of validity.* The tool does not measure what it is intended to measure on the ratings alone; therefore, it would not be possible to predict accurately how the individuals would behave in terms of relative strengths and weaknesses or in comparison with other individuals.

2. *Lack of reliability.* Comparable results will not be obtained each time the rating device is used under comparable circumstances.

3. *Lack of Objectivity.* Findings or ratings are open to a variety of interpretations by different evaluators. The procedure provides few, if any, safeguards against these individual interpretations.

4. *Lack of practicality.* The method is too time-consuming and complicated, involving more time spent in filling out the form that in observing the performance of the individual.

A REVIEW OF COMMON BEHAVIORS

A number of questions can be asked concerning the meaning of stated objectives and how the objectives reflect, correctly or incorrectly, faculty values and beliefs. Consider the following four objectives (Lynch, 1978:10):

1. "Formulates appropriate and realistic goals for clients." (Nurse-oriented goals, or nurse-client-oriented goals? Appropriate to or for whom? Realistic to or for whom?)

2. "Solicits and uses suggestions." (Must a person's request for information or assistance always be followed by precise use of the information?)

3. Accepts criticism gracefully. (Is a value judgement implicit in the statement?)

4. "Respects the dignity and uniqueness of the client." (How can this behavior be made operational?)

Review the following behaviors in terms of four components -- subject, behavior, specified conditions, criterion:

1. *Communication skills, i.e., listening* (Topf, 1969)

Effective Behavior	Ineffective Behavior
Waits out silence or allows patient to fill a pause.	Fills silence with own talking.
Allows patient to express an idea before making a suggestion.	Interrupts patient unnecessarily.
Indicates by brief, relevant comment that what the patient has said is understood.	Makes a suggestion before patient has been allowed to express himself.
Summarizes what the nurse thinks the patient has said.	Withholds indicating to patient that the nurse understands what the patient said.

2. *Leadership skills* (Wandelt, 1975:32)

Demonstrates Leadership Ability

a. Invites suggestions from members of group.

b. Gives recognition to achivement of individual members and to that of group as a whole.

c. Offers instruction and guidance when proposing a different way of doing things.

d. Encourages members of group to express likes and dislikes and to choose portion of work they would like to do.

e. Assists group to evaluate work accomplished and plan continued work.

3. *Critical Thinking* (Gronlund, 1976:62)

Demonstrates the Ability to Think Critically.

Distinguishes between facts and opinions.

Draws valid conclusion from given data.

Identifies assumptions underlying conclusions.

Summary

The integration of theoretical concepts in clinical evaluation requires careful planning, systematic ongoing evaluation, and a commitment to specific beliefs about performance evaluation. The evaluation of performance is a highly value-laden entity in which the person being evaluated learns much about the evaluator in the process. Conflicting messages can be given when there is a discrepancy between concepts identified as being significant and the instructor in a clinical setting demonstrates either a lack of focus, or a disparate focus. If problem-solving, the development of creative abilities, functioning in the role as a patient advocate, and the functioning as a change agent are important, adequate opportunity must be provided for the nursing student to be involved in activities which will foster the development of skills and reinforce learning.

The evaluator must be capable of demonstrating positive behaviors during evaluative procedures. Some of these positive behaviors are:

Anticipation instead of anxiety;

Encouragement instead of defeatism;

Reward instead of punishment

Confidence instead of mistrust;

Satisfaction instead of displeasure;

Trust instead of uncertainty;

Honesty instead of dishonesty;

Freedom instead of restraint;

Risk-taking instead of safety;

Self-determination instead of compliance;

Growth instead of stagnation or regression.

The evaluator must be able to use opportunities in the clinical situation for the clarification of values and the growth and development of students. Consider the situations below that might occur in either a pre- or post-conference session and the associated responses in terms of value clarification and the growth and development of the nursing student.

Situation	Response
Student reports that a particular intervention did not produce the effect anticipated.	Have you considered any alternatives to the measure that you used?
Student states that the care of an elderly, incontinent patient is distasteful to her.	Is it just this patient, or have you felt this way before in providing care for other clients and patients?

Situation	Response
Student arrives at a nursing diagnosis which is inconsistent with the information gathered by the student during the assessment phase of the nursing process.	Is your diagnosis consistent with the data obtained about the client? NOT How could you .....? OR You are aware .....

Hopefully, each instructor will be able to provide learning experiences in clinical settings that are growth-promoting for nursing students.

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REPORTS FROM SPECIAL INTEREST GROUPS

Teaching and Learning Styles

Janet Awtrey, Delois Skipwith, Kathleen Goldblatt

BACKGROUND INFORMATION

As the task force, composed of seven representatives from the University of Alabama School of Nursing in Brimingham, broached SREB's assignment to develop objectives for our school's project, the philosophy underlying the curriculum was reviewed. Some of the phrases which seemed paramount to the project included: man is unique, unified, valuing, and constantly interacting with his environment; man strives toward self-actualization, society influences individual behavior; learning is a continuous lifelong process through which the individual changes his behavior; learning occurs through active participation in the learning process and results from the integration of cognitive, affective, and psychomotor experiences; the faculty's role is to provide an environment which promotes utilization of the learner's unique abilities, experiences, and level of motivation; and, finally, efficient and economical learning requires concepts formation which promotes effective utilization of knowledge in nursing practices.

From this analysis, the task force decided that it was incumbent upon faculty to assist the individual student in developing in the cognitive,

affective, and psychomotor domains. Further, a variety of teaching styles must be employed. The question, however, dealt with which style of teaching is appropriate for a specific individual student. This question became the focus of our project.

The second major decision facing the task force was to define the term "non-traditional" student. The "non-traditional" student was defined as any transfer student, excluding registered nurses. Approximately 60 percent of our student body is composed of transfer students, primarily from two-year institutions. The task force proceeded on the assumption that the environment in a two-year institution is different than that of a senior college in student numbers, teaching methods, and expectations of students. It was a general consensus that a change in the learning environment and the corollary requirements when entering a senior college impeded student learning.

Once cognitive mapping of learning styles was chosen as the vehicle via which individualized instruction could be promoted, the task force identified the following objectives: to establish within a nursing education curriculum the use of cognitive maps with non-traditional students to (1) diagnose learning problems; (2) recognize, respect, and adapt to cultural differences; (3) present instruction appropriate to the learning style of the student; (4) identify learning obstacles; and, (5) prescribe alternative learning strategies. It was agreed that the project objectives for the school coincide closely with those of the SREB project.

Three workshops have been conducted by Dr. Ronald Bass, Coordinator of Learning, School of Dentistry, University of Florida in Gainesville. The first workshop aimed to acquaint faculty with the concept underlying cognitive mapping.

The objectives were as follows: (1) define the term "The Educational Sciences," (2) define the term "Educational Cognitive Style," (3) list the two main sections of "Symbols and Their Meaning," (4) list the three areas of "Cultural Determinants," (5) read and interpret individual cognitive style of others, (6) observationally map the cognitive style of others, and (7) prescribe instruction based upon information contained in a cognitive style map. Several weeks prior to the workshop, faculty completed a questionnaire to provide information for Dr. Bass. After the workshop, faculty were encouraged to read and seek discussion sessions with any of the members of the task force. Additionally, each member was challenged to attempt to observationally map students, particularly those who seemed to have difficulty in achieving satisfactorily. The outcomes of the first workshop were raising the faculty's awareness about cognitive mapping and providing a mechanism for more stringently considering the learning needs of each individual student.

The second campus workshop centered on the application of basic content presented in the first workshop. Workshop objectives were based on cognitive educational styles and stated that participants will be able to (1) prescribe didactic instruction; (2) prescribe clinical instructional procedures; (3) analyze instructional materials for elements required for the student to be successful in interaction with the materials; (4) predict student success or difficulty in clinical procedures from cognitive style maps; and (5) prescribe strategies for augmentation.

