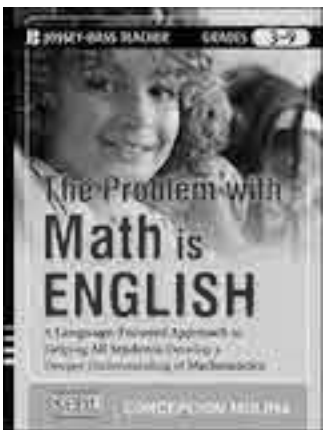


The Problem with Math is English

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| The Problem with Math is English | | |
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| Author: | Concepcion Molina (2012) | |
| Publisher: | San Francisco, CA: Jossey-Bass | |
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| 275 pages | 978-1-118-09570-6 | \$29.95 USD |



The Problem with Math is English describes itself on the cover as “A Language-Focused Approach to Helping All Students Develop a Deeper Understanding of Mathematics,” and that is exactly what it is. It does an excellent job of describing many of the problems with mathematical language in the classroom and then providing strategies to address those problems both within a single classroom and on a more systemic level. This book challenged me to think deeply about fundamental math concepts and caused me to reflect on my own language and practice in my classroom. I believe this book should be required reading for anyone involved in mathematics education.

Concepcion Molina grew up in the United States as a student for whom English was a second language. He describes the difficulties he encountered learning math because of challenges with mathematical language. His memories as a struggling math/language learner, coupled with his fourteen years of teaching experience in high school math classrooms, motivated him to write the book. Molina’s experiences make him a credible author because he has dealt with many of the problems and challenges of math education in the United States both as a student and a teacher.

The Problem with Math is English is written in a clear, organized way. The author provides specific examples throughout the book that challenge the reader to think deeply about the subject but are accessible to anyone. I appreciated that for every problem Molina posed, he provided a suggested solution. High-quality math problems

and tasks that could easily be adapted for classroom use are sprinkled throughout the chapters.

Molina's primary argument throughout the book is that many students (and, unfortunately, teachers) do not have a solid conceptual understanding of math, but that the use of precise mathematical language and symbolism can help solve this problem. He argues against shortcuts and unnecessary memory tricks, saying that both hinder students' ability to understand the "what" and "why" of mathematics. The book consists of a short introduction followed by twelve chapters that explore Molina's thesis.

The first three chapters ("The Problem with Math is English (and a Few Other Things)", "Why a Language Focus in Mathematics?" and "Language and Symbolism in Traditional Instruction") set the foundation for the rest of the book. In these chapters, Molina uses specific examples to explain why language is such an important aspect of mathematics and to also show how it is causing problems in current classrooms. He convincingly claims that the major problems with mathematical language in traditional classrooms fall into one of four categories: careless vocabulary, shortcuts, confusing logic and mismatched symbolism, and naked numbers. Examples of careless vocabulary include "the bigger half," "carry," "borrow," and "reduce." I realized that I use the last three words in my classroom on a regular basis without even thinking about it, and that they could be causing problems for my students.

Chapter Four ("So What Does Conceptual Understanding Look Like?") provides a bridge between the first three chapters and the rest of the book. In this chapter, Molina says that conceptual understanding depends on a students' ability to accurately define key terms and concepts, make connections between concepts, and interpret the language and symbolism of mathematics. Then, he provides five examples of important mathematics concepts and challenges the reader to come up with "simple yet deep definitions" for each of these concepts. This chapter began to make *me* think deeply about the mathematics.

Chapters Five through Nine each discuss in detail a specific math concept taught in elementary and middle grades. As a high school math teacher, I can attest to the fact that these concepts also appear as necessary prerequisite knowledge in my classroom and students who do not understand them struggle with higher-level concepts that we study. Molina breaks down the conceptual basis of the order of operations, multiplication, fractions and operations with them, and symbolism.

In each chapter, he challenges the reader to answer conceptual questions and solve problems. He provides strategies for teaching these concepts to students at various levels and emphasizes the importance of exploring concepts from different perspectives so that all students have the opportunity to gain a true understanding. These chapters both challenged me to think deeply about the subject matter and provided me with strategies that I can use in my classroom immediately. I have been teaching math for six years and still learned a lot from reading these chapters.

In Chapter Ten, Molina discusses ways to teach students to effectively solve word problems. He provides several instructional strategies and does an excellent job of describing them in detail. Each strategy is presented with actual tasks that a teacher

could take and use in his or her classroom. Chapter Eleven explores the idea that math is “all about relationships” and provides many examples of ways that teachers can leverage relationships among concepts to get students to think deeply about the subject matter. Molina is careful to say that he is not opposed to algorithms or procedural fluency in mathematics, but repeatedly emphasizes the importance of building conceptual understanding in students instead of simply providing them with a strategy without any explanation of why it works or where it came from.

Chapter Twelve is the conclusion of the book and a departure from previous chapters. In this chapter, Molina looks at the problem of mathematics language and content on a systemic level. He discusses issues both within and outside of teachers’ control, and suggests several possible educational reforms that could address the problems with mathematics education in the United States.

In K-12 US contexts, linguistic diversity has become something that teachers across content areas need to address in their daily instruction and long-term planning. This text provides math teachers in particular and more broadly content area teachers across the board focused attention to language and learning. It is, therefore, an excellent resource that many teachers could use to improve their practice—especially those working with English Language Learners. The book suggests that it applies to grades 3 through 9. I am a math teacher with students in grades 10, 11, and 12, and I feel as though I learned many things that will improve my teaching and benefit my students. Teachers in a teacher preparatory program could read this book as a part of their math methods course to help them begin to think deeply about math on a conceptual level before they ever set foot in a classroom. Current teachers like myself should have this book on their bookshelf to reference whenever they need ideas for teaching or revisiting some of the major foundational concepts in mathematics. I highly recommend *The Problem with Math is English* to anyone with a connection to mathematics education and, more broadly, any subject area teacher working for and with linguistic diversity.

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