

## ● Preface ■

Observe almost any elementary or middle school at the end of the school day and what you are likely to see is children exiting with seemingly endless energy from the schoolhouse doors. Behind those same doors are nearly exhausted teachers who are spent from providing direct instruction to children throughout much of the school day. Too often, and in many traditional teaching styles, the teacher is doing a disproportionate amount of the work. The learners are often passive, waiting for direction or waiting for the opportunity to respond to the teacher.

One common outcome is that children do not know what to do when confronted with any type of uncertainty. At the first moment of doubt, the student's hand flies into the air. Teachers then spend an inordinate amount of time and energy going from student to student to assist each in moving forward with the task at hand. This scene repeats itself far too often throughout the day, explaining why teachers become so weary by day's end while their students are still bursting with energy.

Problem-based learning (PBL) is a teaching and learning style that addresses the deficient elements of this scenario. In the PBL approach, students are presented with a loosely structured problem and work in small groups to arrive at some resolution to the problem. The teacher is no longer the focus of all that happens, although the teacher plays a crucial role in selecting the problem and facilitating the student groups. Rather, the students deter-

mine the kind of content learning required to move forward, the resources to use, and how new information is synthesized toward resolution. As a result, the students participate actively in their own learning, create their own direction as driven by the problem scenario, and continuously respond and react to each other as well as to the teacher and to the new content information they encounter.

Far from being a new technique, many of the characteristics and principles of PBL were described as early as 1916 by John Dewey. He was convinced that such an approach would create the highest level of learning among all children by tapping their interests, previous knowledge, and connection to their own world of meaning. One element of PBL is that the problem scenario exists within the real world of the learner, effectively eliminating the students' often-posed question, "Why do we need to know this?"

PBL enlarges the scope of learning opportunities for students at all levels of education. Though PBL originated in medical schools, there are various organized movements nationwide to integrate the methodology in K-12 classrooms. PBL is becoming well established as a valuable addition to traditional teaching methods and has moved beyond the "flavor-of-the-month" trend so often seen in educational reform attempts.

One example of a plan to use PBL in education reform is in the mission of the Center of Excellence for Research, Teaching, and Learning (CERTL) at Wake Forest University School of Medicine in Winston-Salem, North Carolina. Its mission includes providing intensive and continuous professional development for K-12 educators in PBL and sponsoring enrichment programs anchored in PBL activities for K-12 students. CERTL has also sponsored the development of PBL instructional materials by teachers for teachers and manages the dissemination of those materials for classroom use. Examples of these classroom materials are found throughout this book.

Another example of educators' extensive interest in PBL is reflected in the participation of more than 600 college and public school faculty at an international PBL 2000 conference hosted by Samford University in Birmingham, Alabama. Nine countries and 30 states were represented. Without question, at

least several thousand schools and colleges are interested in including PBL in their teaching repertoires. In the past 10 years, several hundred U.S. schools have included PBL in their repertoire, and several books on PBL in K-12 education and teacher training have been published (see References and Suggested Readings).

The American Association for Higher Education established an organization in 1990 called the Education Trust as a special project to encourage colleges and universities to support K-12 reform. One of their most recognized slogans, “College Begins in Kindergarten,” advances the responsibility of educators to provide continuity of educational experiences that best prepare the student for the next level. It is not too great a leap to see the benefit of implementing a pedagogy such as PBL, which can serve learners from kindergarten through college and beyond.

This book is designed to familiarize educators with the philosophy of PBL, to show its intended benefits, and to present many classroom examples. The focus is on the use of PBL in K-8 classrooms. Examples of PBL problem scenarios and the ways they are used by experienced PBL teachers are provided. The experiences of these PBL teachers will demonstrate the variety of possibilities for integrating PBL into current teaching strategies.

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