Foreword

In the early days of games and learning scholarship (1980s), academic discussion was largely dominated by essays and treatises on how and why video games had some cognitive benefits.[1] Prevailing popular opinion at the time was that video games were a waste of time and money or even potentially dangerous to developing young minds, like movies, comic books, television, and rock music were in their times. The worry over video games is perhaps no surprise, given their origins in smoke-filled pinball arcades and the fact that few adults played arcade games or video games. As Patricia Greenfield described in her seminal book *Mind and Media: The Effects of Television, Video Games, and Computers* a quarter century ago, it is impossible to understand video games from the outside; you have to play them to understand what is really going on.

These game players grew up and continued to play games in adulthood, carrying gameplay with them into academia, opening the door for consideration of video games as something more than entertainment, and the combined weight of many voices arguing for a reconsideration of this pop culture phenomenon began to wedge that door further open. Articles in the 1990s about the benefits of games began to appear with some regularity in the mainstream press. It seemed the world was ready to hear about games and learning and that we were poised for a generative period of empirical research and practical application of gaming technology in schools and business training.

But a funny thing happened on the way to the promised land. The success of our efforts in changing mainstream opinion created a strong market for publications about games. But research takes time to do (or, at least, to do right), and we were not well prepared for this shift. Having gotten used to the sound of our own voices calling for people to take games seriously, when they finally did, we were perhaps caught short. As any economist will tell you, when demand outstrips supply, you get a lot of people looking to fill that demand any way they can. Works by people who had never specifically studied games were quickly rushed to press. The canon of work on games prior to the mid-to-late 1990s was largely dominated by thought experiments and essays, which many new authors emulated.[2] Many of these authors and researchers entering the arena brought great ideas and unique perspectives from their own disciplines, yet because of differing terminology and academia's propensity for reading and researching only within one's own field, they failed to build on each other's work. And because video games belonged to so many fields, there was no clear academic "leader" for researchers from different fields to read as a basis for considering video games from within their own disciplines. This was an extremely generative period that produced thousands of publications on video games, culture, and learning. But with researchers not reading each other's work, and empirical research proceeding at the slow pace it does, what emerged was more a cacophony than a symphony.

In the last decade, research has begun to catch up to demand. Researchers have begun to sift through the volumes of work, looking for commonality and contradictions and using those to formulate the questions that are necessary to guide this field in the years to come. Scholars have brought their disciplinary rigor to synthesizing existing theory within the context of games and learning. From Mark Wolf and Bernard Perron's *Video Game Theory Reader(s)* in 2003 and 2009 to Jim Gee's seminal work on video games, learning, and literacy, to Ian Bogost's *Persuasive Games and Unit Operations*, to David Williamson-Shaffer's work on epistemic games, to Chris Crawford's work on game design, to the work of Katie Salen, David Michael and Sande Chen, to Joost Raessens, to Jesper Juul, to Kurt Squire, to Constance Steinkuehler, to John Kirriemuir and Angela McFarlane, to Noah Wardrip-Fruin and Pat Harrigan, the field has started to coalesce. This has been matched by rigorous efforts to answer empirically the questions we have only anecdotally addressed in the past. These researchers include Shawn Green and Daphne Bavalier, whose study on visual attention and video game play has definitively answered some of our most pressing questions, opened a whole new avenue of video game research, and set a standard for empirical research on such questions that should be extended to other areas of study of video games. These researchers also include Debbie Denise Reese and her colleagues on CyGaMEs, whose work on measuring flow serves as a model for what is needed in our field as we continue to shift our discussions of such key theories from the anecdotal to the empirical. Works like the meta-analyses of Jennifer and David Vogel, Kathryn Muse, and Michelle Wright are continuing the tradition set by earlier researchers like Josephine Randel, Barbara Morris, Douglas Wetzel, and Betty Whitehill. There are many other researchers who are doing good work in this field but are perhaps not as well known as those mentioned previously. Some of the authors of the chapters you are about to read may not be known to you yet, but combined, all of our voices will help shape the future of games and learning.

This book comes at a critical time for the field. The need for synthesis and evaluation of existing research remains one of our most significant challenges, both for understanding the past, for applying it to the design of learning for today, and for formulating the questions that will guide our field tomorrow. Every one of these chapters presents empirical research; a synthesis of existing research; new ideas, theories, and models; and, in many cases, all three. From practical applications to public education in areas such as science, math, physics, linguistics, reading, and legal education to research and design of serious games for underserved populations such as indigenous peoples, special needs education, and people with disabilities, to the now burgeoning field of biometric research in games and cognition, these chapters differ widely in their disciplinary perspectives. This interdisciplinary breadth is key to the success of our field, yet this can often come at the expense of cohesiveness and generalizability. In this case, thanks to the efforts of the authors and editor, the individual contributions remain accessible to all disciplines and make their connection to future research and practice clear. Together, they represent both the disciplinary and conceptual breadth of the work that is going on in the field of serious games research today.

A volume like this does not come about on its own. Its success is determined by the ability of the editor to survey the field, determine current and future needs, and shape a call for proposals that generates the depth and breadth needed to meet those needs. As proposals come in, s/he must evaluate them for the best fit and provide guidance to help them evolve into chapters that will form a chorus rather than a series of solos. As you read this book, I'm sure you will agree that such has been the case with this text.

This text comes at the start of yet another period of generative research in game-based learning, but this time one that is matched by synthesis and evaluation of prior and current research from a variety of disciplinary perspectives—one which knows how to both ask and answer the right questions AND how

to apply what we learn to the real-world problems we will face in the 21st century. Read these chapters carefully and with your mind open to different disciplinary perspectives. Seek to build on them as you add your voice to the chorus of researchers in game-based learning.

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ENDNOTES

[1] There were certainly notable exceptions, including such well-known names like Thomas Malone, Mark Lepper, and Patricia Greenfield, who were studying games from a cognitive and psychological perspective, but they and their colleagues were more the exception than the rule.

[2] Again, there were many good researchers producing strong work during this time (e.g. Lloyd Reiber; Yasmin Kafai; Henry Jenkins; Justine Cassel; Randel, Morris, Wetzel, and Whitehill; Seymour Papert; Brian Sutton-Smith; Margaret Gredler), but others who were not.