Prior to the second workshop, Dr. Bass viewed and mapped at least ten different videotapes or slide presentations used in the school for teaching purposes. As part of the workshop, participants chose a media presentation

to view and map. This active participation served as a stimulus for faculty and added realism to the workshop.

Before the third workshop, the task force agreed that to enhance the use of cognitive mapping and to help faculty realize the need for such a vehicle in the teaching process, a longitudinal research study with students was necessary to provide baseline data. It was the consensus that all students be included, with a portion of the study focused on the non-traditional student.

The purposes of the research study are as follows: (1) to identify if there are differences in the cognitive maps of transfer and non-transfer students; (2) to determine if there is a difference between those nursing students who successfully complete each level of the curriculum and those who do not; and (3) to identify if there is a pattern of cognitive mapping compatible with successful completion of the school of nursing curriculum. The data obtained from the study will help in making sound judgments regarding the use of cognitive mapping. The study does not supply information strictly for the accomplishments of the SREB project per se; it provides a mechanism for curriculum evaluation by determining how, when, or if students' learning styles change.

To answer the study questions for the research project, the questionnaire for the development of a cognitive map of learning styles will be administered to students as they begin and complete their first clinical nursing sequence during Level II (sophomore year), again when they complete Level III (junior year) and, finally, when they complete Level IV (senior year). Data will then be analyzed to answer the study questions. An additional bonus in this

type study is that students' maps will be available for interested teachers' use. Students are aware that teachers may see their maps and discuss them at prearranged sessions. Human use protocol has been written, and the Institutional Review Board of the University has granted permission for the study to be conducted.

The third campus workshop was recently conducted by Dr. Bass. The objectives of the workshop were as follows: Given a teaching style map, the map of a piece of instruction, and three student cognitive style maps, the workshop participants will predict (1) the potential success of each of the students in interaction with the teacher; (2) the potential success of each of the students' interactions with the piece of instruction; and (3) the augmentation procedure for each of the students. Emphasis was placed on each faculty member manipulating content to determine the interface of the students' learning style and the teachers' teaching style.

It may be worthwhile to note that all required information for the three workshops for awarding continuing education credit was submitted to the Alabama State Nurses' Association. The awarding of continuing education credit gave faculty a feeling of reward for the additional work required for the campus workshops.

The task force does not envision that every faculty member will adopt cognitive mapping; however, it is anticipated that sufficient interest has been generated to provide for diffusion of enthusiasm about cognitive mapping throughout the faculty over a period of time.

LEARNING STYLES

Much emphasis is placed on the role that cognition plays in the teaching and learning process and manipulation of the same for greater dividends in education. How does an individual come to know, i.e., learn? How does a teacher teach? Is what is learned a function of innate ability, environmental factors, the nature of the subject matter, or interactions between student and teacher? What are the intervening processes between not knowing and knowing? The concept of cognitive style sheds some light on understanding learning. Examination of the term will help establish a framework for understanding the concept within this paper. The word "cognitive" is a derivative of the term cognition, defined by Webster as the act of or process of knowing.

Style is a term used some four decades ago by Allport (1937) to describe consistencies and patterns demonstrated by individuals in their daily activities. Another view of the term "style" is that it is the characteristic approach to a variety of situations.

The literature (Coop & Sigel, 1971; Dressel, 1976; Witkin, 1974) generally refers to cognitive style as the stable, consistent, yet distinctive preferential manner in which individuals approach learning, organizing and processing information, and problem solving. Various uses of cognitive style show that the concept grew out of the fields of psychology and education. Its value lies in the understanding of human behavior and personality, the issues of intelligence, ability, performance, academic aptitude, prediction of success in various disciplines, the selection and placement of students, and utilization of various teaching strategies.

Various dimensions of cognitive style have been identified in the literature. Field independence-dependence as developed by Witkin et al (1962)

is one dimension of cognitive style frequently encountered in the literature. Field dependence as a concept exists on a continuum. Field independence is the ability to select relevant stimuli from the larger context and experience items as separate from the surrounding fields. In the field dependent dimension, the person's perception is strongly dominated by the field -- items cannot be separated from the field, and there is fusion of the content of the field.

The second dimension, that of leveling and sharpening as developed by Gardner (1959), contrasts simplicity of the cognitive field with complexity and differentiation, such as similarities and differences.

A third dimension, studied by Kagan, Moss, and Sigel (1960, 1963), is that of descriptive-relational and categorical cognitive style based on grouping and sorting behaviors. Out of their work came the concepts of reflectivity and impulsivity.

The cognitive style dimensions of conceptual versus perceptual-motor dominance and strong versus weak automatization were offered by Broverman (1960).

The essential characteristics of cognitive styles are process-content, pervasiveness, stability, and neutrality (Witkin et. al., 1977, p.15). Cognitive styles are concerned with the process rather than the content or "what" aspect of cognitive activity. It is the how we perceive, think, solve problems, or interact with others. The pervasiveness of cognitive style is exemplified in the fact that it is a feature of personality and cognition and can be assessed by verbal and nonverbal (perceptual) methods.

The stability of cognitive style is demonstrated by the fact that one can predict with reasonable accuracy that a person's particular style will remain the same over a period of time, even years. The paradox of this is that styles are changeable and that an individual can switch from one style to another.

There is nothing good or bad about a certain style, for a style may be suited differently for different circumstances and no one map is better than another but points out assets and liabilities. This characteristic of cognitive style is known as neutrality.

Now that a frame of reference has been established, the focus of the remainder of this paper will be on the use of this concept in an educational setting.

UTILIZATION OF COGNITIVE STYLE MAPPING

The framework of cognitive style mapping, as developed by Nunney and Hill (1972) at Oakland Community College, was used in this project. The assumptions underlying this concept are: (1) man is a social creature with a capacity for deriving meaning out of his environment and personal experience; (2) man uses symbols in his search for meaning; and (3) these symbols acquire meaning through man's cultural experience.

An individual's map is determined from the individual's responses to a series of questions designed for this purpose. A cognitive style map is divided into four categories, namely theoretical symbols, qualitative symbols, cultural determinants, and modalities of inference.[1]

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[1] Meaning will be found on pages 82-83.

After participating in the second campus workshop, one of the nurse educators, Delois Skipwith, chose to use cognitive style mapping with a selected group of students during the summer quarter, 1978. The purposes of this endeavor were twofold: (1) to implement some of the information and skills gained from participation in the faculty development workshop, and (2) to gain additional information about students in this mental health target population which would enable the mental health faculty to improve teaching and learning strategies.

Fourteen students enrolled in Professional Nursing Concentration - Mental Health Nursing, a senior level nursing course designed to provide students with additional theoretical and clinical experiences in a selected area, were invited to participate. All of the students had completed one course in psychiatric nursing and were enrolled in this course on the basis of self selection and/or placement at the senior level. The seminars are held weekly. Each student is responsible for selecting a topic, getting faculty approval of the topic, and presenting the topic at a seminar meeting. The focus of the seminar is on nursing interventions and research in a specific area of mental health. The faculty member serves as a resource person and facilitator during the seminar. All students in the seminar are expected to participate. Pre-determined objectives and overall seminar guidelines are used by the faculty and students in evaluating the experience.

Each student was given a copy of the cognitive style map to complete. The returned answer sheets were sent to the consultant, Dr. Ronald Bass, for determination of the map. Twelve of the fourteen students returned the completed maps. The group consisted of two white males, nine white females

and one black female. The group included one transfer student from a junior college, one who had attended two senior colleges in addition to a junior college prior to enrollment in our nursing program, and two registered nurses. Although this project site had identified the non-traditional student as the transferee from a junior college, review of some of the characteristics of this group revealed a heterogeneous group of various sorts of "non-traditional" student, i.e., age, sex, race, prior education, and generic or registered nurse students.

