DOCUMENT RESUME

ED 375 303 CE 067 468

AUTHOR Dowd, Steven B.
TITLE Education as a Change Strategy for Allied Health.
PUB DATE 94
NOTE 24p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Allied Health Occupations; *Allied Health Occupations Education; Change Agents; *Change Strategies; Critical Thinking; Decision Making; Educational Change; Group Activities; *Holistic Approach; Postsecondary Education; *Problem Solving; *Role of Education; Teacher Role
IDENTIFIERS *Collaborative Learning

ABSTRACT

The ability of the educational system to bring about thinking allied health practitioners will remain limited unless methods of education are used that bring about reflective practitioners able to be change agents. Education must be transformative, helping the individual to reach new personal or professional heights. Some sort of balance must be achieved between education and training in the health professions. Collaborative learning incorporates teaching techniques and attributes in a problem-solving environment. This unique approach to learning has excellent application to the allied health educational process, and its focus on problem-solving approaches provides students with the decision-making skills they will later need as practitioners. Three essential elements of a collaborative learning environment are that it is nonthreatening and democratic; the teacher acts as a facilitator; and the learner must contribute, solve problems, and discuss. The most prominent characteristic of collaborative learning is its emphasis on the acquisition of problem-solving skills. In addition to training for skills and education for problem posing and solving, a necessary focus is a third neglected component of the curriculum--the development of values and beliefs necessary for holistic education. (Contains 31 references. A model of holistic education for the allied health professions is appended.) (YLB)

EDUCATION AS A CHANGE STRATEGY FOR ALLIED HEALTH

Steven B. Dowd, Ed.D., R.T.(R)
Radiography Program Director
University of Alabama at Birmingham
354 SHRP
1714 Ninth Avenue South
Birmingham, AL 35294-1270

The Nature of Allied Health Education

Blayney and Selker (1992) note that graduates of allied health programs account for as many as one out of every six graduates from institutions of higher learning. This figure does not include the many hospital-based education programs in allied health, which for some professions account for as many as half of accredited programs. However, they also note that unless changes are made in the way allied health practitioners are educated, then a possibility exists that allied health professions will be unable to respond to societal needs, an acute need in today's healthcare reform environment.

Among the panel recommendations of the above Pew Health Professions Commission is to provide a variety of competencies, including "Expanded Accountability" and the ability to "Continue to Learn." In the past, the allied health professions existed mainly as direct extensions of the physician, or simply providing another pair of hands for labor. However, allied health professionals have the potential to take on new roles in the healthcare system. Such individuals could provide more cost-effective care, thereby improving society's access to healthcare.

An well-known example is the use of physician's assistants and nurse practitioners, who generally are willing to assume duties that physicians - steeped in a disease model of healthcare that views patients as "interesting" only when they possess obscure or well-paying diseases - are not. One of the strongest

needs in healthcare reform is an emphasis on wellness and primary care, areas traditionally neglected in the academic health centers that train and educate the majority of US physicians.

Another example would be the use of radiographers (individuals who take x-rays) as screening diagnosticians. Radiologists tend to prefer to concentrate on examinations such as Computed Tomography (CT) or Magnetic Resonance Imaging (MRI), the more interesting or "big ticket" examinations. Radiographers can screen routine examinations for suspected pathology or perform some routine examinations that traditionally have been the domain of the physician such as fluoroscopy (eg., barium examinations). In Great Britain, an experimental effort is underway to provide such education and training to radiographers in a master's degree curriculum. Great Britain has also used a "red dot" system for many years - so named as specially educated radiographers screen emergency room films for suspected pathology, marking them with a red dot to alert the radiologist who will later read the film. These radiographers are better able to identify pathology than the emergency room physicians who order the examination. Such screening decreases the amount of time a highly paid physician must spend viewing films (in the US, the average starting salary for a radiologist now exceeds $200,000 per year).

