# GAME ON

## Using Digital Games to Transform Teaching, Learning, and Assessment

RYAN L. **SCHAAF**
NICKY **MOHAN**

Hawker Brownlow
EDUCATION

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Introduction

# The Gamer in Us All

We—the authors of this book—are gamers at heart. We enjoy playing games alone or with our loved ones in our spare time. Despite living in different countries, we have converged to write about a subject that is near and dear to us. We are both seasoned educators who have a passion for helping teachers better prepare students in the age of disruptive innovation—an age in which technology is changing the way people work, collaborate, and learn on an almost daily basis.

We work tirelessly to help prepare students for their futures, not our generation's past. We understand that today's students are different. Continuous digital bombardment has caused students to learn, communicate, and play differently than the ways their parents and today's educators did. Perhaps the perfect medium to explore these differences between generations is interactive media, such as digital games. A *digital game* is any game played on a digital device.

Indeed, digital game–based learning and *gamification* (using game-like mechanics, elements, and thinking outside of the confines of a game) have the potential to disrupt education. However, they have tremendous potential for good as well. President Barack Obama even sees this potential for gaming in education as the White House hosted the National STEM Video Game Challenge in 2012 (Evans, 2011). The challenge, which has since become an annual event, channels the passion of middle and high school students to design their own games using computer programming and technology skills. Gaming is ubiquitous; it can no

longer be classified as trivial, or as the late, great author Ray Bradbury labeled them, a waste of time (Lang, 2012).

To understand the impact of gaming on young people, pluck any two out of the herd and study them in their natural habitat. Take, for example, Nicky's twenty-eight-year-old son, Sherwen. He is an avid gamer who plays for sheer enjoyment. His two favorite games are *Call of Duty: Modern Warfare 3* and *FIFA* (a soccer game series). He loves the idea that he can play these games at any time, whether alone or collaboratively with others either in the same room or halfway around the world. In these games, players are known by their usernames—the only discernible identifiers are the flags that represent the players' countries of origin. Over time, Sherwen has played with gamers from the United States, Canada, Australia, South Africa, Poland, Italy, and Brazil, to name a few.

Despite coming from different cultures, time zones, and socioeconomic backgrounds, Sherwen and the other players compete and collaborate for a shared purpose. During gameplay, individual prejudices, cultural backgrounds, age, gender, and religion are nonissues. In game settings, everyone is equal. At the same time, players bring their personal knowledge, backgrounds, and individualism to the game, weaving a powerful social fabric that one could only wish might be duplicated in the real world.

Ryan's eight-year-old son, Connor, loves to play digital games on his Nintendo Wii, Xbox 360, and tablet. He also enjoys reading books, watching movies, and listening to music. However, despite his love for all of those media, the interactive nature of video games captures his interest and engages him the most. It takes a great deal of time, strategy, and grit for him to achieve goals during gameplay. Perhaps as much as it does for him to win a footrace or earn a new belt in tae kwon do. Despite expending a great deal of mental energy and time, Connor has fun—the type of fun that keeps him coming back for more, even with the constant failure involved with playing most digital games.

The members of Sherwen's and Connor's generations are fundamentally different than previous ones. They use technology constantly to learn new information and communicate with one another in large global networks known as the *digital landscape*. Digital technologies have had a profound effect on multiple generations of people; throughout this book we refer to all these generations as the *digital generation*.

Sherwen and Connor are not the only members of the digital generation who are embracing gaming. Cordell Steiner, a third-grade student from Minnesota,

made a plea to teachers in a TEDx conference to use digital games in their classrooms for learning and assessment (Steiner, 2014). In this TEDx Talk, Cordell discusses how digital game–based learning provides *individualized learning*—learning focused specifically on a student's particular needs. He spotlights the attraction of digital games and the digital generation's willingness to embrace a medium in school that students enjoy at home with their friends and families. For example, when instruction calls for students to learn or review geometric angles, then they play a game that explores the concepts in a highly immersive and interactive manner with immediate feedback. Cordell also conveys the point that games allow players to fail and try again. In the traditional forms of classroom assessment, this type of failure is often "rewarded" with a low grade. If a player fails in a digital game, he or she clicks the reset button (for both the game and the learning process). In reality, digital games have a lot to teach our students and a great deal to teach educators about learning and assessment during the digital age (Schaaf, 2015).

## Inside This Book

This book will provide you with a sound introduction to game-based learning and the many strategies and tools at your disposal. If you are already familiar with game-based learning, you might decide to explore the table of contents for a chapter that piques your interest or is crucial to your professional development agenda. The game lists and strategies sections provide ideas you can implement in a classroom full of learners as soon as possible. This book provides many takeaways for using digital games or gamification in the classroom for teaching, learning, and assessment.

Chapter 1, "From Entertainment to Education 3.0," provides an overall picture of the gaming industry and gaming's potential in schools. Chapter 2, "The Arcade of Education," offers a common vocabulary—terms and definitions associated with gaming in education. Chapter 3, "Learning Theory and the Attributes of the Digital Generation," illustrates the underpinning for using digital game–based learning and gamification in the classroom from respected education theorists such as Jean Piaget, James Paul Gee, and Seymour Papert, to name a few. It also provides a learning progression that supports why games are such immersive constructs for learning and how they transcend so many other forms of content and information delivery. Lastly, it introduces the general learning habits of the digital generation and shows how gaming aligns with how modern-day students learn.

Chapter 4, "How to Find and Evaluate Digital Games for Teaching, Learning, and Assessment," highlights an extensive list of potential games and gaming platforms to use with learners and also provides strategies to find digital games for instruction, along with an evaluation checklist for critiquing potential games for instruction. Chapter 5, "Lesson Design Using Digital Games," provides instructional and assessment strategies to use with students as well as directions to create small lesson starters, known as *lesson sparks*, in the classroom. Chapter 6, "Digital Gaming and Assessment," shows how games can invigorate students and set them on a course for academic success by determining where students are now, where they want to go in the future, and the path to get there. Chapter 7, "The Nine I's of Modern Learning," invites readers to contemplate how the elements of digital game–based learning align with the nine essential skills for modern learning. Chapter 8, "Universal Design for Learning With Games," examines the Universal Design for Learning (UDL) framework and how using digital games and gamification fits within this structure for student learning. Chapter 9, "Beyond Linear Presentations," allows readers to become game designers. The chapter demonstrates how to repurpose a slideshow program, such as Microsoft PowerPoint, to create a short-form digital game tailored to student needs. Chapter 10, "Takeaways," offers takeaways—powerful and extensive resources and tools.

Educators, school and instructional leaders, curriculum designers, staff developers, trainers, and parents will all witness the power of gaming in this helpful, pragmatic guide for how to find and use digital games and gameful design in the modern-day classroom.