Teaching strategies utilized in the seminar included: group discussions; "modified" lecture; use of films, videotapes and audiotapes; guest speakers; and review of various sources of literature. Among the topics discussed were: "The Abusive Parent and Child Abuse," "Loneliness and the Elderly," "Spouse Abuse," and "Adjustment Reactions of Adolescents."

The results of the cognitive style mapping for the 12 participants indicate that this particular group of students demonstrated a preference for group discussion, lecture format of teaching, working with numbers, and reading the written word. The teaching strategies employed were correlated with the first and last preference of these students. However, opportunities to learn from working with numbers was minimal, except for discussing the results of various research studies. This finding does raise the question as to what can be done to maximize this quality. Can and should greater use be made of statistical findings of research in mental health and the issue of vital statistics and epidemiology?

The use of the sensory modalities in learning by this group of students is particularly encouraging in view of the emphasis placed on verbal and non-

verbal behavior in this clinical entity. The Q(S) (meaning through sense of taste) is interesting inasmuch as eleven students showed this quality. There are few opportunities to approach learning of materials through the sense of taste in this clinical entity or other areas of nursing. Perhaps this quality can be capitalized on in helping students develop a more empathetic attitude with clients in regards to nutrition and the use of certain medications.

The qualitative symbol of Q(P) was listed on the maps of eleven students. This symbol is identified as the ability to combine two or more senses. This quality should be given continued support especially for enhancing assessment or collection of data skills.

As the qualitative symbols associated with cultural code were reviewed, a sense of pride, joy and accomplishment were experienced, not so much a feeling that nurse educators did anything to influence it, as a sense of pleasure that the students have it, regardless of origin. The issues of empathy, esthetics, ethics, body language, motor skills, self understanding, and transactions are all important to nursing, especially mental health nursing.

The mapping on cultural determinants show some spread among all three determinants namely: associates, family-authority, and individuality. This spread may be indicative of the relative high influence of each of these factors on these young adults at this period in their development.

The group is primarily "L" or "L with strong R" in the area of modalities of inference. A look at the individual student's cognitive maps

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Note: The guide sheet will clarify the meaning of the symbol used.

showed some variation but the significance of this cannot be relied upon for obvious reasons, such as group size, membership, and methodology in general. The one black female student in the group differed in the area of cultural determinants by mapping as an "I" "F" and in modalities of inference as "R". The male students in the group also showed some variability. One of the males scored a low T(AQ) indicating a low preference for spoken numbers; cultural determinants were "I" and "F". The second male in the group had low scores on T(VQ), i.e., less preference for written numbers, and T(VL), i.e., understanding written words. The cultural determinant of major importance for him was "F". One of the registered nurse students in the group differed from the group in the area of modalities of inference, by scoring an "M" "D" indicative of a preference for categorical reasoning and reasoning based on contrasts and comparison.

A few statements about cognitive style and culture are needed at this point. Is there a relationship between cognitive style and culture? The answer is a risky one but identification of some of the issues might aid in formulating an answer. The issues of socialization, acculturation, ethic group membership, socioeconomic status, geographic location, and family structure must be considered. Caution must be exercised in generalizing about individuals from data on groups that are not homogeneous. There is much group variability and overlap. The group is primarily "L" or "L with strong R" in the area of modalities of inference. This same finding was seen in the faculty group when individual learning maps were determined.

TEACHING STYLES

Learning is only one part of the teaching and learning process. One definition of teaching styles as discussed by Murphy and Brown (1970:529) is that it is the characteristic way of handling information and applying sanctions. An individual's teaching style is influenced by his conceptual system and, therefore, teachers with different conceptual systems would utilize different teaching styles. These differences are not measures of teaching competence.

The student and the teacher come to the interaction with differences and commonalities that must be reconciled if the educational benefits are to be at a maximum. Teachers must be sensitized to the impact of their cognitive and teaching style upon the teaching-learning process. "That's a result of being at this school" was a comment made by a student upon hearing about the mapping results in the area of modalities of inference. Perhaps the student was right on target with the explanation or are there some other explanations for this findings?

Work by Coop and Sigel (1971) suggest that younger children are probably more influenced by strong preference in style whereas college students have learned to adjust their styles to changing tasks. It is further hypothesized that college students become more flexible and adaptive in their cognitive operations in order to succeed in college. The students have discovered that they must accommodate their thought processes to different instructors' preferences and diverse teaching methodologies, i.e., they must learn to "read" the instructor if they are to succeed. They may have learned that it is more efficient to yield than to struggle (rather switch than fight) and therefore yield their particular cognitive style preference to the in-

structional environment rather than attempting to assimilate the different classroom variables into their own diverse style preference. It is important to keep this explanation in mind, inasmuch as the college student's cognitive style may not be as preferential as it is adaptive. It may be delusive to aim for broadening a student's cognitive style preference for the student who has already learned an adaptive skill.

The similarity between students and faculty in the area of modalities of inference brings us to the issue of matching students and faculty. The results of the study by DiStefano (1970) indicated that teachers and students of similar cognitive styles describe each other more positively than mismatched teachers and students. The work of DiStefano (1970) and James (1973) demonstrated that greater interpersonal attraction occurred with teachers and students of matched cognitive style. The interpersonal interaction and the positive evaluation occuring with matched teachers and students may facilitate the teaching-learning process wherein the teacher does better (instructionally) with students of similar cognitive style, and students, in turn, learn more from teachers with cognitive styles similar to their own.

The work of Witkins and others (1977) leads to a precaution about match-mismatch effect and that is consideration of the issue of sex. In that particular study with adolescents, there was a positive response for the teacher of the same sex and the sex match-mismatch effect. Other factors affecting the phenomenon of interpersonal attractions between matched persons are shared interests, shared personality characteristics, and similarity in modes of communication.

Other questions to raise about matching for cognitive style are:

1. Does matching for cognitive style make for better learning?

2. Does the interpersonal attraction between the teacher and student create a climate more conducive to learning?

3. Is homogeneity or heterogeneity more conducive to learning?

4. Are the gains from matching worth the sacrifice made in diversity of opinions and viewpoints?

5. Can the practical problems of arrangement be overcome? Is the outcome worth the investment?

6. How does match or mismatch in cognitive style work to produce the observed effects?

7. What situational variables, such as sex, curriculum design, or sequencing, play a part in this phenomenon and what is that role or part?

8. Does matching jeopardize the student by protecting him from the realities of learning how to deal with a diverse, heterogeneous world community?

9. Is there enough known about cognitive style mapping that educational decisions with far-reaching implications can be made with confidence and a reasonable degree of soundness?

10. Should a student be excluded or exempted from learning information which is inconsistent with cognitive style preference?

11. Should the educational process consist of the easiest route?

12. Is matching ethical?

IMPLICATIONS AND RECOMMENDATIONS

1. Continue the seminars as a teaching strategy for mental health content. Among the modifications made in the seminar class were the provision of a list of possible topics and guidelines for discussing research and the inclusion of peer, self, and teacher participation in the evaluative process.

2. Increase teacher and student sensitivity, awareness, and utilization of the concept by facilitating sharing of information on their respective styles. The teacher might share with the group at the beginning of the quarter what her approach or teaching style is.

3. Discover the "personality" of the group and adapt teaching strategies to facilitate learning. An observational checklist could be helpful.

4. Stimulate research in the use of cognitive style mapping in nursing education and in nursing service. Do efforts in teaching clients fail because minimal consideration is given to the learning styles of the client?

5. Sensitize teachers to the implications of their teaching styles for the teaching learning process, including evaluation.