Another example involves the securing of patient consent and the provision of patient education by allied health professionals

(Dowd, 1991a). Although in many cases these individuals have a superior ability to communicate with the patient, legal and ethical constraints often prevent them from informing patients about procedures. This is unnecessarily limiting, and detracts from patient care. The dichotomy of current practice is that only physicians are seen as being able to give the patient enough information to make a decision regarding treatment.

The ability of the educational system to bring about this type of practitioner will remain limited unless methods of education are used that bring about reflective practitioners able to be change agents. Another issue intimately related to holistic education is developing individuals who are, for lack of a better term, "good people." Although many individuals enter the health professions with altruistic intentions, a very uncaring healthcare system tends to rapidly burnout practitioners. Welch (1980) identified a cyclical process similar to child abuse in which uncaring and even abusive practitioners abuse students, leading those students to then abuse both students and patients as practitioners. Again, there is a need for individuals able to both identify and solve problems, not merely integrate themselves with poor practitioners.

This article will review learning as a change strategy, and the use of collaborative methods designed to bring about change agents and reflective practitioners. Using these methods will be valuable to the educator seeking a change from the status quo.

Beyond training for skills, traditionally well-covered in allied health programs, and education for problem-posing and solving, a neceesary focus, however, is a third neglected component of the curriculum - the development of values and beliefs necessary for holistic education. This will also be discussed.

Learning as a Change Strategy

Value systems, beliefs, and behaviors are intrinsic to the individual, though they were originally assimilated from another source (Brookfield, 1986). Learning is crippled when the individual cannot critically reflect on assumptions, imagine alternatives, and function in a self-directed, autonomous manner (Schoen, 1983). For learning to be a change strategy, according to Verduin, Miller, and Greer (1977), behavior change will come about only if the way individuals perceive their environment changes. Kane (1994) has similarly noted that humans are not simply information processors. Instead, problem identification is as important:

> In order to recognize that a problem exists, it is necessary to recognize that something is in a state of disequilibrium, that something requires our attention that something should be different than it now is. (pg. 3)

A literary analogy can be seen in the work of John LeCarré (1968), who in, A Small Town in Germany, states that "how else . . . do fancies multiply, how else is wisdom forged, and a course of action finally resolved upon, if not through doubt?" (cited in

Wallace, 1985, pg. 13). Doubt, not faith, LeCarré notes later, is the greatest gift, as it makes us aware of the possible consequences of our acts, and how mixed they can be.

One of the philosophical views of adult education is that it does not exist to preserve the status quo (eg., Ilich, 1970; Friere, 1970) but to bring about personal and societal improvement. Such an environment has changed the purpose of teaching from what we know to what we don't know; students must become inquisitive about what can be. In such an environment it becomes more important for the facilitator as well to know which questions to ask than to have pat answers based on "expert" opinions.

The aims and objectives of adult education are 1) cultivation of the intellect; 2) individual self-actualization; 3) personal and social improvement; and 4) social transformation (Darkenwald and Merriam, 1982). Lindemann (1926) stated that adult education was for those individuals who would be free:

> Who know their powers and capacities as well as their limitations; who seek a way of life which utilizes their total personalities; who are able to alter their conduct in relation to a changing environment in which they are conscious of being change agents. (pg. 50)

Most allied health professions still teach to a one right way method (Dowd, 1991). This may be necessary to a certain extent as effective task performance is still a primary goal of

health professionals. However, this cripples the ability of individuals to be a change agent. Savitt and Kopperl (1982) noted that enforced subservience crippled the professional standing of nurses, citing this 1917 statement from the American Journal of Nursing:

> The first and most helpful criticism I ever received from a doctor was when he told me I was supposed to be simply an intelligent machine for the purpose of carrying out his orders. (pg. 17)

Today nurses enjoy a much-expanded place in the healthcare system in comparison to many of the allied health professions. In 1990, Conway and Buck found that 38% of the radiologic technologists they surveyed felt that they were being "treated like equipment." The concept of a human as an "intelligent machine" is distasteful to those who support holistic education; however many practitioners and educators still support such a view. Education has the potential to produce those change agents that can eliminate the specter of subservience from allied health; but not by applying isolated principles of education to an already dysfunctional model of education that binds rather than frees the individual. Education must be transformative, helping the individual to reach new personal or professional heights.

