PROBLEM-BASED LEARNING: Using cases to teach about how to deal with Ethical problems

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Introduction

This article discusses the use of cases in problem-based learning to teach about how to deal with ethical problems in research with human subjects.

Problem-Based Learning

The problem-based learning (PBL) approach in medical education began at McMaster University in the mid-1970s. According to Barrows and Tamblyn (1980):

"Problem-based learning is the learning that results from the process of working toward the understanding or resolution of a problem. The problem is encountered first in the learning process (p. 1)."

PBL is a teaching method that can be used in many formats, such as small-group tutorials, problem-based lectures, large-group case method discussion, and problem-based laboratories (Kaufman, 1995). However, it is used most commonly in small groups with a facilitator. The essence of the PBL method involves the three steps of: confronting the problem; engaging in independent study; and returning to the problem (Wilkerson & Feletti, 1989).

The case study method was pioneered at the Harvard Business School (Christensen & Hansen, 1987). It may be considered as one form of PBL. The most common form of case study is a narrative of an actual event or situation in which learners and teachers examine, discuss and propose solutions to a realistic problem situation. The best case studies present a dilemma, or puzzle, that will elicit very different responses and suggestions for action. Good case studies have several attributes (Meyers & Jones, 1993). They are usually open-ended, that is, there are multiple possible solutions with no single "right answer". They tell a story and report the facts just as a news reporter should, that is, without interjecting bias and opinions into the story. Cases should seize learners' attention from the start with a situation that is realistic and compelling, since learners need to become immersed in the story. It also is important not to complicate the case with a myriad of information and details. Length must be tailored to the time available, and the complexity of cases should be matched to the learners' sophistication.

Purpose of Using Cases

The case method of teaching can have several important purposes (Boehrer & Linsky, 1990). A central purpose is to foster analytic or critical thinking, which will also develop students' confidence and skill in dealing successfully with unanticipated issues under practical constraints. Another key purpose is to transfer much of the responsibility for learning from the teacher to the student, whose role shifts from passive absorption to active construction of meaning. The teacher challenges students to be prepared to discuss various aspects of the material, to set priorities for learning and to acquire information as it is needed to deal with the problem at hand. Cases help students learn higher-level concepts and their application to practical situations. A good case discussion can be lively, exciting and involving for learners. It emphasizes synergistic collaborative learning, in which the group product exceeds the sum of learners' individual contributions because it results partly from the interaction among them.

Finally, the case method communicates the important value of good questions in situations where there are few single right answers.

There is no simple and unequivocal "right answer" to the problems presented in the cases. There may be some solutions which arguably are better than others under the circumstances. One purpose of discussing the cases is to explore what the circumstances appear to be to each of the people involved, to identify possible ways of dealing with the problems, and to encourage learners to make their own decisions based upon their reflections and interpretation of the case. The insight gained from this process hopefully enables learners to deal with, or prevent, similar incidents in their own settings. Case studies also raise awareness of educational issues and of possible ways of dealing with them. Therefore, learners may be better able to anticipate and cope with new and unrelated problems.
Rationale for Problem-based Learning

Cognitive Psychology

Schmidt (1993) has outlined three principles from cognitive psychology that provide support for PBL.

First

PBL activates the prior knowledge of the learner, since learners must use their previous knowledge to address the problem posed. Prior knowledge may be the most important determinant of the nature and amount of new information that can be processed.

Second

as learners discuss the case, they elaborate on knowledge that has been presented initially and on new knowledge that is contributed. Learners create new associations between concepts and multiple cognitive links among old and new concepts. The more links that are created, the better learners will be able to retrieve information from memory.

Third

PBL presents problems to learners as they would occur in actual situations. Learning occurs within a context similar to the one in which it will be applied. The problem and its resolution cues the learner when similar problems arise in practice. These cues are essential in order to access prior knowledge embedded in our memory.

Adult Learning Principles

PBL strongly embraces the principles of adult learning (Knowles & Associates, 1984). Adults are more motivated to learn when their own learning needs and experience provide the starting point for learning, and when the focus of their learning is on immediate application to relevant life situations. They also are motivated to learn when their personal experience is used as a resource, and when they direct and assess their own learning.