6. Conduct faculty development programs to enable teachers to diversify their teaching approaches.

7. Permit students to be selective of activities and materials which fit their style.

8. Structure and require certain learning activities which are valuable and support the "struggling" student in the processing of the materials.

9. Provide a multiplicity of instructional strategies for each learning objective.

10. Remember that cognitive style mapping is not the panacea or cure for all of our ills in nursing education!

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A BRIEF GUIDE TO COGNITIVE STYLE MAPPING

Symbols and Their Meanings

Two types of symbols, theoretical (e.g., words and numbers) and qualitative (e.g., code data) are basic to the acquisition of knowledge and meaning. Theoretical symbols differ from qualitative symbols in that the theoretical symbols present to the awareness of the individual something different from that which the symbols are. Words and numbers are examples of theoretical symbols. Qualitative symbols are those symbols which present and then represent to the awareness of the individual that which the symbol is. (Feelings, commitments and values are some examples of the meanings conveyed by the qualitative symbols.)

FOUR THEORETICAL SYMBOLS:

1. T(AL) - Theoretical Auditory Linguistic - the sound of a word.
2. T(AQ) - Theoretical Auditory Quantitive - the sound of a number.
3. T(VL) - Theoretical Visual Linguistic - the written word.
4. T(VQ) - Theoretical Visual Quantitative - a written number.

The meaning of qualitative symbols is derived from three sources: Sensory stimuli, cultural codes (games), and programmatic effects of objects. There are 15 qualitative symbols. Five of them are associated with sensory stimuli:

1. Q(A) - auditory - the ability to perceive meaning through the sense of hearing;
2. Q(O) - olfactory - the ability to perceive meaning through the sense of smell;

3. Q(S) - savory - the ability to perceive meaning by the sense of taste;
4. Q(T) - tactile - the ability to perceive meaning by the sense of touch;
5. Q(V) - visual - the ability to perceive meaning by the sense of sight;
6. Q(P) - proprioceptive - sometimes referred to as the sixth sense - vehicle for conveying meanings associated with "programmatic effects";
7. Q(CEM) - Code-empathetic - the ability to identify with, or have a vicarious experience of, another person's feelings, ideas or volitions;
8. Q(CES) - code-esthetic - the ability of the individual under consideration to view with enjoyment the "beauty" and "pureness" of a resulting product, situation or idea;
9. Q(CET) - code-ethic - a commitment to a set of values, a group of moral principles, obligations, and/or duties;
10. Q(CH) - code-histrionic - staged behavior, or a deliberate exhibition of emotion or temperament to produce some particular effect on other persons;
11. Q(CK) - code-kinesics - the ability to communicate by means of non-linguistic functions such as blushing and motions of the body, such as shrugs, smiles and gestures;
12. Q(CKH) - code-kinesthetics - motor skill abilities;
13. Q(CP) - code-proxemics - the ability of an individual to judge the acceptable "critical" physical and social distance between himself and others as perceived by the other person;
14. Q(CS) - code-synnoetics - personal knowledge of oneself in all qualitative and theoretical symbolic forms in relation to one's environment.
15. Q(CT) - code-transactional - the ability to maintain a positive communicative interaction which significantly influences the goals of the persons involved in that interaction.

CULTURAL DETERMINANTS

The meanings that man assigns to symbols shape and are shaped by his culture. The main cultural influences, or "cultural determinants" of the meanings of symbols, are family, associates and individuals.

F - Family I - Individual A - Associates

MODALITIES OF INFERENCE

The forms of inference the individual uses in the process of deriving meaning:

M - Magnitude inference process is a form of "categorical thinking," and utilizes norms categorically classified, and attitudes accepted as true by the individual as the basis for acceptance or rejection of advanced hypotheses.

D - Difference deals with hypotheses of difference, such as one-to-one contrasts or comparisons of selected characteristics or measurements.

R - Relationship process considers a relationship between two or more characteristics of measurements.

L - Appraisal type of inference considers, with equal weight, hypotheses of all the previous three (magnitude, difference and relationship) in arriving at a probable conclusion.

Management of Teaching Strategies

Kathleen J. Mikan

INTRODUCTION

Being an educator in an institution of higher education today is different than it was ten years or so ago. Social pressures for accountability and cost containment, coupled with the ever-growing increase in knowledge, a more culturally diverse student body, and decreased federal funding demand that we carefully examine all aspects of our higher educational system for appropriateness, effectiveness and efficiency -- including our day-to-day teaching strategies.

As nurse educators in institutions of higher education, we must learn not only to cope with the challenges facing higher education in general, but we must be prepared also to handle the additional social pressures specifically related to the preparation of a health care professional. Society is still in need of health care workers and, consequently, individuals are continuing to pursue careers in the health sciences. Unlike so many other departments on campus, enrollments in schools of nursing have not declined. In fact, because other departments within the university are experiencing declines in enrollment and nursing is not, many schools of nursing are under pressure from their college or university administrators to increase enrollments to off-set the declining enrollments in other departments.

This means that nursing faculty are being asked to teach more and more students and to increase their student loads both in the classroom and in the clinical areas. Frequently, nurse educators are asked to do this without any advice or assistance as to how to do it. Giving advice to other people about their teaching strategies has not been a common practice or an accepted norm in higher education.

Historically, the virtues of autonomy, academic freedom, and privacy have dominated the development of the profession of teaching. These traditional attributes of the teaching profession reinforce the idea that teachers are to be self-sufficient and self-reliant in handling their classrooms or clinical tasks and responsibilities. What the teachers do in their classrooms or clinical areas is considered their business and is not usually open to discussion, challenge, or criticism.

The practice of sharing problems and/or successful teaching strategies among faculty colleagues is essentially non-existent. Except for, perhaps, student teaching experiences, most teachers are expected to face their teaching problems alone. In fact, if a student teacher admits experiencing problems, that person in often viewed negatively, i.e., a sign of being inadequate or a poor teacher. This type of conditioning in teacher training programs results in teachers being fearful of exposing their inadequacies and hesitant to ask colleagues for help. Teacher training of this kind stifles mutual sharing of problems, and solutions, and cooperative inquiry among colleagues regarding teaching activities. Thus, most teachers are left alone to sink or swim, haze or be hazed, in their day-to-day teaching encounters.

The teaching methodologies used in higher education, and in nursing education, have remained basically the same over the years. The rapid growth and development of educational technology in our society has had little impact on the manner in which teachers teach. Even though teachers have access to technology, they still primarily use the lecture-textbook method of instruction. It is easier to lecture than it is to be an effective manager of instruction and skillfully involve students in their own learning. Thus, it is not surprising that teachers tend to teach the way they were taught and their students do the same.

Educators realize that there is no one correct way to teach. All persons involved in teaching are confronted with instructional problems on a daily basis. They manage to handle these problems in one way or another, but often do so without a clear understanding of the appropriateness, efficiency, and effectiveness of their actions. Nurse educators in institutions of higher education experience similar problems and challenges as they go about their teaching activities. Thus it seems appropriate to exchange ideas about problems encountered and the teaching strategies that have been successful.

HAVE STRATEGY, WILL SHARE

The following strategy can be used effectively with large group instruction. The key to its success is that students are involved in their own learning. Why is involvement so important? Simply because learning requires involvement. Students do not learn because they hear the teacher say something, or see the teacher do something, rather, the students learn because they say something or they do something.

The specific technique utilized to get involvement combines the use of a variety of teaching materials and methods -- audiovisual material, printed discussion questions, small discussion groups and group reporters. The specific content is presented by way of a synchronized slide-tape which is programmed to stop at two points to allow time for the groups to discuss the questions listed on a handout. As the groups discuss the questions, the instructor circulates among the groups to facilitate and enhance the small group discussions.

