

Preface

I am officially a lover of math! This is a very new stance for me, as I neither loved nor “got” math throughout my own school career. I remember doing well, in that my report card said I did, but I never felt comfortable with or sure of most of the procedures and tricks I supposedly learned. I don’t think I am alone in my experiences.

During my formal training to become a teacher, I was required to take a single math methods course. With that and my prior experience, I felt confident that I could at the very least replicate my own level of understanding and teach math successfully to my future students. I have come to realize what a naive thought this was.

While my math studies were limited, my language arts studies were bountiful. My practicum and student teaching experiences focused on reading and writing; my cooperating teachers shared wonderful instructional strategies with great enthusiasm for the subject matter. Upon graduation, I felt well prepared to help students become readers and writers but not as prepared to help them become mathematicians. To be fair, I didn’t know what I didn’t know about math.

As a mathematics consultant providing professional development for elementary teachers, I learned that my teacher preparation was similar to what many of my colleagues experienced. Many elementary teachers confess a lack of confidence and competence in teaching mathematics as intentionally and as thoroughly as they teach reading. Even now, as I consult with K–8 teachers and administrators, I relate strongly to the teacher who is confident in her or

his readiness to teach literacy but feels less prepared with strategies for math.

In 1983, the National Commission on Excellence in Education published the report *A Nation at Risk*, spurring conversations across the educational landscape. The questions were clear: “What should be done?” The answers were not as clear.

Researchers and educators began to focus on pedagogy and content in order to define effective practice. Much of this work was funded through the Elementary and Secondary Education Act (ESEA) enacted in 1965. The most significant sweeping education reform since then has been the No Child Left Behind Act of 2001 (NCLB), which is meant to increase accountability for student achievement results, expand flexibility and local control, and emphasize effective teaching methods in the areas of reading and math.

Since 1985, due to *A Nation at Risk*, educators, policy makers, the business community, and others have focused on developing a more comprehensive understanding of how reading is taught and learned. Researchers and organizations have worked to unpack what it means to be a good reader and articulated developmentally appropriate stages of reading to aid classroom teachers in creating materials and experiences that move readers to identified levels of proficiency. The outcome of this push has been that as a profession, we better understand the process and content of reading as well as the developmental learning path students take to become effective readers. Colleges and universities now provide prospective teachers with many opportunities to examine and practice effective teaching strategies and to broaden their understanding of the developmental aspects of reading.

So what about math? How can we begin to address this subject with the same rigor and commitment? If NCLB holds educators accountable for student achievement results in mathematics as well as reading, it makes sense that we consider what we’ve learned about reading.

I propose that we should build upon the years of work regarding literacy and make direct and purposeful connections to numeracy. This book is a beginning toward making those connections. By building on

what we've learned about literacy development over the past 20 years and extending it to numeracy, we increase the likelihood that teachers and students will become lifetime lovers, "getters," and users of mathematics. The question remains: How can we discover what it is we don't know about numeracy so that we can create experiences for students that enable them to become numerate?

We need to begin to build in elementary schools the capacity to uncover the developmental path students take to build competence and confidence in themselves as mathematicians. I propose that by comparing literacy instruction with mathematics instruction, we can help teachers develop their own confidence and competence and increase their capacity to learn and teach mathematics. It is my intent in this book to begin that process and start the conversations.