

# Problem-Based **LEARNING**

*for Teachers, Grades 6-12*



**Daniel L. Kain**

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# PROBLEM-BASED LEARNING FOR TEACHERS, GRADES 6–12

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### Library of Congress Cataloging-in-Publication Data

Kain, Daniel L.

Problem-based learning for teachers, grades 6–12 / Daniel L. Kain.

p. cm.

Includes bibliographical references and index.

ISBN 0-205-33920-4 (alk. paper)

1. Problem-based learning. 2. Problem-solving—Study and teaching (Secondary) I.  
Title.

LB1027.42 .K345 2003

373.139—dc21

2002074767

Printed in the United States of America

¥287-

10 9 8 7 6 5 4 3 2 1 07 06 05 04 03 02

This text may be unique among the texts you encounter in your professional education. For one thing, it's doubtful that you'll make your way through this text in the order it has been set out. It's more likely that your instructor will guide you to read part of a chapter, work with it, return to finish the chapter, and then maybe skip three chapters for your next work. That's the sort of flexibility I hope instructors will exercise and students will tolerate. But even more unusual, this is a textbook that, with a few exceptions, *doesn't have the answers in it*. I don't mean answers to practice problems, such as you find in the back of a math text. I mean **answers**. The whole purpose of this text is to provide you with a framework to learn how to raise questions about issues that are important to your work as a teacher, and then to help you learn how to go about finding those answers. If the book is successful, it will lead you to finding answers, but more importantly, to a disposition to continue learning throughout your professional life.

And one more thing. This book may lead you into some uncomfortable new territory, especially if you fit well with the way schools currently operate. It is my hope that your experience as a learner through the problems in this text will help you to see another way of organizing learning for the students with whom you work. Just as I am confident that good teachers can be trusted to seek answers, I am confident that your students, with a bit of guidance, can be trusted to seek answers. It strikes me that the essence of true learning is not only memorizing facts—which happens to us all as we use them—but learning how to raise questions and seek good answers.

## HOW TO USE THIS TEXT

Several features of this text demand a bit of explanation. You will find the book divided into three parts. Part I provides introductory information about problem-based learning (PBL). The first chapter explains what is generally meant by PBL, with an eye to the recent history of the model. Chapter 2 provides coaching for you on how to get the most out of your PBL experience.

Part II of the text holds the core of what this book is about. In this section, you will encounter a series of problems that are similar to what you might face as a classroom teacher. For instance, Chapter 9, "Raise Those Scores," leads you to investigate what might happen when a school district decides to devote all its energy to improving standardized test scores, regardless of the consequences to programs, personnel, or learning. You will be asked to assume the perspective of a relatively new teacher in one of two high schools in the district, the older and lower performing school. After examining what the superintendent is calling for in the



system, you will address the school board as part of a team to endorse, modify, or oppose the superintendent's test-prep plan.

Each chapter follows a similar pattern. A brief introduction sets the context for the general issue represented in the case. Although the particulars of each problem are built around unique situations, the issues at stake span across most schools. Following the introduction, each chapter lays out the particulars of the problem (for example, details about policy or the community) and the basic parameters of the solution you will be asked to come up with. These parameters will be somewhat loose, because—and *here's an asset of PBL*—you may define the problem in a manner significantly different from some of your colleagues. Where one group sees a problem with ineffective school leadership, another sees a problem with curricular organization or assessment.

A series of problem documents comes next in each chapter. These documents are modeled after the sorts of documents teachers encounter in their work. Some of the documents will look familiar to you, as in the case of a newspaper editorial that slams the work of educators. Other documents may seem strange, almost in need of translation. You will find, for example, a psychoeducational assessment of a student in the problem documents for Chapter 3. You may find that this assessment becomes clear after a couple of readings; you may find you need to seek some help from others to understand it. In either case, you will profit from wrestling with this sort of document in a safe learning environment rather than seeing such an assessment for the first time when you are contributing to a decision that will have a significant impact on a young person's future.

My intent for you is to stop reading the chapter after you have examined the problem documents. Work through the problem, propose a solution, discuss the experience with your peers, and then return to finish the chapter. Each chapter includes guides to reflection on some of the issues that may have been raised in your solving of the problems. I know that no group will raise all the questions I have included in reflection, and I know that nearly every group will raise questions I had not anticipated. The main focus of a problem may be determining whether to overturn a teacher's grade (Chapter 5), but multiple intelligences in the curriculum emerges as a key issue for one group while another group becomes fascinated with school district policies. Such is the nature of PBL. Indeed, if you were to come back to any given chapter after more experience as a teacher, you would see new issues emerge.

Each chapter concludes with a set of discussion questions and an annotated list of further readings. Clearly, no such list can be exhaustive. As I've worked with these problems and my students, they always find even better readings than the ones I've collected for them. You will, too, if you look. But I've given you a starting point.

