

# Foreword

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In our progression as teachers of mathematics, first comes good teaching. This includes learning how to build rapport with one's students and to motivate them by finding what is exciting and sharing it. It entails seeking ways to challenge, encourage, and support them. That is a powerful start, but, eventually, a good teacher is not content with attentive faces and good teaching evaluations. Eventually, a really good teacher realizes that many of his or her students are having difficulty with fundamental concepts that had been so clearly explained and seemingly firmly fixed in their minds but then somehow were lost.

At the next stage, we become reflective teachers. We try to understand what went wrong, how we might reach more of our students more effectively. We seek advice from more experienced colleagues, learn about other approaches to the teaching of a given topic, and experiment within our own classrooms. Reflective teachers are constantly learning about teaching, adjusting their courses, seeking to do even better at challenging, encouraging, and supporting their students.

There is a third stage: scholarly teaching. A reflective teacher might discover an approach to a lesson or a course that really works. They want to share it. A scholarly teacher seeks to back this up with evidence that it is working and has the potential to work for others. More than that, a scholarly teacher wants to understand *why* it works. No one else is going to pick up your insights and implement them precisely the way you did. A scholarly teacher tries to identify the critical core of what makes this approach work, so that those who would adopt it know what is essential and what can be adapted.

There is another motivation for scholarly teaching. It comes when nothing seems to work. Scholarly teaching can arise from the decision to confront pedagogical or curricular difficulties as an intellectual problem worthy of full attack. This involves studying what actually happens in the classroom and exploring why students are having trouble. Framing the appropriate question can involve serious scholarship. Often this requires work aimed at obtaining a deeper understanding of student difficulties. It includes a thorough search of the relevant literature to refine the question and to place it in the context of what is known. It requires careful design of the investigation with attention to how the data, either quantitative or qualitative, will be collected and analyzed.

When made public, the fruits of scholarly teaching constitute the Scholarship of Teaching and Learning (SoTL). This volume is about how to do it, but it also describes insights gained across a broad range of topics from the use of Reading Questions to the incorporation of Civic Engagement to grappling with the issue of exactly how Mathematics contributes to a Liberal Education. It has been edited by two of the experts in the field and includes fifteen accounts by practitioners who explain both how they have engaged in this scholarship and what they have learned. The result is a description of the process of scholarly teaching in multiple voices and from multiple perspectives. In their concluding Epilogue, the editors draw from all of their contributors to explain how this scholarship can help us avoid the common pathologies of teaching: *amnesia*—the tendency to forget what has been successful and what has not, *fantasia*—the lack of understanding of what actually transpires in our classrooms, and *inertia*—the reluctance to change that which is not working.

This book is filled with great ideas and insights. I borrowed the idea of a progression from good teaching to reflective teaching to scholarly teaching from the writers of Chapter 6. For those who might be uncertain about how SoTL differs

from Research in Undergraduate Mathematics Education (RUME), there are excellent discussions of the distinctions by the editors in Chapter 1 and by Pam Crawford in Chapter 9.

It is impossible to discuss the development of SoTL without acknowledging the role of Brian Winkel. I want to close this foreword with a personal note of gratitude. He was the founding editor of *PRIMUS*, one of the foremost venues for the publication of the results of scholarly teaching in mathematics. He established it in 1991, as SoTL was just beginning to emerge within the mathematical community, and guided it for twenty years, for most of that time without any editorial assistance. To qualify as scholarship, SoTL requires peer review. While there are opportunities for such peer review, including MAA's own journals, they are limited, and would be much more so without *PRIMUS*. Brian has been tireless in his encouragement of scholarly teaching and insistent on maintaining the standards of scholarship. All of us who aspire to scholarly teaching owe him a tremendous debt.