Research Findings

The research conducted on PBL clearly indicates that learners prefer this method to the conventional, lecture-based method (Albanese & Mitchell, 1993; Norman & Schmidt, 1992; Vernon & Blake, 1993; Moore et al., 1994). Learners have reported higher levels of satisfaction and enjoyment, and more positive attitudes. More specifically, research on using the case-method in the teaching of medical ethics has reported significant increases in the development of moral reasoning and decision-making about value issues in medical students (Self, Baldwin & Wolinsky, 1992).

Requirement for Professional Practice

Cervero (1990) has argued that the distinguishing characteristic of practice is its action-orientation. Professionals reason toward the goal of wise action, rather than describing “what is” (Buchmann, 1984).

They attempt to “put matters right” rather than “uncover the truth”. This view of practice implies that professionals continually make judgements about the appropriate action(s) in specific situations. To improve practice, a professional’s ability to make the best judgements needs to be developed. The research into the acquisition of professional expertise strongly supports the assertion that without the knowledge acquired from practice, wise action is not possible (Cervero, 1990). The value of the practical knowledge gained stems from its main features: it is time-bound and situation specific, and is personally compelling and oriented toward action (Freiman-Nemser & Floden, 1986). These features of practical knowledge imply that it can only be acquired by engaging in practice or at least simulations of practice (Kennedy, 1987). Cases can provide these realistic simulations of practice.

Advantages to Using Cases in Ethical Teaching

There are many advantages to employing a case-based approach to ethics teaching. Korenman and Shipp (1994), in an AAMC handbook for instructors teaching the responsible conduct of research through case-study method, outline the following advantages. Discussing cases:

1. permits participants to become sensitized to their personal value systems;
2. permits participants to express opinions based upon those values, and to compare their values with those of others;
3. tests ethics policies and guidelines, which have been developed for validity and comprehensiveness;
4. serves as reference points for individuals when they experience an analogous problem in their work;
5. permits trainees, faculty, and staff to enter into discussion using a common frame of reference;
6. permits cases dealing with a given issue to be presented from a variety of points of view; and,
7. permits individual problems to be analyzed without the prior need to absorb a vast field of knowledge, particularly when participants are alerted to appropriate resources than can enlighten them on technical and other unfamiliar considerations.

Successful Problem-Based Learning

Successful problem-based learning offers considerable educational flexibility. Learners and teachers engage in a process of discovery together, which involves the exploration of their attitudes and prejudices, and recognition of conflicting ethical principles (Korenman & Shipp, 1994). Much of the benefit of this method depends on an open discussion among students and teacher. The teacher needs to play the role of facilitator, which may be un-familiar or uncomfortable for some faculty. Many medical schools offer workshops to develop these skills (Korenman & Holmes, 1996). Korenman & Shipp (1994) suggest that facilitators function most effectively when they:

- stimulate dialogue among learners rather than lecture;
- permit self-discovery by learners rather than impose their expertise;
- intervene only when the discussion lags or drifts from the topic;
- serve as resources to learners rather than final authorities; encourage acceptance of uncertainty and reflection; and,
- refer students to additional reading material and learning opportunities.
Using Cases at NCEHR

At its meeting in May 1997, the Committee on Communications and Education proposed to set up a working group whose task would consist of finding cases suitable for a problem-based educational approach. This working group consists of

D. Kaufman, J. Last, F. Roberge and R. Carpentier.

Since NCEHR plans to develop and offer education sessions for REB members over the next year, it is crucial that we present members with cases they can relate to. These cases are suitable for various purposes:

- Education sessions for the Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans, as they would serve as examples to introduce the new rules and their differential application in context.
- Interactive learning session on our Web Site Learning Centre.
- Publication in Communiqué for illustration of problematic situations.

We would welcome our readers' input into the process. If you have any ideas or suggestions about the process of developing cases, the content of the cases, or methods of teaching using the cases, please send these to Dr. David Kaufman at (902) 4941260 (tel.), (902) 494-8884 (fax), or David.kaufman@dal.ca (Email).

References


