The Cervero Model

Measuring the results of continuing education or staff development programs has always been a problem. Now there is hope for a solution. Cervero and Rottet (1984) indicate that one of the reasons why it has been so difficult to prove that continuing education courses make a difference is that only one factor has been used to predict change in performance. That factor is the program itself. They suggest three other factors are of equal importance. These factors are: the learner, the program itself, objectives of the program, and the milieu of practice. For each of these factors, they describe variables used for correlation with changes in nursing practice.

The individual learner has many characteristics which influence learning. Cervero and Rottet in the 1984 study used the variables of age, years in professional nursing, highest degree in nursing, and race as the important variables to investigate. The 1986 study by Cervero, Rottet, and Dimmock used motivation variables as described by Rogers and Shoemaker (1971) in their work on adoption of innovations. They categorized people in their response to change as: laggards, middle majority, pace-setters, and innovators. Knowles (1980), on the other hand, suggests that the important individual characteristics that influence learning relate to the individual’s reservoir of knowledge, past experience, perceived need for problem solving, and timing of the learning. The challenge for continuing education and staff development specialists is to analyze these variables and determine which are important to correlate with expected changes in nursing practice in their institutions.

Cervero and Rottet (1984) refer to the second factor, the program, as a set of processes rather than a unitary construct. Variables used to measure this factor were: the program’s relevance to practice needs; clarity of program objectives; faculty effectiveness; and compatibility of learning styles with teaching styles. Wake (1986) confirmed the value of these variables. She found high correlations between the intention to change practice and ratings for instructor effectiveness and relevance of program content. The implication for continuing education and staff development specialists is to include detailed descriptions of teaching strategies as a part of all evaluation studies. A further challenge is to refine measurement tools for each of the variables in this factor, the program itself.

The third factor described by Cervero and Rottet (1984) is the objectives of the program which specify the nature of the desired change. This was measured by asking participants if they were likely to be able to implement the program objectives in their practice. That this is an important variable was documented by Wake (1986), who found that patient-oriented and organization-oriented objectives with content related to implementation should be included in learning design. Cervero and Rottet (1984) found that more change in practice took place if participants rated themselves high on likelihood of implementing the program objectives. The implications for continuing education and staff development specialists are to specify objectives in behavioral terms and to be realistic about expected outcomes.

Cervero and Rottet’s fourth factor, practice milieu, was measured by asking 20% of the nurses on each unit on which a participant practiced to complete a questionnaire related to their nursing practice. This recognizes the influence of peers and the system on the ability of participants to practice nursing according to what is taught. Many participants are more influenced by the people with whom they practice than they are by instructors or content of programs. This fact helps to explain why there can never be a one-to-one relationship between what is taught and what is practiced. The implication for continuing education and staff development specialists is to exam-
ine the practice milieu when judging the success or failure of programs. It also indicates that educational interventions should not be used for ineffective practice when systems interventions would be more effective.

The four independent variables (factors) of individual, CE program, proposed change, and practice milieu were correlated with the dependent variable, changes in practice by participants. The changes in practice were measured by an audit performance questionnaire which related to each of the objectives of the program. The questionnaire, compiled with assistance from a quality assurance committee, reflected practice expectations in the hospital in which the study was conducted. Rottet and Cervero (1986) describe the construction and administration of the questionnaire which was given to the participants one week after completing the program and six months later. The practice findings did relate to the four factors of the Cervero model.

Warmuth (1986), however, cautions that programs may lead to changes that cannot be easily documented. She found learners reported changes in rationale for nursing practice and in patient and staff teaching. In addition, Warmuth notes that sometimes participants have made a purposeful decision not to use program information.

Cervero, Rottet, Dimmock, Wake, and Warmuth have provided some important research that needs to be further investigated, duplicated, and refined by continuing education and staff development specialists in many settings, with a variety of participants, and for many different programs. Cervero (1985) states that the question for this research should be, "Under what conditions and for which types of individuals are which characteristics of continuing education most likely to produce changes in professional behavior and client outcomes" (p. 85). This research may prove that continuing education and staff development programs do make a difference in practice.

REFERENCES