Preface

INTRODUCTION

It was late in the evening one November night in 1995. I was in Kraków, Poland, on a teaching assignment. My responsibilities also included setting up and maintaining their computer lab. So, naturally, I had recruited a group of students, teachers, and friends to come to the lab for an all-night Duke Nukem and Doom festival. Fast forward a few years. This time I was in a computer lab in East Lansing, Michigan, engaged in multi-player Outlaws. The time is now present, just a few weeks ago, and I am sitting at home playing Star Wars Legos with a friend on the Xbox 360. Although all three situations were unique, I had an eerily familiar conversation with a colleague after each session.

Why do you waste your time playing computer games? If you ask me, it's brain rot. There is nothing much good that can come out of such activities. The reason we have violence in the schools is because of kids playing games like that.

For those of us interested in electronic gaming, we have probably been presented with that mindset our entire lives. However, there has been a foundation of research building recently that has suggested that gaming might not be so bad after all. Kafai (1998) began writing about children designing games. Gee (2003) wrote about games in relation to literacy and language learning. Squire (2006) published in ER about games as designed experiences. Schaffer (2007) and others began publishing books on how kids learn with video games. And Rosser, Lynch, Cuddihy et al. (2007) promoted the idea that video games could make better surgeons.

Educators began paying attention to the idea that electronic games could be useful for teaching and learning. Conferences, public forum and initiatives (e.g., Serious Games), journals, and even open source game development tools began surfacing. A Pew Internet Study found that 70% of college students play video, computer, or online games (http://www.pewinternet.org/report_display.asp?r=93). MMOGChart (http://mmorpgchart.com/) reports over 12,000,000 active subscribers to massive-multi-player online role-playing games (MMORPG). The resulting notion is that if electronic gaming is becoming a natural and ubiquitous part of everyday life, can we and shouldn’t we investigate how it is and could be used for learning and teaching?

The simple answer is yes; simple answers, however, lead into very complex questions. Although there are a handful of very good books and research articles on the subject (some aforementioned), we do not yet have a strong research foundation on the affordances or constraints of educational gaming.

At the core of the matter, that is the purpose of this handbook. The first goal was to publish a collection of articles that would strengthen and build the foundation of research that exists on educational gaming.
THE NEED FOR A STRONGER RESEARCH FOUNDATION

I believe there are a number of reasons why such a handbook is only now emerging and why educational gaming lacks a strong research foundation. First, educational gaming is relatively new. When I told a retired academic about the research being completed in our gaming lab, he remarked: “you should review the work we did on that same subject 30 or 40 years ago.” Understandably gaming has been around for a very long time; it has quite an established history within educational discourse. More research needs to be done that examine the relationship between what we know about non-electronic and electronic educational gaming.

However, the fact of the matter is that research is lacking because we are a relatively young field. Not only is electronic gaming different than non-electronic gaming, but electronic gaming itself has advanced tremendously since the creation of Pong. My guess is that in five years, a revised version of this handbook would be filled with even more empirical research.

A second reason I believe educational gaming research lacks a stronger research foundation is because educational research is an arduous undertaking. Randomized, control-experimental grouping is difficult if not unethical in certain educational situations. And, educational gaming research does not make the research equation any easier. It is very difficult to monitor everything that is going on while a person is playing a game. Educational gaming research will require new methods, methodologies, and instruments to measure learning and teaching with gaming. We will get there; we just are not fully there yet.

A third, and by no means final, reason I believe educational gaming research is only in its infancy is because of its interdisciplinary nature. If you took a single university, you could probably imagine multiple departments where gaming might reside. Computer science, education, journalism, English, psychology, literature, anthropology, sociology, communication, advertising, and health are just some of the many disciplines represented in this handbook.

One does not necessarily need to become an expert in all of these areas in order to understand educational gaming. However, it is clear that experts from many fields are working on various parts of the same animal. There is an old story of a group of blind men who go and visit an elephant. Each touches a different part of the elephant to find out what it is like. Each leaves with a different perspective, thinking the elephant is a tree trunk, a snake, a spear, etc. Wikipedia has a short history of the tale and its debated origins (http://en.wikipedia.org/wiki/Blind_Men_and_an_Elephant). There are many morals to the story; one is that none alone would be able to fully describe an elephant. Only by working together could the group begin to get a more complete picture of an elephant.