One question that must be answered is how much of allied health education is actually education and how much is training.

Some individuals see training as a low-level function (eg., one educates people and trains an animal) and education as a higher goal. Although this belief is, to a certain extent, accurate training is still very important. No one would want a well-educated yet poorly trained physician to perform surgery on them. Some sort of balance is needed between education and training in the health professions (allied health, nursing, and medicine); this balance has yet to be achieved.

Collaborative Learning

Collaborative learning incorporates teaching techniques and attributes in a problem-solving environment. This unique approach to learning has excellent applications to the allied health educational process, and its focus on problem solving provides students with the decision-making skills they later will need as practitioners.

According to Smith (1982), collaborative learning has four primary characteristics that increase the student's investment in the educational process:

- Everyone shares in the program development and evaluation.
- Freedom of expression is allowed.
- Group members possess the skills of joint inquiry and problem-solving.
- A diagnostic attitude toward processes is encouraged.

The shared nature of program development and implementation requires student involvement, thus enhancing both their

educational experience and their investment in the program and the learning process. Cognitive theory (Fuhrmann and Grasha, 1983) indicates that the challenges presented by problems and issues in the learning process are important in helping students to learn.

Brookfield (1986) sees collaborative learning as the most frequently mentioned characteristic of adult learning. In addition, collaborative learning is experiential in nature. Experiences - particularly student-centered experiences - are regarded as being of particular importance and benefit.

Philosophically, collaborative learning is based on work by Dewey, Piaget and other leaders in the critical thinking and problem-based learning movements. Dewey (1933) believed that reflective thinking -- a process of evaluating actions that results in improved methods for performing those actions -- was a way to free the individual from routine thinking.

To Dewey, routine actions were guided primarily by traditional action and external authority, and they thus supported the status quo rather than promoted change. Dewey instead believed that education was a cyclical process involving the following steps:

- Investigation and exploration.
- Action grounded in exploration.
- Reflection on this action.
- Begin the process again.

This concept has relevance to professional standing as well as the education of professionals. If allied health practitioners consider themselves to be professionals, their actions should be based on an internal autonomy rather than an external authority. Internal autonomy develops from a knowledge of professional processes and procedures and the self-confidence that they engender. Collaborative learning, with its emphasis on problem-solving, is ideally suited to producing such professionals.

One very strong recent influence in collaborative learning is Schoen (1983), who analyzed the ways in which professionals solved problems related to their work. Schoen theorized an individual he called the reflective practitioner. This practitioner reflects on the environment, considers possible approaches to a given problem and pays attention to his or her own internal feelings and educated intuitions.

Writing about physical therapy, Jensen and Denton (1991) made the following observation, which seems applicable to the other health-related professions as well:

> We believe that physical therapists, like other professionals, practice in an environment where clinical problems often defy technical solutions. Creating opportunities for physical therapy students to learn the skills and attitudes required for reflective practice may be one way of better preparing students to handle the complexities of practice; that is, to consider the consequences of their work as well as to apply their

technical expertise. (pg. 33)

Like physical therapists, other allied health professionals practice in an environment where clinical problems can defy technical solutions. Students must master the skills of reflective thinking, and collaborative learning provides them with the opportunity to acquire those skills.

Foundations of Collaborative Learning

Whipple (1987) listed the following conditions as the basis for collaborative learning:

- The facilitator (a term preferred over others such as "instructor") and the learner are equal, active participants in the learning process.
- Knowledge is not transferable, but is created in the mind of each learner.
- The classroom becomes a community, and knowledge is based in the community. The concept of community refers primarily to individuals engaged in the pursuit of a common goal.

