

A MULTIDIMENSIONAL TOOL FOR CLINICAL EVALUATION

ANDREA BAUMANN

EDIE BENOIT

Clinical evaluation has been a problem for nursing educators for many years. Previous attempts to deal with this problem are well documented in the literature. Nursing authors such as Palmer (1962), Slater (1967), and Fivars and Gosnell (1966) describe a variety of approaches to clinical evaluation. The descriptions of the tools they developed were helpful in the initial stages of developing a clinical tool.

This article describes the development of the clinical evaluation tool used in the second year of the nursing programme at the University of British Columbia. One of the first decisions which had to be made was the design of the tool. There were a number of variables which had to be considered. The design had to meet course requirements and the constraints which accompanied these requirements. It also had to be congruent with the faculty's beliefs and assumptions about evaluation in general, and clinical evaluation in particular. A review of these variables led to the decision that the measurement of clinical competency required the development of a multidimensional tool. This approach agrees with Reilly (1975, p. 145) who states "Clinical practice is complex and of course cannot be evaluated by any single procedure. No form by itself is an appropriate evaluation device."

The tool is comprised of six separate dimensions. These are behavioural objectives, weighting, a rating scale, computer scoring, methods of data collection and a guide for the use of the tool. Each of these components will be discussed.

OBJECTIVES

Behavioural objectives were the basis of the tool. These were drawn from the overall objectives of the course. Two levels of objectives were identified — general and specific. Each general objective was broken down into specific objectives which further described expected student behaviour. Figure 1 demonstrates the breakdown of one general objective.

Because of the commitment to the nursing process, the objectives were arranged according to the following major headings — assessment, planning, implementation, evaluation. Each objective was used throughout the second year clinical experience. They were designed to be applicable to a variety of clinical settings.

1. Demonstrates ability to organize nursing care.
 - 1.1 performs nursing interventions and delegated tasks in an appropriate time period
 - 1.2 completes nursing interventions and delegated tasks in appropriate time period
 - 1.3 arranges factors in situation to facilitate nursing care
 - 1.4 reorganizes nursing interventions as necessitated by situation

Figure 1 General objective with appropriate specific objectives

WEIGHTING

Another dimension utilized in the tool was the technique of weighting. Weighting was used to alter the emphasis placed on designated clinical objectives. Each general objective was assigned a weight of from one to four. A weight of four designated greatest emphasis; a weight of one designated least emphasis. This enabled the student to see where the emphasis was being placed at specified times throughout the clinical year. It was also a means by which student progress could be assessed. As the student progressed through three different clinical settings in the second year, the expectations placed on her were reflected in the assigned weightings. (Figure 2).

The assignment of weights was based on a number of variables. One of these was a belief in how a student learns (Rines, 1963). Another was the student's knowledge and skills upon entering second year. These influenced the initial weighting. Subsequent weightings were assigned in the context of the student's expected knowledge and skill level at designated intervals throughout the second year. These expected levels of knowledge and skill are based on the current course content, laboratory content and independent study content.

RATING SCALES

A twelve-point rating scale was devised. The ratings ranged from 3.5 to 10 and were grouped into four levels of performance. Each level of performance had a range of three ratings. Figure 3 illustrates the four levels of performance and the behaviours used to define them.

The student is assigned a rating for each specific objective. This rating is decided upon by the teacher or the student* in the context of the student's current experience. There are three steps in the assignment of a rating to each specific objective. First, the teacher must review collected data. These data are in the form of anecdotal records,

*The student follows the stated procedure when doing self-evaluation on assigned objectives.

	November	February	March
A. ASSESSMENT			
1. Collects relevant data	4*	4	4
2. Interprets relevant data	4	4	4
B. PLANNING			
1. Formulates patient objectives	3	2	2
2. Plans appropriate nursing care	2	3	4
C. IMPLEMENTATION AND EVALUATION			
1. Applies principles of comfort and safety when giving nursing care	3	4	4
2. Demonstrates motor skills when nursing individuals experiencing loss	2	4	4
3. Demonstrates ability to organize nursing care	1	3	4
4. Demonstrates clinical judgement	1	3	4
5. Demonstrates communication skills	2	3	4
6. Relates purposefully with individuals experiencing loss	1	3	4
7. Applies principles of learning and teaching while performing nursing interventions	2	3	3
8. Evaluates the effectiveness of the nursing care provided	2	3	4
9. Assumes responsibility for fulfilling a team member role	1	2	2
10. Assumes responsibility for improving the quality of own performance	2	3	3
11. Assumes responsibility for self-directed preparation to enhance the subsequent learning experience	4	4	4

**Scale of Weights*

4. The objectives assigned this weight have the greatest emphasis
1. The objectives assigned this weight have the least emphasis

Figure 2 Weights assigned to each general objective

written assignments and the student's self-evaluation. Then, the teacher identifies the student's level of performance on the basis of these collected data. Finally, within the assigned level of performance, the teacher selects the most appropriate of the three possible ratings.

If the teacher is unable to rate the student on a particular specific objective, she may omit that rating. She records 0.0 instead of a rating. The computer has been programmed to omit this objective and to calculate the mark from the remaining specific objectives.

