

# How to Read and Use This Fieldbook

## Introduction

This is not a book designed to be read once and then put on a bookshelf. This book should be dog eared, underlined, scribbled on, marked up, with doodles in the margins and a broken spine. This is meant to be a book for you to use while designing, developing, and creating interactive learning experiences like simulations, games, and gamification experiences. This book brings together experts from a variety of backgrounds and experiences creating games, gamifying learning experiences, and designing and implementing simulations. The book is designed to provide first-hand accounts of the creation of engaging learning experiences. It is a follow-up to *The Gamification of Learning and Instruction*—it is a fieldbook that can be used for implementing the ideas from *The Gamification of Learning and Instruction*.

The goal is to provide insights into the work these experts have done, the battles they have fought, and the results they have achieved from creating engaging instruction. Use these insights, lessons learned, and creative ideas to craft your own engaging, interactive learning experiences. There is an entire section of case studies so you can gain insights into what others have done and apply some of their lessons learned to your situation.

## Key Definition

Before we examine the content of the book and how to use it to create great games, gamification, and simulations, the first order of business is to coin a term we can use to continually discuss games, gamification, and simulation. As shorthand to make it easier to read the words “games, gamification, and simulations,” we are going to lump all three of these items together in a term called “interactive learning event” or ILE. The term will be used to discuss games, gamification, and simulation.

## Why This Book?

This book is needed because ILEs are becoming commonplace. Learning and development (L&D) professionals need to have the skills and knowledge to intelligently create effective games, gamification, and simulations. The time for wondering whether ILEs are appropriate for learning has passed; the time to implement these solutions is now. These experiences are occurring everywhere and L&D professionals need to use these tools in our toolkits to help our fellow employees, customers, and students learn.

It's not hard to see that games, gamification, and simulations are everywhere. From the game you play at the grocery store to win free food to fast-food games to children playing games in school to corporate and military leadership games. Games, gamification, and simulations abound. There are many reasons for this influx into common culture, and the workplace and halls of education are not immune. It is not unreasonable to believe that within a short amount of time, the idea of games and gamification will be common throughout all workplaces and educational institutions and an acceptable practice.

Not convinced? Here is an analogy that might help. About twenty years ago, just the thought of wearing a pair of khakis and a polo shirt to a meeting with a potential client would get you fired. If you didn't wear a suit, you were not serious about business. The workplace has evolved and continues to change at a rapid pace. For example, it used to be that the only acceptable business phone was a BlackBerry. Any other phone wasn't for serious business. Today, all sorts of smart phones are used within a business context and the BlackBerry has lost its grip on mobile corporate communications.

There are several reasons why games, gamification, and simulations are becoming more common:

- Games are easier to build than ever before. There are software programs that make building a simple game easy and quick.
- The average age of a person who plays video games is getting older. As these older people obtain positions of power within organizations, the stigma of games in corporations, the government, academic environments, and in non-profits is waning.
- More colleges and universities are graduating people who have created games in game development programs, and not all of these folks are finding jobs in the game industry so they are working for software development firms and bringing game sensibilities with them into business software design.
- Games are available on smart phones. Now that many people carry a smart phone, they are also carrying games with them. This allows them to play games anywhere and has helped to fuel interest in games, especially games that can be played across distances on a smart phone such as "Words with Friends."

So the thought that games will eventually become an integrated part of work and everyday activities is not crazy. Things are changing; games, gamification, and game-like computer interfaces are becoming common.

While it may be easy to accept the idea that games are everywhere, there is still reluctance to the concept of gamification, but it, too, is expanding into our everyday lives. The reduction in the cost of making sensors and the

ability to miniaturize them are making it possible to track all kinds of activities that were previously difficult to track. This tracking of almost everything means that scores or values can be placed on everyday activities.

One such example is the Nike+ FuelBand.<sup>1</sup> The FuelBand is a watch worn on a person's wrist capable of tracking movement through a built-in accelerometer. The accelerometer allows the watch to track daily activities, including running, walking, basketball, and dancing. It tracks each step taken and calories burned. You can set goals, known as NikeFuel goals. Then, as you move throughout the day, you can check your progress against your goal.