In addition, these requirements incorporate three essential elements of a collaborative learning environment. First, the environment must be nonthreatening and democratic. In a nonthreatening environment, participants can exchange ideas freely and share personal experiences to create knowledge. The facilitator, as an equal participant in this process, must surrender some control over the learning environment. The facilitator's main responsibility lies in trying to ensure that

there is an atmosphere of mutual respect and trust.

Brookfield (1986) noted that the most demanding task of the facilitator is to bring about a group culture in which adults can feel free to challenge one another, as well as feeling comfortable with being challenged. The collaborative learning environment can seem quite chaotic at times, and in today's diverse educational environment, competition and lack of respect for the views of others are difficult issues that the facilitator must address.

In addition, the role of the "facilitator" is quite different from that of the "teacher." Under collaborative learning, the facilitator no longer is the sole authority and transmitter of knowledge. MacGregor (1990) finds particularly challenging the process of reconciling responsibility of content coverage with a commitment to enabling students to become self-directed in their learning.

This process of reconciliation is of particular importance in healthcare professions, where employers expect new employees to possess a set of basic skills and where a test - such as a certification exam - must be passed for entry into the profession. In this context, specific content coverage is vital.

Finally, the learner must no longer be a simple notetaker, listener and observer; now he or she must contribute, solve problems and discuss. Some learners find it difficult to stop considering the text or the teacher as the sole authority. They simply are not familiar with this shift in attitude. This is a

basic paradox of adult learning - many adults are indeed self-directed and want to initiate their own learning, yet 12 years or more of passive learning have conditioned them to believe that true learning must be transmitted from an authority figure to a dependent learner.

Problem-Based Learning

The most prominent characteristic of collaborative learning is its emphasis on the acquisition of problem-solving skills. Only by learning to solve problems can students acquire the judgment and insight they need to become accomplished professionals.

Barrows and Tamblyn (1980) state that the rationale for problem-based learning in health education programs is medicine's emphasis on the application of knowledge. The basic question to be answered is "Why does this problem need to be solved?"

Problem-based learning results from the process of working toward the understanding or resolution of a problem. The steps involved in the reasoning processes used by experienced medical clinicians are teachable, and it makes sense that students in the health professions can learn how to problem-solve based on practitioner heuristics as well.

Barrows developed problem-based learning from his view of the physician's method of diagnosis. Physicians must build on the usually small amount of information given them when a patient first presents. In this first step, initial clues influence the direction and scope of the subsequent reasoning process.

In the second step, experienced physicians develop from two to five possible hypotheses. Students rarely realize that multiple hunches actually are preferred at this stage, feeling that the search for "one right answer" involves a narrow approach. The third step requires further data collection.

During the fourth step, the broad variety of data is encapsulated into a brief description of the patient's condition. Formal closure occurs in the fifth and final step, where this brief description is formalized into a consultation note, a progress note or problem-oriented record.

The results of studies using problem-based learning medicine are impressive. Shinn et al (1993) found that graduates of a problem-based curriculum were more up-to-date than graduates of a traditional curriculum. Dolmans et al (1993) found that although a problem-based curriculum covered only 64% of intended course content, students generated learning issues that were useful and relevant to course content. Norman and Schmidt (1992) believed that problem-based learning could bring about an increased retention of knowledge over long periods of time, important in fostering life-long learning.

In allied health, Bruhn (1992) noted that problem-based learning may be a method to prepare future professionals to adapt to change, learn how to reason critically, provide a holistic approach to health and attain integrated, cumulative learning. Developing a holistic approach to health, not previously discussed in this article, is extremely important since so many

of the allied health professions are technically oriented and use logical positivism as the model of health and disease. A holistic attitude toward health will help the practitioner understand wellness and illness as part of a continuum rather than as exclusive states of human beings.

Teaching problem-solving (including making students take responsibility for their own learning) gives students the skills they need to problem-solve and take responsibility as practitioners. These skills help them become risk-takers and innovators in the practice of their profession.