Each group is asked to select a reporter. Before the class ends, all reporters are asked to come to the front of the room and share their group's responses with the total class. Each reporter is responsible for initially sharing the group's responses to a different question (i.e., first reporter question one, second reporter question two and so forth) until all questions have been covered. All of the other reporters are encouraged to add their group's comments following the initial reporter's responses. In this way student involvement continues, and a variety of viewpoints and opinions can be shared with the total group in a short period of time. Important points that have been omitted or overlooked can be covered during the reporting session by the instructor, who serves as the moderator during the reports. The instructor can also use this time to encourage and provide opportunity for additional comments from the audience.

The technique described here can be effective with large groups. It need not be a long drawn-out affair. It is effective because the students are involved, they are active, and they give the teacher valuable feedback on how well they grasped the information presented. Based on this feedback the

instructor can supplement, elaborate, or correct any misunderstandings that may have occurred.

Three of the strategies discussed during the work session follow. These are presented because (1) the strategy had been used successfully and was described in sufficient detail that it could be reproduced, (2) the strategy described could be useful to a number of other nurse educators in a variety of settings and across subject and/or clinical lines, and (3) the strategy was based on sound principles of teaching and learning, i.e., student involvement in their own learning.

A strategy to involve students more in planning for their own clinical experiences.

Teaching Situation:

Beginning nursing students are not prepared adequately for their clinical experiences and are anxious.

Strategy:

Students are instructed to write their own clinical objectives that are congruent with the overall unit objectives. The students are expected to generate their clinical objectives based on the information they gain from their readings. These objectives are discussed with the student prior to their taking care of patients. During the discussion, the students are given assistance in relating their objectives to their indivudual client/patients.

Degree of Success:

The beginning nursing students are less anxious about their clinical experience because they have been involved in identifying what they are expected to learn in the clinical area.

The students come to the clinical situation better prepared and are able to relate the information in their reading to their individual patients.

A strategy to meet specific needs of the registered nurse student.

Teaching Situation:

The beginning clinical nursing course is not meeting the needs of registered nurse students. The curriculum committee agreed to allow the RN students to take a new and different nursing course and to allow the RN's to take it within a one-month mini-semester session.

Strategy:

Mini-semester workshop for RN students.

Faculty utilized ideas from former and present RN students to design five one-week workshops on selected nursing topics.

Of the five available workshops, the students can select four they want to attend. The students are rotated through the workshops in small groups. Faculty members teach in pairs and conduct the same workshop for four consecutive weeks. Multiple teaching methods, discussion, role playing, audio visual media and speakers are used.

Degree of Success:

The RN students recognize that learning through small group interaction is valuable and that they can assimilate much information and many ideas by this method. In the small groups, the students learn from each other as well as from faculty. Students report they get to know faculty better. The student like the mini-semester because it is a change of pace from the regular semester courses.

The faculty find that the preparation for a one 12-hour workshop (two 6-hour days) is manageable and a welcomed change of pace from other types of school activities.

A teaching strategy to help beginning nursing students improve note-taking during lectures.

Teaching Situation:

Beginning nursing students have difficulty taking organized, pertinent notes during lectures at the college level. The class is taught by two instructors.

Teaching Strategy:

Team teaching with one instructor presenting the information as the other instructor "takes notes" on the blackboard.

Degree of Success:

The students find the technique very helpful in helping them identify important content. It improves their performance on examinations. Having another person take notes on the blackboard saves time for the faculty member who is lecturing. Thus, the lecturer is able to cover more material within the available class time.

The use of this technique routinely or over long periods should be discouraged as the technique tends to increase student dependence on the instructor which results in much discomfort and anxiety when the second instructor is not available or is not performing the note-taking role.

Other successful teaching strategies reported by the conference participants related to the use of commercially or locally produced learning materials; the establishment and development of autotutorial laboratories; the use of learning modules and learning stations (learning areas that are set up to accomodate small groups of students who rotate through and perform the skills stated on cards).

Role playing, both formal and informal, was frequently mentioned as an effective teaching strategy. The formal role-playing strategies involve the preparation of written materials ahead of time. The materials describe the roles to be played as well as information about how the role playing is to be conducted. The informal role playing teaching strategy requires little or no preparation by either the instructor or student and is most frequently employed by asking students to role play actual situations they have encountered.

Variations in the use of learning objectives are being tried in several schools. One person reported the use of clinical objectives that are progressive in nature and correlate with the letter grades of "A," "B," and "C." All students are required to perform all the behaviors at the "C"

level to pass the course. To receive an "A" a student must demonstrate proficiency of the behaviors at levels "A," "B," and "C." Students are responsible for identifying which of their own behaviors met the course objectives. The students use anecdotal notes or faculty observations to document their performance of the objectives. The objectives are weighed and a final score at the end of the semester is based on those objectives for which student behaviors have been documented or observed.

The use of a "test" as a teaching device was reported to be an effective teaching strategy by one participant. In this case, the test is given at the beginning of the class over the content to be presented during the class. The instructor then uses the "test" for organizing and presenting the class lecture. Used in this manner, the test serves as a mechanism for stimulating class discussion, for maintaining student interest, and for providing student feedback.

Neither time nor space permits the description of all the successful teaching strategies presented in the small groups. However, the cases described above may provide some ideas for new teaching strategies that can be used or adapted.

The author wishes to express appreciation to Patricia Crumpler of Western Piedmont Community College, Kathy Henderson of the University of Maryland, and Ann Richards of Texas Christian University for sharing the teaching strategies described in this article.

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CULTURAL AWARENESS

Norma Rawlings and Ann Morgan

From the newspaper hastily read at breakfast to the television comedy viewed in the evening, we are confronted with evidence that we live in a pluralistic society. Many culturally distinct groups can be identified, each with learned and shared value systems and patterns of behaviors, language, and thought. Safe and effective nursing care for individuals in this culturally diverse society must begin with the architects of the educational plan, the faculty, and behavior within the context of a culturally diverse society. We believe that the nurse educator interfaces with this society as an individual who is a product of a culture and a component of a system.

The nurse is a product of a culture. Experience has taught most teachers to be cautious in expressing criticism of other cultures. In fact, the enlightened teachers are quite liberal in stated beliefs, and may supress the awareness that they are individuals who live within the beliefs and behaviors of their culture. The values of the dominant mainstream culture, such as success, respectability, good manners, and cleanliness, are readily absorbed by the teacher who, in subscribing to them, may repress differences found in self. Landes (1976) in reconstructing the family culture of teachers found great variability in their origins, despite their expressed professional oneness and middle class appearance. She states that within each teacher

there are hidden points of reference which interact with those of other ancestries. We believe that in a program of faculty development there must be experiences which make nurse educators aware of these points of reference and the culturally sensitive aspects in their own lives. Landes states "one cannot validate on any deep level that which one does not wish to perceive in thyself."

Cultural groups vary significantly in the definition of health and patterns of help seeking, preferred healers and therapies, content that is valued, preferred communication channels and language, sanctioned teacher and learner behavior, methods of discipline, and self-concepts which are reinforced. We believe that a comprehensive program for faculty development must give educators and students an opportunity to explore in depth these areas which have potential for creative growth or conflict in the educational setting.

Ethnocentrism, the tendency to judge other groups by the standards and practices of one's own culture, leads one to believe that one's own pattern is correct, and that others represent deviation from the norm. Cross-cultural errors in observation and interpretation can be anticipated, and sensitivity regarding them can be acquired. Spindler (1974) presented a sensitization technique used with the Stanford undergraduate students at one of the university's overseas centers. Spindler showed ten 35mm color slides, and asked students to record their responses to these slides. Using simple inductive content analysis, he identified several common problems in cross-cultural perception. He found misinterpretation (1) when there was no counterpart in the culture of the viewer, (2) when the situation viewed was ambiguous, (3) when the viewer stereotyped the situation within his own

culture, (4) when the viewer held stereotypes of another culture, (5) when motivations and feelings were projected on the situation, and (6) when there was a limited sampling of behavior. We believe that by exploring these areas for potential misinterpretation within a school, faculty may increase the ability to correctly perceive student behavior cross-culturally.

