Foreword

Teachers in every age have sought the most useful and powerful tools to enhance their teaching. Teachers today are no different, but the tools available to them have never been so powerful or so complex. Consequently, every teacher today is faced with more decisions—and more difficult decisions—than any teachers in history. This situation is particularly trying for science, technology, engineering, and mathematics (STEM) teachers, for the professors who prepare them for the classroom, and for educational researchers. Reliable sources of solid information about the use of technology in STEM classrooms are not common, nor are they readily accessible. For example, a study on inquiry learning conducted in Thailand or an application of classroom visualization techniques carried out in Turkey might be very relevant for a science teacher in the United States, but it is not likely that the teacher would know about the project. On the other hand, another difficulty facing teachers, parents, school administrators, and education professors is the plethora of readily available information on the Internet that is neither sorted nor evaluated.

This book was developed to meet those needs. The editors have brought together reports of a wide variety of important research findings and examples of successful technology integration that work. As a result the book represents an authoritative and valuable aid for teachers, administrators, and professors involved in teacher education or educational research. Reading this book is like attending a conference in which you meet people with similar interests who have done pioneering work on the uses of technology in teaching and have reliable information and methods to share.

One thing that is very apparent when reading this book is the importance of multidisciplinary collaborations in technology integration. The authors of the chapters come from widely divergent fields, such as computer science, mathematics, geology, chemistry, education, and video game development. This book has the potential to be a stimulus for the development of additional collaborations among researchers and developers and between STEM teachers, professors, administrators, and parents. It represents a new beginning for many in the field, as it provides the guidance needed to approach technology integration with confidence.

Loretta Jones
University of Northern Colorado, USA