MacGregor (1990) noted that reform was one of the greatest advantages of collaborative learning. Educators can best hope to reform the profession through their students as future practitioners by focusing less on facts (what is) and more on the future (what should be). Collaborative learning allows educators to encourage students to view and work toward a preferred future as professionals rather than merely aligning themselves with practitioners who may have sacrificed their professionalism at the expense of expediency. This preferred future may include roles previously denied them, as in the example in the introductory section of this article on patient education and consent.

This also can work well for the practitioner, as Purtilo (1993) noted:

> Anyone who has had the opportunity to work with students is encouraged by the creative approaches you often take to

> old problems. Professionals who have been facing similar issues get bogged down in familiar ways of doing things or get discouraged because attempted solutions have not been successful in the past. (pg. 63)

The Third Component of Holistic Education for Allied Health

Kane (1994) has correctly both praised and critiqued problem-solving curricula as follows:

> As refreshing and important as these educational innovations (critical thinking and problem-solving) have been, the underlying model of knowledge has defined the knower as an information processor. The question arises: What differences are there between mechanical and human information processors? (pg.2)

Perhaps problem-based learning can be expanded to its full holistic potential by including connections between knowing and being; essentially by focusing on the whole person. Recent efforts in health professions curricula to include more ethical content can perhaps be seen as first steps toward such a goal.

A similar drive can be seen in the professions' move toward increasing attention to affective education, and the citing of "Values and Beliefs" as an outcomes measure in the Essentials for accreditation of allied health programs (although it is also dangerous in that it is not clear how changes in Values and Beliefs are to be measured). McKenna-Adler (1990) has also noted that the health professions need to again "care about caring." The largest barrier to this, she felt was our focus on equipment

instead of patients, providing a barrier that was both physical and emotional to caring. Too often caring is viewed simplistically in the health professions, as can be seen in Albert's (1989) recommendation that health professionals and institutions attempt to emulate fast-food restaurants to bring about greater "customer satisfaction." Indeed, as Dowd (1992a) found, high-tech does not bring about high-touch; it is instead a barrier to high touch healthcare that must be overcome.

Figure 1 shows how the allied health professions can perhaps become holistic in their approach to education by focusing on tasks, problem-solving, and the need for attention to values and beliefs. If we accept that health is part of a continuum, with illness on one extreme and wellness on another, then this model has the potential to address both illness and wellness. This model sees competence as triarchic in nature - skill, an understanding of problems and problem-solving, and a relationship between knowledge and being.

In radiography, Dowd (1992b) has described the role of the radiographer as part scientist and part humanist. In nursing, for example, it has long been recognized that there are expressive (or caring) aspects of the practitioners role, as well as instrumental aspects, to borrow Talcott Parsons (1955) delineation of the family. Nurses attempt to balance the instrumental or technical aspects of their roles with the need for caring, and view caring, in fact, as their primary role. For example, McConnell (1990) found that critical care nurses were

able to balance the operation of machinery - a necessary task in critical care - with the caring attributes needed for holistic care. This area remains ill-explored in the allied health professions.

Conclusion

This article has described the need for thinkers in allied health and a means instructors can use to bring about thinking practitioners - collaborative learning. Educators have the potential to develop positive change agents as well as competent practitioners in the allied health professions. These change agents, able to identify and solve problems related to patient care, will better society rather than provide a status quo as physician's handmaidens. However, also important - and perhaps a logical evolution in the professions - will be the development of strategies focusing on the "divine spark" within the individual, leading to caring as well as competent practitioners.

References

Albert, M. (1989). Developing a service-oriented health care culture. Hospital and Health Services Adminstration, 34, 167-183.

Barrows, H.S., & Tamblyn, R. (1980). Problem-based learning. New York: Springer Publishing Company.

Blayney, K.D., & Selker, L.G. (1992). Healthy america: practitioners for 2005. Final draft report of the Advisory Panel for allied health. Washington, DC: Pew Health Professions Commission.

Brookfield, S.D. (1986). Understanding and facilitating adult learning. San Francisco: Jossey-Bass.