The teacher is a component in an educational system that represents the values of the dominant culture. The faculty member is in a position to symbolize community standards which may or may not reflect the needs of all members of that community. We believe that the teacher must become sensitive to the incongruity between certain institutional standards and the needs of individual students.

To many students the educational setting provides evidence of an encompassing culture in an experience which can be intensely depersonalizing. The spatial and temporal dimensions of the school culture which have been absorbed by the teacher may be alienating to the student. We believe that a program of faculty development must provide opportunity for students and faculty to identify those aspects of the school culture which support or conflict with the students' expression of authenticity and autonomy.

To provide a program for faculty development which would be responsive to the needs and successful in affecting change, members of the task force at the University of Maryland School of Nursing developed the following four goals, and devised methods of meeting these goals. The task force proposed to:

1. Identify presently existing teaching-learning barriers in order to diagnose learning problems experienced by students.

2. Create an environment whereby faculty can become more aware or their values and attitudes toward culturally diverse students, i.e., individuals who speak English as a second language, are socialized in a rural environment, black, male, or over thirty-five years of age.

3. Make available a variety of approaches/strategies that will assist faculty in their adaptation to cultural differences among students.

4. Identify cultural and ethnic influences that may have impact on learning.

In an attempt to facilitate achievement of our goals, four videotaped vignettes were developed to increase faculty's ability to identify positive and negative cultural and ethnic behaviors that may affect learning; identify teaching-learning strategies which may inhibit or enhance learning; discuss interpretation of behaviors exhibited by culturally diverse students.

All videotapes, with the exception of one, were developed utilizing culturally diverse students' descriptions of previously experienced interactions with selected faculty. The one exception is an unrehearsed interview with a graduate nursing student from India. Each videotape was presented and analyzed by conference participants. Some of the comments and observations of the participants follow.

Videotape I: Rehka, a graduate nursing student from India, describes her experiences.

Comments/Observations:

Native dress.

Adjustment to a different environment (weather, time, city).

Grief for native land.

Guilt feeling in seeking help from others.

Language barriers -- repetition to be understood and difficulty with pronunciations; "friends making fun of me helped improve communications with others."

Role of women -- culturally different. "Woman is creative person who gives birth to man who makes the decisions."

Male-Female problems -- could not go to male academic advisor for assistance due to cultural differences with role expectations.

Videotape II: Larry, a male student assigned to OB, encounters discrimination.

Comments/Observations:

Overlooked as a nurse and male student.

Men's rest room excluded in orientation.

Asked to leave the room for female perineal prep.

What is the difference between a doctor and a male nurse being in the labor room for prep?

Is it the male nurse's role vs the female nurse's role to lift a patient from the stretcher?

Socialization of the male student nurse -- limitations of nurse faculty expectations.

Identity crisis -- male vs nurse.

Videotape III: Joanne, a black student, has a conference with a white instructor regarding an assignment.

Comments/Observations:

Several degrading expectations from teacher "Did student write the paper herself?"

"Teacher going to check resources particularly to make sure direct quotes are quoted."

Don't often see a paper that good (from black students).

"Do you know Elizabeth Davis?" -- assume all black people know each other and are alike.

Articulate black person -- assume it is unusual for a black person to be articulate.

Double message at end -- "Doing a good job" and offers help to student after above comments.

Note student's response at end of "Yes M'am." -- signifcance of this in interaction?

Any changes in student's communication pattern from beginning of interaction to end of interaction?

Affect of interaction on student's self concept.

Videotape IV: Sally, an older student, meets with a younger instructor before making a home visit.

Comments/Observations:

Life experiences not utilized or taken into consideration at times.

Relate better to faculty as a peer than to fellow students -- caught in between the two groups.

Faculty -- especially if younger, apt to be threatened by the student.

Instructor ignoring or not willing to take into account the student's own experiences with children.

Teacher's focus is on theory and student's focus on experience.

Did teacher resent student wanting to know about teacher's child?

Is teacher facilitating student's learning?

Is there any practicality to student's response of "if it works, it works," as opposed to a theoretical response? How is theory derived?

Can student use her own experiences to help provide a theoretical framework for nursing intervention?

Is there a double threat situation between student and teacher?

Education can be instrumental in the understanding and tolerance of different systems of belief and values. As De Tornyay and Russell (1978) assert:

> The concept of a pluralistic society was scarcely thought of, least of all discussed, in spite of the fact that the United States is made up of many ethnic groups. Those few ethnic students of color who were in our programs were socialized into the culture of the majority -- the Anglo-American culture -- and expected to conform to majority values and norms. Only recently have new life and fresh approaches to the profession been developed, thanks to the incorporation of ethnicity into the nursing ranks and into the curricula of schools of nursing. Focusing on culturally diverse groups has markedly enriched nursing education, and affirmative action has helped make nursing a less homogeneous profession, more reflective of the diversity of American Life.

During the Special Interest Group session participants emphasized the negative behaviors evident in the videotapes and discussed strategies for change utilizing cultural awareness and understanding.

The group leaders introduced a values clarification exercise. Participants identified "Twenty Things I Love to Do," the cost of each activity, the person with whom I like to do the activity, and the last time each activity was done. The responses were shared to demonstrate conflict of values as well as integration of values. This was an attempt to facilitate the process of value clarification as it relates to cultural awareness. Cultural differences and cultural biases were shared by group members.

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Identifying Learning Obstacles

Gail Kettlewell

We know a great deal about culturally diverse students--who they are, what they aspire to, and what problems they have. We try our best to use learning strategies which bring success to our students. Yet, how often have we said at the end of a quarter or a semester, "If I had only tried harder, so-and-so might have passed." That "trying harder" is very nebulous. That "trying harder" can be translated into so many questions we have about how students learn and why they do not learn. It is just such questions that have provided the emphasis of the Faculty Development in Nursing Education Project at Tidewater Community College, Fredrick Campus. We are trying to identify the problems of culturally diverse students early and then work to eliminate or at least help the students overcome them.

Our efforts include a combination of counseling, and developmental studies. The science and technologies counselor keeps a statistical record of students who are failing in nursing, determines the problems, and works with the nursing faculty and reading consultant to remedy the situation. All applicants to the college take the Comparative Guidance and Placement Test. Students interested in nursing also take the Nelson-Denny Reading Test. They need to score on the eleventh grade level or equivalent on both tests. If either of these shows a deficiency, then the student is counseled into the

appropriate developmental courses which are developmental reading, science, and math. After students satisfactorily complete the developmental courses, they are admitted to nursing. The counselor works out a weekly schedule with each student trying to show them realistically what they can expect in terms of required hours for study, class, and other responsibilities. There is a continuous dialogue between the nursing faculty and the counselor. The students are aware of this and appreciate the added attention and dedication of the staff.

A second factor in improved status of culturally diverse students on our campus is in the area of reading. Nursing students may be requested to take developmental English/reading. Once they have completed these courses, they may enroll for advanced reading classes which will enable them to gain fluency, acquire further vocabulary growth, and improve their study skills. The two advanced reading courses are scheduled each quarter for the general student body In addition, a reading in science course was offered in the summer of 1978. Pre-nursing students who were reading below the tenth grade level received letters from the counselor suggesting that they enroll for this course. Ten of fifteen students enrolled and studied reading in science, vocabulary in science, and study skills while they were also taking developmental health science. It must be pointed out here that not all students scored eleventh grade level on the timed, standardized Nelson-Denny at the end of the quarter, but they were completing eleventh grade reading course work in science with 85 percent comprehension as minimum acceptable score.

