Foreword

This book brings together two of the most exciting and important areas of educational research being conducted today. The importance of the first few years of life to the cognitive and social development of a child cannot be overstated. In their book on school reform, *Disrupting Class*, Christensen, Horn, and Johnson, state (2008):

*And a rather stunning body of research is emerging that suggests that starting these reforms at kindergarten, let alone in elementary, middle, or high school, is far too late. By some estimates, 98 percent of education spending occurs after the basic intellectual capacities of children have been mostly determined. (p. 148)*

Equally intriguing for many researchers is the potential for well designed educational technologies to create customized opportunities that promote rich learning interactions. Christensen et al. argue that the maturity of the computer based learning industry will make “student-centric technology a reality” (p. 123). What this all means is that the ideas presented in this book will have an ever increasing chance at implementation and subsequent impact.

On a personal level, I am intrigued by the book as it provides an opportunity for me to reflect on the upbringing and development of my two young children. As an educational technology researcher, I frequently justify the acquisition of the latest gadgets as a professional expense. I then give them to my boys and watch how they interact with the different programs and devices. Many of them engender initial curiosity but few hold their continued interest. One of the common threads of the popular devices was the capacity to interact in some way with friends. For my generation, the killer app was email. For subsequent generations, it seems to be social networking sites.

The gaps between generations and the use of these contemporary technologies are large. While some of this is to be expected, the degree of the difference can present monumental challenges in supporting the development of our youth. For example, 73% of teens report using social networking sites compared to 40% of adults over 30 (Pew, 2009).

Unfortunately, it is very difficult to find information regarding the use of technology in the very young. When the teen use of social networking sites is further broken down the use of 12-13 year olds is 55% and 14-17 is 82%. Clearly the use decreases with younger students. However, it is just as clear that there is at least some use among the very young. Age restrictions for user accounts on services such as Facebook, Google, and MySpace limit the access to widely used tools. However, many children (my own included) are quickly finding alternatives through companies such as Disney and Nickelodeon. The chapters in this book will help build an understanding of the import (and possible danger) of these sites to the development of young children.
Another technology that will inevitably find its way into the hands of young children is the mobile phone. You do not need to travel far to hear adults lamenting about the widespread use of cell phones among the youth. In particular, the pervasiveness of text messaging seems to rankle many an adult. The picture of a group of teens at table texting away with negligible interaction in the group (at least verbally) can elicit emotions ranging from confusion to anger. Of course many of us have tempered our criticisms as we have begun to appreciate the positive attributes of these new communication technologies. Personally, I appreciate the ability to send short, typically logistical messages to others without the requisite formalities required of a phone call.

These devices are now as powerful as any personal computer built 10 years ago. They also have more intuitive and natural interfaces. With these devices, well designed applications that take advantage of the audio/video capture and interactions with others will lead to an explosion of learning opportunities for young children.

As you will see in the different chapters of this book, the effective use of technology is dependent upon how and why it is being used. As a former high school biology teacher, I was very interested in the potential of virtual dissection software. While the virtual tools had advantages over the real (albeit deceased) it was not clear cut. For example, while the computer diagrams made the organs easily identifiable, the real organism was much less obliged to make the necessary clues obvious.

As the technology advanced, the attributes of the well designed virtual systems helped close the gap between the real and the virtual. This tipped the balance towards the virtual dissection. The important lesson from this is that educators and researchers should be clear about the purpose and goals of any technology use. What is it that this technology provides or what problem does it solve?

This is what makes this book so valuable. General statements about the value of technology to learning are of little value without an understanding of the details of design and implementation. In this book, you will find details about the use of technology with specific goals in mind. This includes discussions of uses in learning mathematics, science, and with students with special needs. These descriptions are framed with more general investigations of the epistemological societal concerns.

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REFERENCES