At the end of the day, you can synchronize your data with an app and then view your activity history, track your progress, and even connect with friends. This allows you to see your activity patterns and perhaps modify your behaviors. As you progress, you receive achievements and rewards. You can get on a streak, exceed your goal, and hit milestones all on the way to your personal fitness objectives.

Another example in the health field is the creation of a gamified inhaler called the T-Haler.<sup>2</sup> The T-Haler is an inhaler that is fitted with WiFi connectivity and a number of sensors. The device senses how it's being used and gives real-time feedback on a computer screen to the person using the inhaler. The feedback is related to three elements of using an inhaler: shaking, actuation (pumping the inhaler), and inhalation. These steps need to be done properly to ensure the right amount of medicine is provided to the user each time he or she uses the inhaler.

During the process, the user of the inhaler watches a ball roll across what looks like a tic-tac-toe board filled with different failure points on the computer screen. The virtual ball rolls down a hole in the middle if done correctly and to one of the failure points if done incorrectly. The makers of the T-Haler indicate that the proper use of the inhaler can go from 20 to 60 percent by using the T-Haler and playing the computer game to get it right.<sup>3</sup> The feedback provided by the interactions is what the learner is focusing on.

Another example on the horizon is a product called Google Glass or, more commonly, Google Glasses.<sup>4</sup> The idea is simple. A heads-up display (HUD) like the ones seen in video games is projected onto a person's glasses. The HUD places a layer of data and information overtop of reality—as you look through your glasses, information is displayed in front of you. The layer can

be data about a particular location, directions guiding you through a foreign city, or information about the buildings you are passing as you walk down the street. At the airport the status of your flight could be displayed as you walk to your gate or the weather in your destination city can be provided right in front of your eyes as you deplane.

This is not unlike the heads-up display now available on different cars where the turn-by-turn directions are projected onto the windshield to guide you on your way. Cars are incorporating other features that make them more gamified. Several brands of hybrid vehicles provide graphical feedback on how efficient the driver is being during trips. This graphical feedback provides information to the driver, who can then modify her driving habits in response to the feedback.

The concept of adding game elements on top of reality in such items as Google Glasses as well as the Nike+ FuelBand are part of a growing collection of consumer products that are becoming commonplace. These items will drive the need to add gamification elements to learning environments. Imagine a repairman being able to see the overlay of the insides of a gas stove as he begins to look for leaks or repair a malfunction. Or a person on the manufacturing floor receiving instant information about the location of a needed, but late, piece of raw material. Or a salesperson pulling up information about a product as she describes the features and functionality to a potential client.

## What's Coming in This Book

To help you create instruction in this changing environment, this book is divided into five sections. The first section is “Getting Started.” In this section, we outline why it's so important to focus on creating engaging, interactive instruction. We highlight the similarities among games, simulations, and gamification. We also provide an overview of the entire process for building an interactive learning event. This is to make it easier to read and less redundant. There are many similarities among the three common approaches of games, simulations, and gamification.

Therefore, we decided to write in general about the topic for most of the book and then highlight the differences specific to each type of ILE in the design section. Most of the differences, we discovered, were in the design

of the ILE. The other areas such as audience analysis, identification of learning objectives, technological considerations, brainstorming, and implementation were all closely aligned. Throughout the book, you will see special callouts or information specific to one of the three types of ILEs when appropriate.

The second section of the book, provides a variety of content we call “Basic Elements.” These topics cut across all ILEs and are critically important to developing your own ILE. The topics include such items as identifying what you are trying to teach and managing the data you collect from learners interfacing with the ILE.

This section contains information on the basic elements shared by all three ILEs and the importance of the narrative context or story. Regardless of what type of learning you are developing, a clear understanding of how to wrap instruction around compelling narrative is of critical importance. It is the context of the learning. Also important is learning how to make a case for a game, gamification, or simulation.

Finally, this section finishes with a discussion on how to manage a large scale game development project. While the case study given is focused on game development, the same process can be used to create a large scale gamification or simulation project.

The third section of the book is focused on “Design Considerations” required to create an ILE. In fact, the design aspect of creating an ILE is the most critical aspect of the creation. The technological obstacles are usually secondary to the need for a good, effective design. The section starts with some ideas for brainstorming. How does one brainstorm for a game or a simulation? What elements should be considered when thinking about a gamification solution? These types of questions are addressed in this section.