Bruhn, J.G. (1992). Problem-based learning: an approach toward reforming allied health education. Journal of Allied Health, 21, 161-173.

Conway, J.B., & Buck, B.A. (1990). Radiologic technology and sonography: satisfaction with the profession and workforce. Sudbury, MA: Report of a Survey in Conjuction with The Summit on Manpower, American Healthcare Radiology Adminstrators.

Dewey, J. (1933). How we think: a restatement of the relation of reflective thinking to the educative process. Chicago: Henry Regnery.

Dolmans, D.H., Gijslaers, W.H., Schmidt, H.G., et al. (1993). Problem effectiveness in a course using problem-based learning. Academic Medicine, 68, 207-213.

Dowd, S.B. (1991a). Issues in patient consent. Radiology Management, 13(4), 40-44.

Dowd, S.B. (1991b). Teaching strategies to foster critical thinking. Radiologic Technology, 65, 374-378.

Dowd, S.B. (1992a). The evolving role of radiologic science professionals. Administrative Radiology, 11(7), 39-44.

Dowd, S.B. (1992b). The radiographer's role: part scientist, part humanist. Radiologic Technology, 63, 240-243.

Freire, P. (1970). Pedagogy of the oppressed. New York: Herder and Herder.

Ilich, I. (1970). Deschooling society. New York: Harper and Row.

Jensen, G., and Denton, B. (1991). Teaching physical therapy students to reflect: a suggestion for clinical education. Journal of Physical Therapy Education, 5, 33.

Kane, J. (1994). Editorial: being and knowing. Holistic Education Review, 7(2), 2-4.

LeCarré, J. (1968). A small town in Germany. New York: Coward-McCann, Inc.

McConnell, E.A. (1990). The impact of machines on the work of critical care nurses. Critical Care Nursing Quarterly, 12(4), 45-52.

MacGregor, J. (1990). Collaborative learning: shared inquiry as a process of reform. New Directions for Teaching and Learning, 42, 19-30.

McKenna-Adler, A. (1990). High technology: miracle or malady for patient care. Radiologic Technology, 61, 478-481.

Norman, G.R., Schmidt, H.G. (1992). The psychological basis of problem-based learning: a review of the evidence. Academic Medicine, 67, 557-565.

Parsons, T., & Bates, R.F. (1955) Family, Socialization, and Interaction Processes. Glencoe,IL: Free Press.

Purtilo, R. (1993). Ethical dimensions in the health professions. Philadelphia: WB Saunders.

Savitt, T.L., & Kopperl, S. (1982). Health care from early to modern times. In Boyles, M.V., Morgan, M.K., and McCaulley, M.H. (Eds.), The health professions. Philadelphia: WB Saunders. pp. 3-21.

Schoen, D.A. (1983). The reflective practitioner. New York: Basic Books.

Shinn, J.H., Haynes, R.B., Johnston, M.E. (1993). Effect of problem-based, self-directed undergraduate learning on life-long learning. Canadian Medical Association Journal, 148, 969-976.

Smith, R.M. (1982). Learning how to learn: applied theory for adults. Englewood Cliffs, NJ: Cambridge.

Verduin, J.R., Miller, H.G., & Greer, C.E. (1977). Adults teaching adults : principles and strategies. Austin, TX: Learning Concepts.

Wallace, D. (1985). John LeCarré: the dark side of organizations. Harvard Business Review, 85, 6-14.

Welch, R.L. (1980). The battered student syndrome. Radiologic Technology, 51, 613-616.

Whipple, W.R. (1987, October). Collaborative learning: recognizing it when we see it. AAHE Bulletin: 4-6

Figure 1 - A Model of Holistic Education for the Allied Health Professions

Component 1 - Effective Task Performance
Skill-Based Education and Training
Component 2 - Collaborative Learning
Problem-Based Learning and Critical Thinking
Component 3 - Knowledge and Being
Ethical Practice; Values and Beliefs; Caring