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Ideas into Practice

KARL M. KAPP LUCAS BLAIR RICH MESCH





# Contents

Website Contents

Figures, Tables, and Exhibits

**Foreword** 

About the Authors

About the Contributors

<u>Chapter 1: How to Read and Use This</u> <u>Fieldbook</u>

Introduction Key Definition Why This Book? What's Coming in This Book The Best Way to Read This Book Continuing the Discussion

# Section I: Getting Started

<u>Chapter 2: Why Games, Gamification, and</u> <u>Simulations for Learning?</u>

<u>Chapter Questions</u> <u>Introduction</u> <u>Wrong Reasons</u> <u>Right Reasons</u> <u>Questions to Ponder</u> <u>Ensuring Success</u> <u>Key Takeaways</u>

<u>Chapter 3: Game, Gamification, or</u> <u>Simulation: Which Is Best, When, Why?</u>

<u>Chapter Questions</u> <u>Introduction</u> <u>Games</u> <u>Gamification</u> <u>Simulations</u> <u>Selecting the Right ILE</u> <u>Key Takeaways</u>

Chapter 4: Critical Questions for Creating an Interactive Learning Event

<u>Chapter Questions</u> <u>Introduction</u> <u>Foundational Questions</u> <u>Practical Questions</u> <u>Scoring and Assessment Questions</u> <u>Game Play Questions</u> <u>Key Takeaways</u>

# Section II: Basic Elements

**Chapter 5: Foundational Elements** 

<u>Chapter Questions</u> <u>Introduction</u> <u>Feedback</u> <u>Constructs</u> <u>Challenge</u> <u>Story</u> <u>Key Takeaways</u>

<u>Chapter 6: The Importance of</u> <u>Narrative/Context/Story</u>

> <u>Chapter Questions</u> <u>Introduction</u> <u>Overview of Storytelling</u> <u>Elements of Storytelling</u> <u>How Is Storytelling Different in ILEs?</u> <u>The Goal-Based Scenario</u> <u>The Role of Reality</u> <u>The Predictable Unexpected</u> <u>Architecting Your Story</u> <u>Key Takeaways</u>

### Chapter 7: Making the Case

<u>Chapter Questions</u> <u>Introduction</u> <u>Research-Based Justification</u> <u>Return on Investment Justification</u> <u>1. Identify the Need</u> <u>2. Determine Sponsor's Goals</u> <u>3. Decide How to Measure</u> 4. Dollarize the Measurements
5. Conduct a Baseline Assessment
6. Implement and Deliver the Game, Gamification, or Simulation
7. Gather Post-Learning Data and Data from the Control Group
8. Determine the Return
Stealth Justification
Key Takeaways

## Chapter 8: Managing the Process

<u>Chapter Questions</u> <u>Introduction</u> <u>The Process Required to Produce an Educational</u> <u>Game</u> <u>Tips for a First-Time Producer</u> <u>Key Takeaways</u>

# Section III: Design Considerations

# Chapter 9: Where to Find Ideas

Chapter Questions Introduction Play Games Brainstorming Techniques Shazam Session Sharing Output Key Takeaways Chapter 10: Games

<u>Chapter Questions</u> <u>Introduction</u> <u>Designing a Game From Start to Finish</u> <u>Wireframing</u> <u>One-Page Design</u> <u>Paper Prototyping</u> <u>Storyboards</u> <u>Design Document</u> <u>Key Takeaways</u>

### **Chapter 11: Gamification**

<u>Chapter Questions</u> <u>Introduction</u> <u>Controversial Nature of Gamification</u> <u>Structural Gamification</u> <u>Avoid Learners Gaming the System</u> <u>Content Gamification</u> <u>Key Takeaways</u>

### **Chapter 12: Simulations**

<u>Chapter Questions</u> <u>Introduction</u> <u>Why Simulations Are Valuable for Learning</u> <u>Designing a Simulation</u> <u>The Illusion of Complexity</u> <u>Using Flowcharts</u> <u>Storytelling for Simulations</u> <u>Creating Decisions for Simulations</u> <u>Creating Simulation Feedback</u> <u>Simulation Design Tool</u> <u>Key Takeaways</u>

