Continuing Professional Education and Behavioral Change: A Model for Research and Evaluation

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BACKGROUND AND PURPOSE

One of the central questions now being asked about continuing professional education (CPE) is "Is It Effective?" While the responses to this question have been mixed, Houle (1976) states that "objective global evidence exists that continuing education is effective in changing practices." (p. 124). Indeed, published reports have demonstrated behavior change resulting from CPE programs for nurses (Cox & Baker, 1981), dentists (Chambers, Hamilton, McCormick, & Swendeman, 1976), pharmacists (Benfield, Rosenbluth, Ryan, & Smith, 1977; Watkins, Norwood, & Meister, 1976), and physicians (Caplan, 1973; Inui, Youette, & Williamson, 1976; Kantwinkel, Cook, Nowacek, Ivey, & Short, 1979; Laxdal, Jelnin, Wilson, & Salisbury, 1978; Mahan, Phillips, & Constantz, 1978; Rubenstein, 1973). One of these studies, in addition, shows improved client outcomes (i.e., lower hypertension) resulting from the CPE program (Inui, 1976). Thus, in addition to the global evidence cited by Houle, published research does demonstrate the effectiveness of specific continuing education programs.

In the face of this confirming evidence, many educators and practitioners continue to decry the inability of CPE to produce improved performance. The opinion that CPE is ineffective often results from personal experience and is also supported by several studies (Lloyd & Abramson, 1979). In fact, given the tendency not to report programming failures (Sork, 1981), it is reasonable to expect that the published literature does not reflect the true ratio of program successes to failures.

The answer to the question regarding the effectiveness of CPE is that some programs produce behavior change and others fail to do so. From an educational point of view, this is an unsatisfying response because the evidence does not help us understand why some programs were successful in promoting behavior change, and how they were different from those programs which did not change performance. Those involved in CPE need to know what the success of a program depends upon. For this reason, attempts to learn whether CPE is effective is not likely to produce fruitful results. From a programming point of view, it is the wrong question.

A more useful research approach would seek to understand why some learning activities are more effective than others. To do this, it is necessary to define and measure characteristics of the educational act and the context in which it is embedded, and discover how variations in these characteristics are related to the outcomes of interest. A research question in this approach would 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?" In order to improve the planning and effectiveness of CPE, answers to this more complex question are needed.

A first step in this line of inquiry would be to construct a sound theoretical or research rationale that includes the major factors involved in the relationship between CPE and behavioral change. The purpose of this paper is to stimulate a more systematic and useful research effort on the effectiveness of CPE by proposing such a rationale and conceptual framework.

RATONALE FOR THE FRAMEWORK

Houle defines three major and overlapping modes of continuing professional learning: inquiry, instruction, and performance (Houle, 1980). Inquiry is the "process of creating some new synthesis, idea, technique, policy, or strategy of action." In this mode, learning is often a byproduct of the activity (e.g., establishing policy). Instruction is "the process of disseminating established skills,
knowledge, or sensitiveness." The mode of performance is the "process of internalizing an idea or using a practice habitually so that it becomes a fundamental part of the way in which a learner thinks about and undertakes his or her work." This framework focuses on learning activities which are included in the mode of instruction. While the other two modes represent common and powerful forms of learning they are not included because they appear to involve educational processes fundamentally different from instruction, because the mode of instruction is used most frequently by continuing professional educators, and is the one over which educational planners have the greatest control.

Among the many possible outcomes of CPE programs, the proposed framework focuses on changes in behavior. While increased knowledge, improved skills, and changed attitudes are important and appropriate outcomes, a common criticism of CPE is that participation in formal CPE programs has little effect on professional behavior (Stein, 1981). This point highlights the importance of distinguishing between competence (ability to perform a given task according to set standards) and performance (actual execution of a task, voluntarily, according to set standards) when discussing the outcomes of CPE programs (Griffith, 1981). While educators are fairly adept at increasing competence through CPE, the major concern now is on ways of improving professionals' performance through continuing education.