The bulk of this section is the division of the chapters. One chapter each describes how to design a gamification experience, a simulation, and an instructional game. In this section, you’ll learn from experts who have designed these types of learning experiences. You will learn what they consider when designing each type of ILE and how they design them to help people learn.

The fourth section covers the “Development” of ILEs. The section begins with a discussion of the various tools that are used for creating ILEs and helps to define a method for choosing which tools are best for which type of

development, ranging from templates all the way to programming the ILE from scratch.

Storyboarding is another subject covered in this section. A process is provided that outlines the methods of storyboarding, with illustrations and examples. A quick discussion of the virtues of storyboarding to obtain the proper flow of an ILE is also provided.

“Case Studies” is the final section of this book. We have included a variety of case studies from a number of different fields to show creation and implementation can be done in almost any industry with a variety of content. We’ve included live face-to-face classroom simulations, a full scale online game to teach negotiation skills, a mobile learning gamification example, and even a board game. The idea is to provide you with a range of examples of how to apply the concepts and ideas from the book. Others have done this; the pioneering days are almost over, and now is the time to implement proven techniques. The final section of the book shows what others have done.

## The Best Way to Read This Book

In the spirit of learning by doing and from experience, this book is focused on providing worksheets, examples, samples, tables, and instructions for creating your own ILE. This book can be used as a primer or introductory text to introduce the topic of designing instructional games, gamification, and simulation, but it is primarily designed as a practical fieldbook to help teams in the midst of creating games, gamification, and simulation projects. It is the companion to the bestselling book *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*.

If you are reading this book as a primer, it makes most sense to read the chapters in chronological order. Pause after each part to ensure you understand the key arguments, research findings, and suggestions of each chapter and then move on to the next part. Understand there will be overlap in content and some ideas that don’t always 100 percent agree with each other. The reason is because several experts teamed to write this book and purposefully crafted it so that different perspectives and ideas were presented. The book is

not going to read like a novel; instead, it will be more like a reference guide to help you with the process of creating your own ILE.

If you are reading this book as part of a class, a good idea would be to actually design and, if capabilities exist, create an ILE following the worksheets and suggestions of the book. You will learn a great deal creating even a small ILE.

Another approach to consider might be to cover the contents of the book as a team or group, as shown in Figure 1.1. Divide your team, department, or faculty into reading clubs and read a chapter each week. If you are geographically dispersed, do it as a virtual book club using Twitter or Facebook. Then, once a week, the group should get together and discuss the salient and thought-provoking points. How can we help the organization design meaningful games for learning? What guidelines should we establish for the gamification of learning in our organization? How can we put this data about the effectiveness of these game elements in the hands of upper management? How do we implement these ideas? Is a simulation needed in our environment?

This group approach will spark discussion, provide insightful solutions, and guide you to develop your own methods of applying the ideas and concepts to your own organization or classroom. It will also begin discussions about the future of learning within your organization that may not have occurred otherwise. These conversations, even when slightly off-topic, will be valuable in strengthening your organization in terms of maximizing the knowledge needed for the design, development, and delivery of games, gamification, and simulations for learning with the organization.

If you are in the midst of designing a project, we encourage you to become intimately familiar with the key takeaways at the end of every chapter and the worksheets and models provided to move the process forward. Work with your peers on the design team to ensure that you understand each of these takeaways and what they mean to the creation of games, gamification, and simulations for learning and instruction.

Graduate and undergraduate students will particularly find this book of interest as a foundation to building dissertations, creating games, gamification, and simulations, and pursuing lines of research, especially as a generation that has grown up playing video games.



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**Figure 1.1** Reading the Book as a Team to Generate Discussions and New Ideas

Image reprinted with permission of the artist, Kristin Bittner.



## Continuing the Discussion

A topic like this does not remain static; it is always moving as technology and our understanding of games, gamification, and simulations to foster learning and collaboration continues to grow. In an effort to continue the dialogue in real-time and to make real progress in helping others we have created a Facebook page for easy collaboration, posting of games, gamification, and simulations, and interactions among readers. The page is <https://www.facebook.com/gamificationLI>.

Enjoy the book; we hope you have as much fun reading it as we did writing it.

<http://www.pbookshop.com>