# Section IV: Development

### Chapter 13: Technology Tools

<u>Chapter Questions</u> <u>Introduction</u> <u>Developing an Interactive Learning Experience</u> <u>Development Terms</u> <u>Template-Based Authoring Tools/Arcade-Style</u> <u>Games</u> <u>Game Engines</u> <u>Other Development Tools</u> <u>Mobile Games</u> <u>Adding Leaderboards or Badges</u> Key Takeaways

### Chapter 14: Storyboarding

<u>Chapter Questions</u> <u>Introduction</u> <u>Why Storyboarding Is Important</u> <u>The Storyboarding Process</u> <u>Storyboarding in Action</u> <u>Storyboarding Simulations</u> <u>Storyboarding Techniques</u> <u>Key Takeaways</u>

# Section V: Case Studies

## Chapter 15: The Knowledge Guru

Background <u>The Challenge</u> <u>Why Game or Gamification?</u> <u>Making the Case</u> <u>The Solution</u> <u>The Benefits and Results</u> <u>Lessons Learned</u>

# Chapter 16: A Board Game: MPE

Background The Challenge Why a Game? Making the Case The Solution The Benefits The Results Lessons Learned

<u>Chapter 17: Mobile Gamification: Mobile</u> <u>Cricket U</u>

Background The Challenge Why Gamification? Making the Case The Solution The Benefits Lessons Learned

## <u>Chapter 18: Serious Game: Learning to</u> <u>Negotiate</u>

Background The Challenge Why a Game? The Solution The Benefits The Results Lessons Learned

## <u>Chapter 19: Structural Gamification for</u> <u>On-Boarding Employees</u>

Background The Challenge Why Gamification? Making the Case The Solution The Results Summary Lessons Learned

### **Chapter 20: Medical Simulation**

Background The Challenge Why a Simulation? Making the Case The Solution <u>The Results</u> <u>Lessons Learned</u>

<u>Chapter 21: Financial Game-Based</u> <u>Learning</u>

Background The Challenge Why a Game? Making the Case The Solution The Benefits The Results Lessons Learned

### <u>Chapter 22: Sales Training Game: An</u> <u>Avaya Case</u>

Background Why a Game-Based Simulation? The Solution Benefits and Results Lessons Learned

<u>Glossary</u>

<u>Index</u>

About ASTD

# Praise for *The Gamification of Learning and Instruction Fieldbook*

"A wonderfully useful hands-on, step-by-step guide to the creation of games, gamification and simulation experiences. This book is a must read and conveys clear and precise instructions for designing and developing learning that will creatively engage members of the current and future workforce. If you are in the field of learning and development and want to create meaningful instruction, this book is for you!"

-Jeanne Meister, founding partner, Future Workplace and coauthor of *The 2020 Workplace* 

"It's refreshing when an author turns a 'what' book into a 'how' book. For anyone who is trying to work their way through creating meaningful and effective learning games, this book is a godsend. The questions help you focus, the examples help you visualize, and the worksheets help you succeed."

--Dawn Adams Miller, Learning & Development Solutions Group, Cisco

"Bridging the digital media landscape between the worlds of learning and games, gamification and simulations, this is the perfect guide book both for instructional designers and game developers. Whether you're looking for ways to bring gaming elements to training, or if you're seeking solid instructional principles for games, this book by Kapp, Blair, and Mesch is an essential companion in your journey."

-Rick Raymer, game designer

"A long overdue book that gives corporate trainers and managers lots of facts and inspirations for how games and gamification can not only make training more engaging, but the content so much more sticky than traditional approaches."

-Mario Herger, CEO of Enterprise-Gamification.com

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# The Gamification of Learning and Instruction Fieldbook

**Ideas into Practice** 

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Karl Kapp

To my wife Nancy and my two wonderful sons—Nathan and Nick.