It is important to understand that skills and mastery effectively used on a timed test will not come simultaneously. Once the skill is learned, it

takes time to reach fluency, especially with a culturally diverse student. It might also be noted here that test-taking skills should and can be taught during such a course.

Another service provided by the developmental studies English staff is a study of the current nursing textbooks. Seventeen texts have been examined for readability level and study helps. The result of this is a chart showing these factors. From this study the fundamentals of nursing course text has been changed (from Fuerst to DuGas). The nursing faculty sees this success as changing hopes for success of students, who have often expected failure.

Faculty members have learned the SQ3R study technique procedure so that they can use it with each textbook to show their students how to get the most of the textbook. They have all learned to do their own readabilities on textbooks so that, as new books come in for adoption, they can examine content and suitability for reading and study. Another quick check on suitability for texts can be done in the classroom during the first week of classes. It will show whether the text is on a student's instructional or independent reading level, and will indicate success with the text. This instrument is called a Cloze Procedure Test., These three items will be explained in detail later.

The impact and implication of our efforts have been great. According to statistics kept by the counsleor, the percentage of developmental students remaining and completing the program has completely reversed, for the good. Of 59 students who started the program in September only three are in real difficulty compared to half of the class in previous years. We have observed

that all members of the class are attending tutorials. Our students scored second in the state of Virginia on the licensing examination this year!

TYPES OF LEARNING

The two types of learning we are concerned with in our program are in the cognitive and affective domains. The cognitive area will be described first because we think of teaching in terms of learning the material and successfully passing the tests and courses.

Cognitive

Bloom's hierarchy in ascending order is:

Evaluation/Synthesis
Application/Analysis
Comprehension
Knowledge

The knowledge level comes first. Question: In what year did Columbus discover America? Knowledge: 1492. This is the kind of question asked on a short answer, objective test. This level is essential before the student can progress to the other levels beyond this. If students cannot achieve at this level, their comprehension skills are elementary. They cannot analyze, apply, evaluate, or synthesize the information on the page.

Three levels of comprehension, in descending order, are:

Literal	what the author said
Interpretative	what the author meant by what he said
Applied	knowledge of the content in relation to experience resulting in new ideas

The student who has not learned to go beyond the knowledge or literal level must be taught to do so. How can Mary Lou do her clinical training at

the applied or evaluation/synthesis level if she only understands what the author said?

Some of the specific cognitive skills a student must possess to be successful in the science reading materials used this summer for the pre-nursing students are:

> Find Statement and Support Patterns. Directions: Refer to the paragraphs of the selection as indicated below. Find the statement (main idea) and supporting information (details) and write them in the spaces provided. Keep in mind that you are likely to find information that does not support the statement.

Must your students be able to determine main ideas and details? Do you assume that they have mastered this skill?

> Practice Noting Sequences. Directions: Read the paragraph below. Then list the steps in the process of the development of the frog. Tell what takes place at each step.

Is sequence important in the care of the patient in the recovery room?

> Recognize Cause and Effect. Directions: Read the statements below to find cause and effect relationships. Then list the causes and their effects in the spaces provided.

Cause: Effects:

Must a student know how to determine the difference between cause and effect of a neurological problem?

> Read and Experiment. Directions: Read the following experiment. Then set up the experiment in the space below.
>
> Object: Apparatus:
> Procedure: Observations:
> Conclusions:

Is this more than reading at the knowledge level?

> Make Charts. Directions: Read the paragraphs below about gems. Then make a chart of the information given.
>
> Gem Where Found How Formed

Classify. Directions: Classify the information in the following paragraph under the three headings given below.

Areas of Scientific Information	Studies	Name of Course Related to Area

Summarize. Directions: Reread the section headed some diseases are caused by germs. As you read, TAKE NOTES on the most important facts or ideas, and write them in the space provided. Then, rewrite the notes into a summary paragraph.

Notes	Summary

Make Comparison. Directions: Read the following paragraphs about steam engines. Then make comparisons in the spaces provided. Compare the two types of boilers.

Differences	Similarities

This is by no means an exhaustive list of reading skills a college student should have mastered to begin the nursing program. It is, however, representative of the complexity of reading and thinking/organization/structure which students must be able to handle for success. And this is only in the realm of comprehension. Just as important are vocabulary and study skills. A student must be able to unlock words or see familiar forms in new words. Textbooks which list important prefixes, roots, and suffixes from Latin and Greek aid students who already have language barriers.

Common study skills for college students include the ability to use the textbook efficiently, take notes, write summaries, use the dictionary, and know how to take tests. Students who have never needed these skills need your help. They use the dictionary faithfully to look up the meaning of a word. How much more must they know before they understand what hemoglobin is?

Most culturally diverse students on our campus go through at least one developmental English course before they begin the nursing program. BUT,

If there is no carry-over from the developmental class to the nursing class, the students still have difficulty. One problem instructors face is that they already know and use these skills. They seldom analyze what skills are inherent in the assignment and do not point out possible blocks to learning before the student reaches them. Another problem is that a student who has learned about these skills and techniques cannot have mastered them in ten or twelve weeks. The student is now AWARE of the larger realm of comprehension and has some experience. Continued awareness from the science or nursing instructor can help a student to grow.

Affective

Cognitive skills were discussed first because learning the material has been our prime interest. However, students can only learn the skills and the course material if they have the attitude and motivation to do so. Therefore, it is important that we consider the affective domain. Krathwohl's taxonomy is useful in discussing the affective domain. This taxonomy, in ascending order, follows:

Commitment
Valuing
Receiving
Attending

A very homey definition of these is: A student who attends comes to class for fifty minutes. A student who receives, listens to the lecture but make no responses. A student who values, responds to what was received and make judgments about it. A student who is committed decides to participate in class, make a 90 on the test, come to class on time, and read the assignments daily.

We know, of course, that without commitment little learning can take place, at the knowledge or any other level. Considering the characteristics we have determined as fitting culturally diverse students, our first task is at the personhood level. A student who has problems of motivation, goal-orientation, failure, or acceptance must be considered in terms of commitment to the program before we tackle intellectual growth. In fact, one of the greatest learning obstacles students have is attitude of faculty toward them. What affective behaviors do we expect of ourselves in aiding the student's growth, change, and independence as a learner and as a nurse?

In a list of skills needed by faculty for working with "high-risk" or "new" students are two human relations skills. Faculty must understand that the student KNOWS how he is being treated. The instructor must also understand how he is treating the student. Before writing affective behaviors for students educators ought to write them for themselves.

How do we identify a student's affective obstacles to learning? First, counseling will pick up some idea of a student's self-concept in interviews before the program begins. Some schools administer a self-concept test by using the Rotter Self-Concept Scale or the Nowicki-Strickland Internal-External Test. How the student sees himself and his attitudes toward school and learning can help us in advisement and instruction. Another type of indicator of student attitude can be self-made. This is in the form of an incomplete sentence test. Such a measure is easy to construct and administer. It quickly gives the instructor a look at the student's hidden agenda (the emotional, attitudinal baggage he carries with him everyday) which may have nothing to do with what you want him to learn that day. It may, however,

have everything to do with whether he passes or fails. A sample of the Incomplete Sentence Test follows:

1. My favorite subject in college is
2. I sometimes am afraid of
3. I never want to
4. Most of my instructors are
5. Going to college is
6. I hope that I can
7. I think that my life is
8. I like it when my husband/father
9. My favorite person is
10. I get kind of depressed when
11. Doing homework is
12. I think that my brother/sister is
13. Most of all I would like to
14. My home is usually
15. I get angry when
16. I am unhappy when
17. I hope that my future is
18. Grandparents are
19. My family thinks that I
20. I wonder if
21. My family/spouse feels that my grades are
22. I like to read books about
23. I think that college is
24. I think reading the newspaper is
25. I hope that I will never have to
26. I sometimes get nervous when
27. The easiest thing about college is
28. I am happy when
29. I don't like it when my family/spouse
30. Studying in college is
31. I like it when my wife/mother
32. I would really like to
33. When I get out of college, I hope to
34. I sometimes worry about
35. I think that reading science books is
36. If I could be anything in the world, I would want to be
37. I think the future will be
38. Reading social studies books is
39. My family thinks that reading is
40. Reading math word problems is
41. In an English course, I usually like to read about
42. This college is

Note: The test is a revision of a secondary level test by Wilma Miller.

