

# Introduction

*Karen Schrier*

*Marist College, Poughkeepsie, New York, U.S., Kschrier@gmail.com*

I am very excited to present the second volume in the book series, *Learning, Education & Games*, which examines the latest research and design techniques for creating and using games for learning. This is the second book in the series, which was written, edited, and reviewed by members of the Learning, Education & Games Special Interest Group (LEG SIG), a subset of the International Game Developers Association (IGDA).

The **first book** focused on curricular and design considerations, and **this second book** focuses on practical, technological, institutional, theoretical, and contextual challenges to consider when creating and implementing games for use in formal and informal educational settings.

To do this, we first look at the relevant issues with designing and using games in formal learning environments, classrooms, and school-based programs. This includes chapters on (1) using games in the classroom, (2) how to choose appropriate games for the classroom, (3) using gamification (or game-related techniques in non-game settings) in the classroom, (4) creating a playful curriculum, and (5) using games to support ADHD and autism spectrum students.

Next, we delve into the needs of community constituents and informal learning spaces, such as libraries and homeschools, and parents and policy-makers, who are also intricately involved in guiding and implementing educational practices and initiatives.

Finally, we investigate the platform, technological, and other logistical considerations associated with designing and using games in educational settings. We discuss the merits and drawbacks of using LARPs (live action role-playing) as a tool for learning, and we also detail the latest software, engines, tools, platforms, and programs for making games. This is particularly useful for educators who are considering the pros and cons of various development tools to teach their students, or for educational game developers thinking about options for creating their next game.

Although this book comes only a year after the first volume, new practices, questions, examples, and approaches have already begun to emerge, and the landscape of educational gaming and what it means to learn through games continues to evolve. New educational games continue to pop up in all shapes,

sizes, genres and styles, whether a coding MMO (*Screeps*), a puzzle platform about grief (*In Between*), or a motion tracking game about plate tectonics (*Geomoto*). People have begun to find innovative ways to expand inclusiveness and support more empathetic exchanges and interactions online, particularly with regard to game-related harassment and cyberbullying. Using large data sets to analyze and assess learning has become more widespread and applied to games—for better or worse. Live gaming on Twitch and YouTube and competitive eSports have become increasingly popular and may be untapped potentials for education. The MacArthur Foundation has spun off a new nonprofit called Collective Shift, which has created a new ecosystem of digital media and learning called LRNG. Newer platforms and technologies, such as the Oculus Rift, and DIY tools, such as littleBits, Arduino, and Raspberry Pi may grow the types of educational experiences we can have—and who has access to creating and participating in them.

And I have started to systematically question not only how we can become more skilled problem solvers through games, but how games themselves can actively help us solve real-world puzzles and create new knowledge about humanity and our world. These games have variably been called crowdsourcing games, applied problem solving games, and games with a purpose (*GWAP*), and they are on the cusp of upending what we know about learning and how we create new knowledge as a society. I write about them in a new book, *Knowledge Games* (Johns Hopkins University Press).

At the same time, the previous questions about educational games and education in general remain. How do we properly assess learning through games? Under what conditions are games effective in education? When are games appropriate for a particular learning context or goal? How do we balance fun and accuracy, facts and skills, content and context, and innovation and tradition in games? What are the potentials, limits, and pitfalls? To what extent can mainstream games, or games whose primary goal is not learning, help teach us? How do we make learning meaningful, significant, thick, rich, and relevant?

## How To Use This Book

The second volume of this series on learning and education games is divided into three different sections: classroom considerations, community considerations, and tool and platform considerations.

The eleven chapters are typically divided into a number of segments:

1. **Introduction**, which covers the major questions and terms related to the topic;
2. **Key Frameworks**, which introduces the primary theoretical frameworks related to the topic;
3. **Key Findings**, which relays the major recent findings in the field;
4. **Assessment Considerations**, which discusses specific assessment challenges or opportunities;
5. **Future Needs**, which lays out the open questions and gaps;
6. **Best Practices**, which summarizes the key takeaways and most effective techniques and findings.

Each chapter includes two to four **case studies** to illustrate the theories and findings in practice. You can read the case studies individually or in the context of the chapter. Every chapter also provides a list of useful **resources** and relevant further reading (and gaming!).

In the final section of this book, we also have created one appendix that provides additional resources and details about the latest available tools, engines, and software programs for game development.