Foreword

25 years ago when my son was nine he and his friends would routinely go to the videogames room in the local mall and play games until their allowance ran out. I saw this as simply entertainment, nothing more, and considered it a waste of time and money, but it was how they wanted to spend what funds they had. Despite my son's frequent urging, I would not go into the noisy and somewhat haphazard videogame room but rather wait for them outside while fretting about his waste of his allowance. Often I suggested other more productive things he could do with his allowance, and he would counter by talking about the value of playing video games -- a point I never grasp. One day when I took him to the mall to play video games I went inside and watched. I had expected to find one boy playing one game mindlessly while exhausting his supply of quarters. What I found, however, was quite different. While one boy was manipulating the controls of the game there were several other boys hovered over it, all engaged in a constant conversation about the game. I was surprised with the sophistication and focus of what they were saying. They were sharing their thoughts on different strategies for playing the particular game and, when asked by the person playing the game, those hovering around would offer guidance about how to be more successful and advance to higher levels in the game. Vygotsky would be pleased!

As a person playing one of these games worked on a task that was very challenging to him those that were more capable provided the necessary scaffolding to help the player learn how to meet the challenge and advance. There was real depth and richness in their conversations as they talk about different strategies for game play. Often several of those who were watching would enter into a rather high level discussion with the player identifying and analyzing potential options for meeting the challenge posed by the game at that moment. They drew from their collective prior experiences to formulate and test hypotheses about the most effective approach to follow. When stumped it was not unusual for one of the boys to run over and grab somebody else who had more experience playing that game and get his suggestions for what to do next. This was rarely a specific suggestion of steps to follow in a 1-2-3-4 fashion. Rather it was usually a discussion of what the player should consider and how he should approach the game situation he confronted at that moment. When I left the videogame room that afternoon I had a very different appreciation of the influence of games on the young people who were playing them. I knew videogames were highly motivating, especially to young boys. I had assumed they may be improving some hand-eye coordination when playing video games but not much more. I had not realized the extent to which sophisticated, high-level thinking was going on while playing these videogames. Nor did I imagine the richness in the conversations among those watching and playing. It had not occurred to me that some of the lessons they were learning while playing video games had any value or relevance to anything other than a videogame. My view on children and games changed that afternoon when I got a better glimpse into what was going on cognitively as they played.

In the years since this experience I have spent more time watching children and adults play video and computer games. I have developed games and worked collaboratively with others in developing games. I have used games in teaching my graduate courses and have taught courses on game development. Like so many, I've seen the explosion in both the hardware and software technologies to support games and in

the research that documents the effectiveness of games on learning. In short, during the past 25 years the research, development and applications of gaming in education and training have grown at an astounding rate. Despite what I initially thought, there seems little doubt that games can be very effective in developing learning and motivation. Computer and video games are now routinely used in graduate and professional education as well as corporate and military training to teach sophisticated knowledge and skills. The issue with the use of games in education and training today is not do people learn from games, for that has been long-established. Rather the issue is what can be best taught through the use of games and how can we design games to ensure effective learning.

Professors Zemliansky and Wilcox have edited a comprehensive book that touches on three important themes for the use of games in education. The first section contains chapters that discuss theoretical considerations that underlie the design and use of games for educational purposes. These chapters explain the educational value of games, discuss a framework for studying virtual worlds, describe videogames as adaptive educational systems, discuss political and social factors, identify factors to consider when designing games for adults, and examine online collaboration in role-playing games. The second section contains several chapters that focus on designing computer games for education. These chapters include a discussion of the pedagogical approach for games, the use of activity theory in game design, using evidence-based principles in game design, how to include embedded assessments in games, and factors to consider in designing video games to support learning outcomes. The third section contains chapters describing the use of videogames in education. The chapters in this section document the application of games in a variety of educational settings from K-12 to military education and training. These chapters examine the use of commercial off-the-shelf videogames in education as well as games that were specifically designed for education.

This is a timely book given the emphasis on serious games at all levels in education. People interested in educational uses of games will find much of value to them in this book whether it's a discussion of pedagogical principles that underlie games, techniques for game development, factors to consider when using games, or a rich variety of examples demonstrating how games can be used in various subject matters and at different educational levels. The chapters are written by people on the frontlines describing their experiences with creating and using games for education and training. The book includes a rich blend of both theoretical and practical points of view with regards to educational games.

The doubts I had 25 years ago about the value of games and my difficulty in comprehending any educational benefits from playing games have long since dissipated. In light of following the long line of research studies and many years of practical experience, even a harsh critic of video and computer games as I was would have to acknowledge the substantial educational value that can come from the use of games. The question should not be whether to use educational games, for surely that has to be answered in the affirmative. Rather the question should be how can we design and use educational games to ensure outstanding benefits for our learners. This book by Professors Zemliansky and Wilcox focuses squarely on that question.

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