IMPLICATIONS FOR NURSE EDUCATORS

Cognitive and affective materials discussed in the preceding paragraphs are as important for nurse educators to understand and use as they are for developmental faculty. The remainder of this presentation describes what nurse educators can do in their classes to help students as they continue to overcome learning obstacles.

The Fry Readability Scale

First, it is important to know how to determine the readability of a textbook. Using the Fry Readability Scale the following steps can be performed:

1. Randomly select three sample passages and count out exactly 100 words beginning with the first word of the sentence. Count proper nouns, initializations, and numerals.
2. Count the number of sentences in each 100 words, estimating length of fraction of the last sentence to the nearest 1/10th.
3. Count the total number of syllables in each 100-word passage. Add that number to the 100 words to give syllable count.

   (Example: 100 words + 60 syllables = 160)

4. Use the scale to determine grade level.

Syllables	Sentences
150	4.5
167	5.1
172	4.8
Total	Total
Average: 163 (use 164)	Average 4.8
Grade Level: 12	

NURSING TEXTBOOK READABILITY CHART	Bergerson Pharmacology	Burgess Psychiatric	DuGas 3rd Patient Care	French Diagnostic Procedures	Fuerst 5th Fundamentals of Nursing	Kurtz Workbook-Medical/Surgical	Lewis Patient Care	Marlow Pediatrics	Metheny 2nd Fluid Balance	Mormac 3rd Scientific Foundation	Reed Maternity	Sackheim Math/Nursing	Shafer Medical/Surgical	Smith 4th Patient Care	Williams 3rd Nutrition	
Foreword/Preface		X	X	X	X			X			X	X	X	X	X	
Table/Contents	X	X	X	X	X	X	X	X	X	X	X	X			X	
Appendix	X		X	X				X		X	X	X			X	
Glossary	X	X	X	X	X		X	X		X	X				X	
Index	X	X	X	X	X			X	X	X			X	X	X	
Chapter Introduction/Objectives			X	X	X		X		X	X				X	X	
Chapter Vocabulary			X								X					
Study Questions	X		X		X					X	X	X	X	X		
Charts/Graphs		X	X					X	X			X			X	
Teaching Aids/Information			X					X				X	X			
References/Bibliographs	X	X			X	X	X	X	X		X		X	X	X	
Audio-visual Aids							X	X				X	X	X		
Key Sentence Italics								X								
Key Vocabulary Italics	—	—	—	—											X	
Chapter Summary		X			X						X			X		
Readability Grade Level	17+	17+	11	17	16	13	11	11	14	17+	13.5	9	14+	15	14	

EXAMPLE of syllable count: Copper is essential to hemoglobin synthesis.

6 words + 8 other syllables = 14 syllables

The chart on the preceding page depicts the readability level of selected nursing textbooks.

The Cloze Procedure Test

Another test, the Cloze Procedure Test, can be used to determine the suitability of a text for entire class or individuals.

Method : A. Select a 250 word passage at beginning of textbook.

B. Type the passage omitting exactly every 5th word.

C. Hand out copies to each member of group and have student read complete passage silently. Then have him complete every blank with best word he can.

Scoring: A. Count up number of blanks containing exact words.

B. Divide the number of words exactly replaced by the total number of blanks.

(45-50 percent correct shows book is on student's INSTRUCTIONAL level. 60 or more is on INDEPENDENT reading level.)

C. Multiply above score by 1.67 to determine comprehension of grade level.

Note: If grading includes use of context clues, then synonyms may be accepted as correct answers, e.g., doctor/physician.

Determine the suitability of a text for nursing using the following information:

The Patient and the Nurse

"The patient is a person" and "Patients are people" are phrases used frequently in the nurse's education. These or similar phrases 1____ to remind the nurse 2____ the patient, whoever he ____ be, is a human 4____

with hopes and desires, 5 ____ and dislikes, strengths and 6 ____. The patient may be 7 ____ man or a woman, 8 ____ boy or a girl, a 9 ____ or an elderly person. 10 ____ he is and his 11 ____ are important. They are 12 ____ paramount importance to him 13 ____ they should be a 14 ____ important consideration in his 15 ____.

Being a patient places 16 ____ person in a unique 17 ____. The number of places 18 ____ patient care is offered 19 ____ are numerous and differ 20 ____. The person who becomes 21 ____ patient is often described 22 ____ "one who is under 23 ____ care of a physician 24 ____ in a hospital." Patients 25 ____ receive care in the 26 ____ office, in the outpatient 27 ____ of a hospital, in 28 ____ own homes, in nursing 29 ____, in other institutions, and 30 ____ recently in offices of 31 ____ in private practice. Regardless 32 ____ where care is given, 33 ____ experience has special meaning 34 ____ the patient. Perhaps for 35 ____ people, institutional care has 36 ____ greatest significance. The fact 37 ____ the person is away 38 ____ his home, family, friends, 39 ____ usual way of life, 40 ____ for only a short 41 ____, and is faced with 42 ____ of disease or illness 43 ____ unpleasant experiences may tax 44 ____ resources in understandings and 45 ____ adaptation.

The individual who becomes 46 ____ patient in a hospital 47 ____ on a different status 48 ____ is surrounded by circumstances 49 ____ unlike his usual ones. 50 ____ ital environment becomes different from the familiar.

The SQ3R Study Technique

The SQ3R Study Technique* can help students use textbooks more effectively. The five steps of SQ3R are:

1. S = Survey

   Read the title of the chapter.
   Read the introductory statement.
   Read all main headings in order.
   Study illustrations and read the concluding statement or summary.
   Try to recall the outline of the chapter before going on.

*This discussion was excerpted from Reading Strategies for Secondary School Teachers (Burmeister, Lou E.) pp. 84,85.

2. Q = Question

Look at the first main heading.
Ask yourself what it means.
Ask yourself questions that you think might be answered in the section. For example, if the heading is "Formal English," ask yourself questions, such as: What is formal English? Do I ever use formal English? When should I use it? What other levels of English are there?

3. R_1 = Read to find the answers to your questions.
If the answers are not there, you may wish to find them somewhere else. These are good questions to ask in class or to go to the library to find the answer.

4. R_2 = Recite

Recite the answer to yourself to help you remember it.
Ask yourself if the answers given by the author make sense.
Ask yourself if you have a new idea which you can use--perhaps in a written assignment or in conversation or in performing a task.

5. R_3 = Review (or Reconstruct)

Review the whole chapter in a "survey" fashion, but with the details filled in. Then reconstruct the outline in your mind or on a piece of paper.
Try to recall important ideas the author has discussed.
Ask yourself some interpretive level or critical-creative-evaluative level questions.
Try to think of applications of the ideas learned.

In summary, it is important that all educators are familiar with the types of learning and those measures that can be used to minimize obstacles to learning. It is imperative that persons in developmental studies and other disciplines collaborate in their efforts to maximize learning opportunities.

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