In a review of research in CPE, Griffith (1981) arrives at one major conclusion:

**Successful programs of continuing professional education intended to implement lasting change cannot achieve their objectives if all of their emphasis is on changing the individual learner — at best such programs yield an increase in competence with no lasting effects on performance.** Truuly effective continuing professional education must view behavior as the result of interaction between an individual and his environment (p. 91).

An assumption of this framework is that individual behavioral change occurs within a social system. As a result educators must take into account the constraints and opportunities within the working environments of learners in planning programs that are intended to improve not only their competence, but also their performance.

**ELEMENTS OF THE FRAMEWORK**

The framework proposed here borrows several of its key components from the "adoption of innovations" literature which has also focused on understanding how overt behavior change is brought about in a social system. Houle (1980) suggests that this field "throws substantial light on the practice of continuing professional education" (p. 153). Using the results of over 1500 studies, Rogers and Shoemaker (1971) have synthesized a series of generalizations about the processes involved in the diffusion of innovations to the members of a social system. They define innovations broadly enough to include almost all of the objectives of CPE. Innovation is defined as "an idea, practice, or object perceived as new by an individual" (Rogers & Shoemaker, 1977, p. 19). A key part of this definition is perceived newness, not objective newness as might be measured by the lapse of time since its first use or discovery, since it is the perceived newness which determines an individual's reaction to an innovation. Thus, the "newness" component of an innovation may be new knowledge, a new attitude, or a decision to implement something already known.

Rogers and Shoemaker have identified a number of factors associated with the adoption of innovations. Four of these factors which have direct relevance to CPE have been selected to form a coherent framework for analyzing why CPE programs do or do not induce participants to make lasting changes. The framework as depicted in the Figure proposes that variation in four sets of independent variables would explain variation in the extent of behavior change and ultimately client outcomes. These four sets of variables are: 1) characteristics of the CPE program; 2) characteristics of the individual professional; 3) characteristics of the proposed behavioral changes; and
4) characteristics of the social system in which the professional operates.

This framework proposes that the characteristics of the CPE program, the first independent variable, are only one factor responsible for inducing behavioral change. Almost all previous studies have used a one-variable framework. Even then, the studies typically consider the CPE program as a unitary construct, rather than as a set of processes, each of which may have a differential effect on the outcomes of interest. For instance, was a particular program effective because the learners were involved in the planning process or because the instructor was dynamic? This framework suggests that processes in the design and implementation of the CPE program must be identified and related to program outcomes.

The framework is composed of three additional variables which Rogers and Shoemaker implicate as key factors in the adoption of innovations. Clearly, the individual professional as the participant and one who will or will not change behavior must be considered an important factor. Characteristics of the individual professional thus compromise the second independent variable. The most well-planned program will not induce behavior change in an individual who is not motivated to change. There would appear to be a host of characteristics of professionals that individually or in interaction with program characteristics would be related to the extent of behavior change resulting from CPE programs.

A third independent variable is the type of proposed changes which can usually, but not always, be equated to the goals and objectives of the program. In past research it has usually been assumed that all proposed changes are equivalent units. Rather than consider proposed changes as a unitary construct, it seems useful to identify characteristics of proposed changes which might be differentially related to actual changes. For example, all things being equal, it would seem that a change which is simple to make yet produces dramatic results in client outcomes would be adopted more readily than a complex change that produces ambiguous results.

The final independent variable recognizes the social system in which the individual professional must actually implement the behavior change. This may be the most powerful yet overlooked variable in analyzing the effectiveness of CPE. Griffith (1981) comes to the conclusion that:

To increase the probability of achieving success in any program of planned behavioral change, the educational agent must devise innovative approaches to working with those who have the authority to organize the working environment (p. 91).

Unless there are incentives or at least not disincentives within the working environment for the proposed changes, the CPE program is unlikely to be successful.

In the preceding paragraphs, the structure of the major components of the framework were described. It was proposed that within the four major variables specific characteristics must be identified. Rogers and Shoemaker have implicated a number of sub-variables which can serve as a starting point for the identification of these characteristics. These sub-variables are briefly described in the following pages according to the four major variables.