The story of the elephant reminds us that this research effort will be strengthened by the degree to which we are able to interact with others. It is true that computer scientists have different interests in gaming for teaching and learning than media literacy researchers; cognitive psychologists may have a different approach than journalists. However, a continuous, cross-disciplinary conversation will provide shoulders by which to stand on, footing to further our research, practice, and policy efforts.

In order to promote continued cross-discipline conversation, the call for proposals for this book defined education very broadly. Education does refer to content area learning in K-12 education. It also refers to post-secondary education. However, education also means learning and teaching writ large. Police-training, foreign language education, health education, learning violence and addiction through gaming, game design, and developing an identity can all be found in the pages of this handbook. The purpose was not to try to encapsulate everything related to gaming; the second goal of this book was to help readers see the connections between multiple disciplines and fields of study interested in gaming.
THE ORGANIZATION OF THIS BOOK

The chapters in this book have been divided into eight key areas.

1. *A Review of Research on Educational Gaming*. This first section of the book includes chapters that have attempted to provide an overview or synthesis on gaming for learning and teaching. This includes meta-analyses as well as explorations into specific types and delivery mechanisms.

2. *Educational Gaming in K-12 or Teacher Education Contexts*. This section of the book focuses on chapters that are directly related to teaching and learning K-12 subject matter. It also includes chapters that are focused on in-service or pre-service teacher education.

3. *Educational Gaming in Other Learning Contexts*. Chapters in this section also focus on content area learning, but in non-K-12 or non-teacher education areas. Those areas include other post-secondary subjects, business and training with games, and health and human performance.

4. *Educational Gaming Research Tools and Methods*. Chapters in this section of the book focus on research studies or syntheses that provide discussion and direction related to the methods, methodologies, and tools used to study gaming in multiple contexts.

5. *The Psychological Impact of Educational Gaming (Part 1): Cognition, Learning, Play, and Identity*. Chapters in this section of the book focus on the psychological studies of gaming and game use. This first of two sections on psychological aspects focuses directly on concepts like cognition, learning, play, and identity.

6. *The Psychological Impact of Educational Gaming (Part 2): Violence, Emotion, Race, Gender, and Culture*. Chapters in this section of the book focus on the psychological studies of gaming and game use. This second of two sections on psychological aspects focuses on issues like violence, emotion, race, gender, and culture.

7. *Educational Game Design*. Chapters in this largest section of the book focus on game design. Authors in this section describe research studies and theoretical inquiries into the most productive ways to design gaming or environments for successful gaming.

8. *The Future of Educational Gaming*. In this final section of the book, I invited four authors to directly address the question of “what’s next?” This section of the book contains insight into what might be the short-term and long-term future of educational gaming.

9. *Appendix A: Glossary of Terms*. Each of the chapters in this book contains 7-10 key terms that have been defined by the authors of that chapter. Those key terms help readers with new concepts or to understand how the author(s) operationally defined terms key to their research. This first appendix focuses on gaming terminology. Many of these terms have also been operationally defined throughout this book. This glossary is not meant to be all encompassing, but rather to provide a start to the shared conversation about the jargon used in educational gaming research, policy, and practice.

10. *Appendix B: Selected Readings*. Many handbooks of research contain a section with additional chapters related to seminal readings in the field. It is obviously difficult to provide such a section for this handbook due to the relative recency of the work in Electronic Educational Gaming. However, this section contains readings of work in electronic gaming that have been published within the last few years. The purpose in including these chapters is to document part of our autobiographical past; it is to help readers see where we have come within the last few years of research in the field.
Each of the chapters in this book contains 7-10 key terms that have been defined by the authors of that chapter. Those key terms help readers with new concepts or to understand how the author(s) operationally defined terms key to their research. The book concludes with an appendix of terminology. Many of these terms have also been operationally defined throughout this book. This final glossary is not meant to be all encompassing, but rather to provide a start to the shared conversation about the jargon used in educational gaming research, policy, and practice.

CONCLUSION

Educational gaming research continues to be funded nationally and internationally. In addition to the interdisciplinary nature of this handbook, perhaps its strongest attribute is its international representation by reviewers and authors. Researchers who are doing work in this area will be intrigued and enlightened by the international and interdisciplinary nature of the collection. Students new to educational gaming will find research shoulders to stand on as well as questions to guide their future work. Teachers and practitioners will learn how the research can impact their classroom practice, regardless of whether classroom means K-12 or a corporate setting. Finally, policymakers and funding agencies will be able to learn more about how to help move educational gaming to the next level.

Respectfully,

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REFERENCES