COMPUTER SCORING

The tool was designed for computer scoring. The computer calculates a mark for each general objective as well as an overall clinical

Unacceptable Performance (Rating - 3.5, 4.0, 4.5)	<ul style="list-style-type: none"> — Student does not meet objective — Requires intensive teacher guidance in assigned situations — Does not demonstrate initiative in meeting objective — Demonstrates little or no application of knowledge
Marginal Performance (Rating - 5.0, 5.5, 6.0)	<ul style="list-style-type: none"> — Student is inconsistent in meeting objective — Requires intensive teacher guidance in assigned situations — Has difficulty demonstrating initiative in meeting objective — Demonstrates inconsistent application of knowledge in assigned situations
Acceptable Performance (Rating - 6.5, 7.0, 7.5)	<ul style="list-style-type: none"> — Student meets objective in assigned situations and requires only appropriate teacher guidance — Frequently demonstrates appropriate initiative in assigned situations — Demonstrates application of knowledge in assigned situations
Superior Performance (Rating - 8.0, 9.0, 10.0)	<ul style="list-style-type: none"> — Student meets objectives in assigned situations and requests teacher guidance when necessary — Consistently demonstrates appropriate initiative in assigned situations — Demonstrates application of knowledge in assigned situations

Definitions*

Consistent	— holding always to the same practice
Initiative	— the act of taking the first move; the ability to think and act without being urged
Frequent	— happening repeatedly at brief intervals
Occasional	— of irregular occurrence; infrequent
Situation	— combination of circumstances at any given time

*Guralnik, D. (Editor), *Webster's New World Dictionary*, 2nd edition, Toronto: Nelson, Foster and Scott. Ltd., 1970.

Figure 3 Levels of performance and accompanying definitions

$$\frac{\text{sum of ratings in specific objective}}{\text{sum of total possible ratings in specific objectives}} \times \text{weight} = \text{mark}$$

Figure 4 Formula for the calculation of the mark for each general objective

$$\frac{\text{sum of "marks"}}$$

Figure 5 Formula for the calculation of the overall grade

grade. The mark for each general objective is calculated on the basis of the formula in Figure 4. This gives the student specific feedback on her performance on each general objective.

The student's overall grade for each of the three eight-week clinical settings is calculated on the basis of the formula in Figure 5. The maximum grade is twenty per cent of the total course mark.

FORMAT OF THE TOOL

The tool was designed as demonstrated in Figure 6. In the 'Score' column the teacher places the rating she has assigned each specific objective. The 'Key Punch Information' column is utilized by the keypuncher to transcribe the student's rating onto computer cards. The 'Weight' column is used by the teacher to list the applicable weights for each general objective. The 'Mark' column is used by the teacher to list the student's mark for each general objective when it returns from the computer. The 'Comments' column is used by the teacher to support the rating assigned.

The face sheet of the tool includes a summary of the evaluation and an area for student comments. It also includes student identification data.

OBJECTIVES	Score	Key Punch Info.	Wgt.	Mark	COMMENTS
A. Assessment					
1. Collects relevant data					
1.1 utilizes pertinent sources					
1.2 identifies positive and negative forces					
1.3 identifies immediate observable indicators of goal achievement					
1.4 identifies coping behaviours perceived by individual					
2. Interprets relevant data					
2.1 identifies patient problems					
2.2 justifies the identification of patient problems					
2.3 orders and justifies ordering of patient problems					

Figure 6. Format of the clinical evaluation tool

GUIDE TO THE CLINICAL EVALUATION TOOL

The authors developed a guide to be used in conjunction with the clinical evaluation tool. It included the rating scale, the table of weights and the directions for scoring. The teachers and the students

received a copy of the tool and the guide at the beginning of the course. Each teacher met with an assigned group of students in order to interpret the tool.

DISCUSSION

In order to ensure the effective use of the tool numerous faculty meetings were held. Each dimension of the tool was reviewed as well as the subsequent implementation.

To clarify the interpretation of the objectives the authors identified examples of students' behaviours applicable to specific objectives. This was done in order to develop consistency in the interpretation of these objectives.

The implementation of the clinical evaluation included a mid-term and a final interview with the student. The mid-term interview was not a grading session but a discussion of the student's performance up to that point. The final interview included a grading and a detailed diagnosis of strengths and weaknesses. At this time the student also received a computer print-out listing the mark obtained on each general objective and the overall grade. This was used by the student as a guideline for improvement in performance in the next clinical setting.

The authors have begun statistical analysis of the tool. Studies have been completed comparing students' clinical grades and academic grades. The authors plan to conduct further correlation studies as well as inter-rater reliability studies.

References

- Fivars, G., and Gosnell, D. *Nursing Evaluation: The Problem and the Process*. New York: The MacMillan Co., 1966.
- Litwack, L.; Sakata, R.; Wykle, M. *Counseling, Evaluation and Student Development in Nursing Education*. Philadelphia: W. B. Saunders Company, 1972.
- Moritz, D., and Sexton, D. "Evaluation: A Suggested Method for Appraising Quality." *Journal of Nursing Education*, IX (January 1970): 17-34.
- Palmer, M. *Self Evaluation of Nursing Performance Based on Clinical Practice Objectives*. Boston: Boston University Press, 1962.
- Pearson, B. "A Model for Clinical Evaluation." *Nursing Outlook*, XXIII (April 1975): 232-234.
- Reilly, D. E. *Behavioral Objectives in Nursing: Evaluation of Learner Attainment*. New York: Appleton-Century-Crofts, 1975.
- Rines, A. R. *Evaluating Student Progress in Learning the Practice of Nursing*. New York: Teachers College Press, 1963.
- Schweer, J. E. *Creative Teaching in Clinical Nursing*. 2nd ed. Saint Louis: The C. V. Mosby Company, 1972.
- Slater, Doris. "The Slater Nursing Competence Rating Scale." Wayne State University College of Nursing, Detroit, 1967. (Mimeographed.)