

Learning Online with Games, Simulations, and Virtual Worlds

Strategies for Online Instruction



Clark **ALDRICH**

JOSSEY-BASS GUIDES
TO ONLINE TEACHING AND LEARNING

Learning Online with
Games, Simulations, and
Virtual Worlds

**STRATEGIES FOR ONLINE
INSTRUCTION**

Clark Aldrich

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P R E F A C E

A five-year-old girl visits a swimming pool at the beginning of the summer and is terrified. But with some playful challenges from her father, she works up her nerve to dip her toe in the water. She has entered a new world.

Slowly, she begins playing games on the pool stairs. She gets excited and engaged. She begins to splash with other children. She imagines the water is the ocean, and she lives in an undersea world, where her father is the king. In playing, she is learning how this new world works. The pool then becomes a comfortable environment for her and her friends to spend time.

Finally, she begins to deliberately challenge herself. It is not enough to be in the shallow end; she wants to learn to swim to the deep end. With the coaching of her father, she pushes toward the dark and cold, experimenting with strokes, overcoming the mouthfuls of water and finding the odd band-aid.

She gets frustrated and then excited with each new skill. It takes time, and progress is uneven. Two steps forward may be followed by one step back. But by the end of the summer, she has become a competent swimmer and could swim to safety in many different environments—other pools as well as lakes and beaches. She has learned skills that she will never forget.

This book contains the guidelines for instructors who will be selecting, planning, and implementing curricula using games, simulations, and virtual worlds in a distributed classroom environment (that is, where students are not face to

face with each other or the instructor). This material focuses on both the front-loaded prep activities necessary for successful use and the instructor's role in a "learning to do" (as opposed to a "learning to know") course.

As with the pool example, it also takes into account the growing realization that these highly interactive virtual environments, while often successfully used separately, are increasingly and inexorably nested. If you squint hard enough, you can see that every game takes place in some type of virtual world, and every educational simulation is a type of rigorous game.

Further, instructors and students push the boundaries and functionality among all three. This means from a process perspective (as described in the subsequent chapters) there is overlap: the same techniques for increasing familiarity, giving instructions, or providing technical support with a virtual world are also relevant for games and simulations.

Here are the sections in more detail:

- *Part I* overviews some of the highest-level reasons for thinking about, caring about, and driving the use of virtual worlds, games, and simulations (to which we will collectively refer as *Highly Interactive Virtual Environments* or HIVEs). It describes the similarities and differences among these environments and explains the shift in mindset that highly interactive virtual environments require from both the students and the instructor.
- *Part II* details how to choose and use a HIVE, including how to identify an opportunity, select an environment or program, and use an environment effectively in your online instruction. It also offers strategies and techniques to assess learning outcomes.
- *Part III* covers larger issues of using a HIVE in your instruction, including advice on how to politically build a case for HIVE use to decision makers in one's organization.
- *The Epilogue* suggests that distributed education may drive the growth and use of HIVEs more than face-to-face classes in the near future.

My goal in writing this book is to be more practical than theoretical (although all the sections have theoretical edges to them). Using games, simulations, and virtual worlds can be a transforming experience for both the instructor and the student, so I want to be as specific as possible. But for those who are interested in the intellectual frameworks, there should be plenty of grist for those mills as well.

This text is also aimed at helping instructors meet the specific challenges and opportunities of highly interactive learning in distributed environments; it is not designed for face-to-face environments (also known as “real” or “meat” environments). However, I hope this book will provide some interesting insights and processes for them as well, especially about the different stages of deployment and the philosophies that are critical in each.

This book also talks quite a bit about developing a “culture of interactivity.” We are living in an age when computer games are becoming more popular than movies, and social networking is becoming more compelling than magazines. Recalibrating the role of the instructor and balancing the student’s need for certification, challenge, and accountability on one hand and for involvement and control on the other have become both more possible and more necessary.

Despite the image of complex educational simulations and vast virtual worlds, the content and philosophies in this book will not assume that students have a top-of-the-line computer and blazingly high-speed network access. Still, some will. So it will be my job to help you select the right solutions across technological, cultural, and content appropriateness from the different approaches presented here. Finally, I have used a very specific tone in this book that I have tried to match to the content area. As much as possible, it is written to be accessible and at times humorous. It is worth noting your own reactions to the approach, as it will line up with others’ reactions to immersive learning and other game-like environments in general.

THE AUTHOR

As a designer, Clark Aldrich has created some of the most effective, celebrated, and innovative “soft skills” simulations of the past decade, including SimuLearn’s Virtual Leader global product line (for which he was awarded a patent, is the most popular leadership simulation in the world, and was the winner of the “best online training product of the year”). SimuLearn’s Virtual Leader (and the updated vLeader) is currently used in hundreds of corporations, universities, and military installations and has been translated into multiple foreign languages.

Most recently, he was the lead designer for a series of simulations for the Center for Army Leadership, which used a variety of short mini-game approaches to teach influencing skills.

Aldrich also advises many of the world’s most influential organizations (private and government), and serves on over a dozen boards, including with the NSA, magazines, and universities, on educational and business analysis projects.

He is the author of four books, *Simulations and the Future of Learning* (Wiley, 2004), *Learning By Doing* (Wiley, 2005), *The Complete Guide to Simulations and Serious Games - How the Most Valuable Content Will Be Created In the Age Beyond Gutenberg to Google* (Wiley, 2009) and *Learning Online with Games, Simulations, and Virtual Worlds* (Wiley, 2009); and columnist and analyst. .

His work has been featured in hundreds of sources, including CBS, the *New York Times*, *Wall Street Journal*, CNN, NPR, CNET, Business 2.0, *BusinessWeek*, *U.S. News and World Reports*, and, among other distinctions, he has been called an “industry guru” by Fortune Magazine.

Aldrich was the founder and former director of research for Gartner’s e-learning coverage. He graduated from Brown University with a degree in cognitive science, and earlier in his career worked on special projects for Xerox’s executive team.



PART ONE

What Are Games, Simulations, and Virtual Worlds Really, and Why Should I Care?



Understanding Highly Interactive Virtual Environments

Imagine that you get a phone call at two in the morning, and you are told that you won a thousand dollars. But there is a catch. You have to spend it all before sunrise.

I don't have a profound analogy here, but wasn't it easy to imagine that situation? Humans effortlessly create virtual situations all the time. In our minds, we simulate shaking hands with the person we are scheduled to meet, and we plan different things we might say. Runners imagine the track and plan where to conserve energy and where to spend it. As we drive into a gas station, some of us visualize on what side our car's gas tank is. When we are given a new job, we plan for it by playing out scenarios, trying to understand our goals and foresee our potential actions and our barriers.

We also use virtual environments to do experiments. Einstein made progress towards his second theory of relativity by imagining he was riding a light beam. Programmers review steps of code in the shower, trying to figure out unintended consequences.

Schools, naturally, have long used highly interactive environments, if only a tad virtual. In classrooms, teachers use short games to introduce difficult topics, and mock trials have been the staple at law schools for decades. On sports fields, student athletes practice dozens of hours for every hour spent in a game.