Lucas Blair

To my wife Danielle, for tolerating my obsession with making and playing games,

and to my parents Donald and Cheryl, for always letting me play "just five more

minutes."

**Rich Mesch** 

To my friend Eve, for her unwavering support and constant encouragement to think big.

# **Website Contents**

The following materials are available for download from <u>www.wiley.com/go/kappfieldbook</u>

password: professional

#### **Chapter Two**

Case Study: Deloitte Leadership Academy Getting Started Worksheet

#### **Chapter Three**

Games and Blooms Taxonomy

Games and Type of Knowledge

Games and the Affective Domain

Games and Psychomotor Skills

#### **Chapter Four**

**Critical Questions** 

#### **Chapter Six**

Story Design Worksheet

#### **Chapter Eight**

Game Building Model

Sample Game Design Template

#### **Chapter Ten**

Best Practices Pitfalls to Avoid Pro-Social Gaming

#### Chapter Eleven

PepBoys Case Study

# Figures, Tables, and Exhibits

Figure 1.1.	Reading the Book as a Team to Generate Discussions and New Ideas
Figure 2.1.	Deloitte Leadership Academy Profile Screen
Figure 3.1.	Determining Which ILE to Use Can Be Difficult
Figure 3.2.	Exploring the Jungle by Swinging Through the
<u>Figure 4.1</u> .	Flowcharting Can Help Answer Some of the Questions a Team Might Have
<u>Figure 6.1</u> .	Converting a Written Story into an ILE Is Not as Easy as It Would Seem
<u>Figure 7.1</u> .	Researcher Hard at Work Studying Games for Learning
Figure 8.1.	Production Functions at Course Games
Figure 8.2.	A Model for Managing a Game Development Project
Figure 8.3.	Survival Master Game Launch Flowboard
Figure 8.4.	Survival Master Initial Architecture Game Database Model
Figure 8.5.	SMTE Prototype Online Multiplayer Game Architecture, circa 2008
<u>Figure 8.6</u> .	Survival Master Alpha LAN Multiplayer Game Architecture, circa 2011
<u>Figure 8.7</u> .	Survival Master Beta Game Enterprise Architecture, circa 2013
<u>Figure 8.8</u> .	Modified Scrum Production Model at Course Games
<u>Figure 8.9</u> .	Master Schedule Gantt and Sprint Burndown Chart Example
<u>Figure 8.10</u> .	Level Design Map for Survival Master Snowshoe Race Concept
<u>Figure 8.11</u> .	Proof of Concept Screenshot for Survival Master Snowshoe Race Level
<u>Figure 8.12</u> .	Beta Screenshots for Survival Master Snowshoe Race Level
<u>Figure 9.1</u> .	Moving from Idea to Finished Game, Gamification, or Simulation
<u>Figure 9.2</u> .	Creating a Mind Map for a Sales-Oriented Interactive Learning Experience
Figure 9.3.	Creating an Affinity Diagram on the Wall of the Conference Room
<u>Figure 9.4</u> .	Playtest a Prototype Before Full-Scale

