

## PROBLEM-BASED LEARNING: A CURRENT STATUS REPORT

by Sandra McCleaster RRT



Problem-Based Learning (PBL) has garnered a lot of attention in medical and allied health education. As a matter of fact, it's considered to be one of the most significant innovations in education over the past 20 years. Originally developed in the 60s as an approach to teach medical students, it's since been implemented in dental schools, Nursing, Physical Therapy, Occupational Therapy, and Respiratory Therapy programs. Not surprisingly, the current climate of health care demands that practitioners of every stripe improve their decision-making and problem-solving skills. As a result, all health care disciplines are declaring the need to get their students to "think" and many are looking to PBL to help accomplish that goal.

PBL represents a major departure from the way students traditionally learn in that it is a problem *first* approach. The students are presented with a "prob-

lem" *prior* to having acquired the knowledge necessary for the problem's solution. Its structure is that of a small group tutorial in which the students, acting as a team, "work through" a problem – the "problem" being an open-ended "real life" case study or health care scenario. (One fundamental principle underlying PBL is that the learning be based on experiences that reflect real-life clinical situations.) All of the knowledge necessary to solve the problem is then acquired while "working through" the problem.

According to literature, PBL has been approached in one of three ways: (1) a completely integrated curriculum which focuses all of the learning content around the health care scenarios; (2) a transitional curriculum which utilizes more traditional learning approaches in the beginning of the program with a then gradual shift to PBL or (3) a single course approach.

Whatever the approach, in PBL the traditional classroom is transformed from that of a lecture hall to one of collaborative activity among students who brainstorm in small groups. Here questions are raised, hypotheses are proposed, data are presented and learning issues are identified. All of this happens by the students themselves. Then the students go off on their own to search out answers. They return to the classroom, bringing with them resources they've found which would be of value to the group effort. They apply the newly acquired information to the "problem" and then move to the next step in their journey towards problem resolution.

So what becomes of the lecturer? Well, first up, the teacher writes the case problem that will illustrate the lesson objectives and reflect the real world issues. From that point on, the "sage on the stage" is not quite as instrumental as he or she used to be. Or perhaps I should say "is instrumental in a different way." In PBL the teacher becomes a "facilitator" or tutor, one whose job it is to effectively and selectively question and challenge, solely for the purpose of drawing out student discussion. The facilitator is not a provider of information. In fact, he or she must actually stifle the temptation to "teach" and focus on the students' learning process instead. The skillful facilitator just gently guides the students along and ultimately evaluates the quality of each student's contribution and performance.

The continuing evolution of the respiratory care profession requires that every practitioner demonstrate an advanced level of critical thinking.

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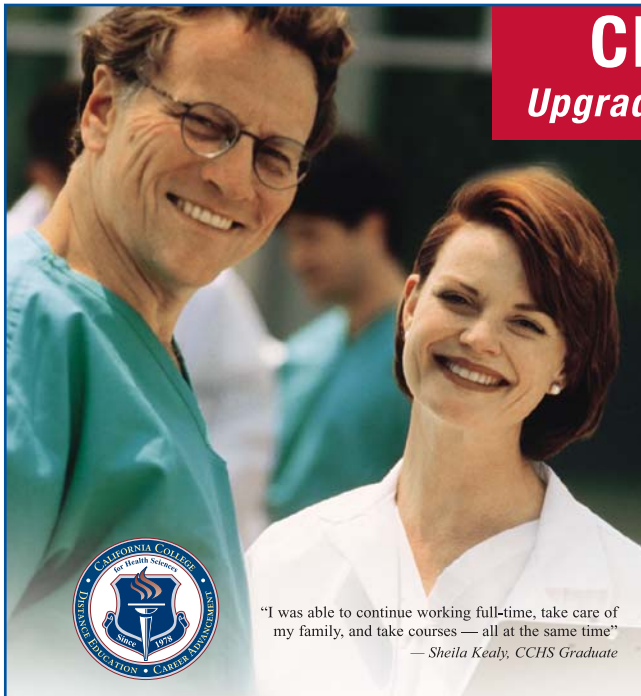
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**Problem Based Learning...** *Continued from page 42*

Respiratory therapists (like other allied health personnel) are expected to implement and modify patient care plans, apply established protocols, manage chronic diseases and function as patient educators. To meet the demands of best practice, critical thinking skills will have to become the norm. Proponents of the PBL approach say that it helps students to develop problem-solving and decision-making skills, both of which are part of the "critical thinking" construct. RC educators are always seeking new ways to improve the effectiveness of their programs. So, a few have made the leap to PBL. We hear that it's been implemented in several baccalaureate level respiratory schools throughout the country.

What I'm seeing from information that crosses my desk is that Problem Based Learning is alive and well, although its use does appear to be pretty much confined to baccalaureate and master's level programs. Clearly, PBL is a student-centered method of instruction, one in which learning is achieved by the student's own self inquiry. The process assumes that learners are active seekers of information rather than passive recipients of facts. The basic premise is that students take responsibility for their own learning. It seems intuitive that lower level students might require too much intervention by the facilitator to allow PBL to be successful. The overwhelming majority of respiratory therapy programs are at the two-year associates degree level. Although I've never tried PBL, I have a hard time imagining most of the students I've taught over the years as having enough self-direction to pull it off. (Perhaps my low expectation would turn out to be its own self-fulfilling prophecy.) Nonetheless, PBL may become one more impetus for requiring a bachelor degree as entry level for respiratory practitioners.

Specifically, the expected outcomes of PBL are that it develops reasoning skills, provides an appropriate clinical context for

learning, promotes decision-making and motivates students. The relatively recent introduction of PBL curricula into respiratory care education, the small number of PBL infused programs and the methods by which the pedagogy is being utilized make it difficult to study. It's even harder to analyze the educational outcomes of PBL across the other allied health disciplines. There are simply too many variables. There are different operational definitions, various approaches to implementation, whether it was the entire curricula or a single course, a wide range of study designs and different outcome criteria. How any two programs implement PBL is unlikely to be the same. Nor is there any control for how facilitators are trained, the exact strategies implemented or how students are evaluated. But suffice it to say in summary, that even without any solid scientific evidence to back its use, the one common belief at inception was that PBL would strengthen clinical reasoning and problem-solving skills.

The discussion was and continues to be very interesting. But has Problem Based Learning turned out to be all that it was cracked up to be? Of all of the recent innovations in education, I have to admit that PBL is the one that intrigues me most. More than twenty years have gone by. I'm curious to know if the hopes for PBL have actually come to fruition. So I've decided to do a review of the literature. I'll report my findings in the next issue of Focus.

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