As I indicated earlier, your instructor will guide you to the problems she or he finds most productive for your learning experience. The problems in Part II are not placed in a sequence that needs to be respected. If you do Chapter 7 before Chapter 6, that's fine. In fact, this text works best when it is seen as part of a whole program of teacher education (pre-service or graduate) rather than the textbook for a

single course. Some problems focus on student characteristics and needs, which suggests one course, while others focus on policy, school structures, or curriculum. Thus, using the text throughout a program reinforces the method of learning (PBL) while allowing you to explore many potential difficulties you may face in your career.

Part III concludes the book with two chapters. Although each problem chapter asks you to reflect on issues in the problem, the first chapter in Part III asks you to reflect more specifically on how you learn in this model and what you have learned about yourself. The final chapter guides you through the process of creating your own PBL unit. Some people think it is necessary to go through this process before participating in PBL activities, and they recommended that I put this chapter up front. Working with many students from middle school to graduate school, I have found that my students have the greatest success when I immerse them in several problems before I ask them to try to create problems of their own. For that reason, I have left the chapter at the end of the book. However, I encourage you to glance at this chapter whenever you feel it would be of most help. The chapter reveals how I create problems as a means to encourage you to create problems of your own. Ultimately, I am hoping that your experience with PBL will lead you to create such learning experiences for your students.

## PREVIEW

*You were thrilled to find out you had received a position teaching at a desirable local high school. This was your dream job—a good school, a great community, and a better-than-average teaching load for a newcomer in this established school. In fact, you were so pleased with the job that you spent a tremendous amount of your time over the summer preparing to be the best possible teacher. You organized all your units for the year, complete with several excellent projects, outside learning opportunities, numerous cooperative learning opportunities, and a thorough assessment plan.*

*On the first day of school, you decided to begin with a careful explanation of what your class was all about and the vision you had for the year. It went very well the first and second periods, but then came third period. You had barely begun the class when a counselor interrupted you and called you to the door. Standing in the hallway, she introduced you to a new student. You invited the student to take a seat, but the counselor held you back in the hall for a moment longer. She explained that the student had a condition called “Asperger’s syndrome.” She added that the student appeared to do fairly well in highly structured independent work, but fell apart in group situations.*

What should you do? What does it mean to have a student in class with Asperger’s syndrome? What is that? And what about all the plans you had made for an exciting classroom? Would those plans stand? Who might you turn to for help? What do other teachers do in such situations? What resources are there for you? Ultimately,

how will you adapt your plans, your activities, your vision of the classroom to this new reality? *Or should you?*

In determining how you would adapt to this situation, you are at the beginning of a problem-based learning experience. You are also at the edges of what it means to be a teacher—where you continually confront new situations with less information than you would like, situations that demand that you consider possibilities, inquire about facts, and come to decisions about what is the best solution. Welcome.

## ACKNOWLEDGMENTS

I wish to thank a number of people for their assistance with this project. Dr. Mary McLellan, Dr. Felicia McGinty, Dr. Minnie Andrews, and Russell Randall all reviewed problems or portions of problems included here. Dr. Pat Hays and Dr. Peggy Raines experimented with problems to assist in their refinement. Also, I appreciate the comments of the reviewers: Mavis Brown, University of Richmond; Fred Groves, University of Louisiana at Monroe; Robert Gryder, Arizona State University; Charles Pryor, University of Louisiana at Monroe; and Tracy Smith, Appalachian State University. Traci Mueller provided helpful editorial assistance. And above all, I wish to thank Kerry Olson Kain for her assistance throughout.

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# WHY PROBLEM-BASED LEARNING FOR FUTURE TEACHERS?

Teachers work. Teachers work hard to accomplish the complex goals they have for their students. Teachers work with a variety of pressures on them from all directions, and if anyone were to enter the profession with a naive notion that teachers' work is simply standing in front of a class and explaining ideas, the system would shock them sorely.

Of course, teachers do stand in front of the class to explain important ideas, and good teachers use a host of other teaching models and techniques to help their students succeed. The process of becoming an effective teacher involves a negotiation among all the responsibilities that await you when you face those first days in an empty classroom, contemplating the waves of young people passing through your door period after period. *Do I really have to make bulletin boards? How do I use this curriculum guide to make any meaningful learning go on? Where do I get the materials I need? What do you mean, I have to go to a department meeting? How can I handle all this grading of papers? How do I make a grade anyway? You mean some of these students don't even speak English? They can't read? Lunch duty—you're kidding!* It's overwhelming at times. And that's before you consider the committee work for arranging a school-wide motivation system and another committee to decide about adopting a textbook and another to examine a suggested change in the daily schedule and another to. . . . You get the idea.

Teachers' work goes well beyond making a lesson plan—though it always also involves making lesson plans that effectively help your students develop greater skills and understandings. This book is designed to help you at two levels on your journey to becoming the best teacher you can be. First, the book will guide you *as a learner* in a powerful means of acquiring knowledge while enhancing critical thinking and problem-solving skills: problem-based learning. Your experience as a learner will help you to empathize with your own students and provide you with insight about how to use the teaching/learning technique effectively. Second, the book will focus your attention on some of the complex issues that constitute teachers' work. You will have an opportunity to address some of the problems that may await you in your job—but in the relative safety of a community of learners.