The analogue of the CPE program in the work of Rogers and Shoemaker is the communication channel which they define as the means by which information gets from the source to the receiver. Five sub-variables which they identify relate to the efforts of change agents. They found that change agent success in bringing about behavior change is positively related to: the extent of their efforts, the degree to which their programs are compatible with their clients' needs, the extent to which they work through opinion leaders, and their credibility in the eyes of clients. The adult education literature is replete with additional sub-variables that might be useful here. Prime candidates might be identified from program planning models which purport to prescribe good adult education practice (Houle, 1978; Knowles, 1980). For instance, one sub-variable might be the extent to which participants were involved in defining the objectives of the programs.

In the second major variable, Rogers and Shoemaker conclude that all individuals are not equally likely to adopt an innovation presented to them. Rather, they adopt at different times and may be classified on the basis of when they first began using the new idea. Thus, individuals may be ranked according to their innovativeness, which is their relative earliness in adopting new ideas when compared with other members of their social system. Houle (1980) suggests that active practitioners can be divided into four general groups according to their innovativeness — innovators, pacesetters, middle majority, and laggards. These groups can be differentiated in terms of their dominant attitudes toward their professional practice and the nature and extent of education they undertake. It seems that the characteristics associated with these four groups could be considered sources of variation in explaining why a CPE program changed participants' behavior. Rogers and Shoemaker found that the following sub-variables are positively related to behavior change: more education, more specialized operations, more favorable attitudes toward change, risk, education, and science, seek information more, have higher knowledge of innovations, and have more opinion leadership. While these types of variables cannot be easily manipulated, they might suggest differential strategies for various groups of individuals.

The third major variable, type of proposed change, is what Rogers and Shoemaker (1971) describe as "perceived attributes of the innovation" (p. 167). They describe five attributes which are related to adoption of innovations (Rogers & Shoemaker, 1971). Relative advantage is the "degree to which an innovation is perceived as being better than the idea it supersedes" (p. 167). Compatibility is the "degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of the receiver" (p. 168). Complexity is the "degree to which an innovation is perceived as relatively simple to under-
stand and use” (p. 168). Trialability is the “degree to which an innovation may be experimented with on a limited basis” (p. 168). Observability is the “degree to which the results of an innovation are visible to others” (p. 168). Based on these characteristics, we could predict that a CPE program which seeks to induce participants to use a new drug for the treatment of pneumonia is more likely to be successful to the extent that the drug has the following characteristics: 1) it is shown to be more effective in treating pneumonia than the drugs currently being used by participants in the learning program; 2) it can be prescribed in the same way as currently used drugs; 3) the participants clearly understand why the drug works; 4) it can be tried with some patients before being used with all patients; and 5) other members of the participants’ working group can know that he or she is using a new drug.

The fourth dimension of the framework is the social system in which the potential adopter is located. Rogers and Shoemaker define a social system as a “collectivity of units which are functionally differentiated and engaged in joint problem solving with respect to a common goal” (Rogers & Shoemaker, 1971, p. 28). They argue that the social structure affects the rate of adoption through “system effects” (p. 29) which are the influences of a system’s social structure (e.g., norms) on the behavior of individual members of the social system. The following system characteristics have been shown to be positively related to adoption: system norms which are positive toward adoption, close interpersonal communication among the members of the system, and the extent to which a social system’s legitimizers are involved in the decision-making process related to the innovation. Analysis of this component may show that planning processes exist related to the sub-variables in the social system which, if used, increase the likelihood of program success. This would be especially true for CPE conducted at the workplace given the proximity of the program planner to the social system of the participants.

CONCLUSION

This framework is offered as a method for analyzing why CPE programs are successful or not in producing lasting changes in professionals’ performance. After research based on the framework identifies factors which are significantly related to behavior change, these factors could be incorporated into existing program development models or be used to construct new models. The framework is short of being empirically testable in its present form. It describes four generic classes of variables as opposed to operational measures that must be employed in quantitative research. While several sub-variables have been suggested, possible interaction effects have not been discussed. Thus, the logical next step would be to formu-

late a network of sub-variables within each area and hypotheses regarding their relationship to behavior changes, leading to operationalization, measurement, and testing on a practical scale.

REFERENCES