	Development
Figure 9.5.	One-Page Design Document
Figure 10.1.	Personas Are Helpful for Keeping Your
<u> </u>	Audience in Mind
<u>Figure 10.2</u> .	Tower Defense Type Game (Garden Defense)
Figure 10.3.	2-D Stealth Platformer (Devil's Advocate)
Figure 10.4.	Arcade Game Bullseye Trainer
Figure 10.5.	Sample Wireframe for a Mobile Device Game
<u>Figure 10.6</u> .	One-Page Design Created on a Whiteboard
<u>Figure 10.7</u> .	Finished Game Screen Based on the One-Page Design Document
<u>Figure 10.8</u> .	Using a Paper Prototype to Test Gameplay
Figure 10.9.	Storyboard Example from Devil's Advocate
Figure 10.10.	Storyboard Showing a Number of Thoughts
	from the Devil's Advocate Game
<u>Figure 11.1</u> .	First Day with the Star Chart—Secret to Parenthood
<u>Figure 11.2</u> .	Second Week with the Star Chart—Giving Out Candy Bars to Get Kids to Brush Teeth
Figure 11.3.	Collecting Badges
Figure 12.1.	Practicing Takeoffs and Safe Landings with a
	Flight Simulator
<u>Figure 12.2</u> .	Flowcharts Can Become Exponentially Complex
Figure 12.3.	Sample Simulation Flowchart
<u>Figure 13.1</u> .	Chart of Customization vs. Learning Curve
<u>Figure 13.2</u> .	Mobile Games Are Everywhere
<u>Figure 14.1</u> .	Pencil Sketch of a Storyboard
<u>Figure 14.2</u> .	More Formalized Storyboard
<u>Figure 14.3</u> .	Simulation Storyboard
<u>Figure 15.1</u> .	The Knowledge Guru Login Screen
<u>Figure 15.2</u> .	Narrative Screen Explaining How the Game Works
<u>Figure 15.3</u> .	The Mountains in the Game Are Topics to Cover
Figure 15.4.	Selecting a Path for Ascension Up the Mountain
Figure 15.5.	Players Can See Their Scores as They Answer Questions
Figure 15.6.	Incorrect Answers Receive Immediate Feedback
Figure 15.7.	Score Is Reset to Zero
Figure 15.8.	Detailed Data Is Provided for Each Learner
<u>Figure 16.1</u> .	Game Board for MPE Succeed

<u>Figure 16.2</u> .	Input Screen for the Web Portion of the Game
<u>Figure 16.3</u> .	Summary of Changes Screen for MPE Succeed
<u>Figure 16.4</u> .	Results Screen
<u>Figure 17.1</u> .	Custom User Experience with "My Games" Feature Enabled
<u>Figure 17.2</u> .	Game Profile Screen Used to Define Game Mechanics/Dynamics
<u>Figure 17.3</u> .	Game Mechanics/Dynamics Accessed via Online Web Browser
<u>Figure 17.4</u> .	Managing Formal and Informal Learning Elements Within a Game Profile
<u>Figure 17.5</u> .	Individual, Group, and Challenge-Based Leader Boards
<u>Figure 17.6</u> .	Defined Trophies and Badges for Selected Game Profile
<u>Figure 17.7</u> .	Game Selections, Game Details, and a Launched Assignment
<u>Figure 17.8</u> .	Post-Game Survey Results
<u>Figure 17.9</u> .	Online Cricket University Game Portal Interface (Planned)
<u>Figure 18.1</u> .	Practicing Versus Listening
<u>Figure 18.2</u> .	Main Character, Carlo Vecchio, Looking Out Over Venice
<u>Figure 18.3</u> .	Choosing a Negotiation Strategy
<u>Figure 18.4</u> .	Mentor Helping Carlo at Each Level of the Game
<u>Figure 18.5</u> .	Progress Can Be Monitored Throughout the Game
<u>Figure 18.6</u> .	Learners Receive Detailed Feedback
<u>Figure 19.1</u> .	Screen Captures from Gamification
<u>Figure 19.2</u> .	Gamification of Course
<u>Figure 20.1</u> .	The Introcan Safety <sup>®</sup> IV Catheter
<u>Figure 20.2</u> .	Advanced Four-Vein Venipuncture Task Training Aid and the SIMULUTION Adult Injection Training Arm
Figure 20.3.	Introcan Safety IV Catheter Print-Based Self- Study Learning Module
<u>Figure 20.4</u> .	Introcan Safety IV Catheter In-Service Education Video
<u>Figure 20.5</u> .	Introcan Safety IV Catheter In-Service Education Animation
<u>Figure 20.6</u> .	Limbs and Things Advanced Venipuncture Arm with Adjustable Venous Pressure "Attached" to a Live Patient, Providing Students with the

	Sense (and Stress) That They Are Performing the Venipuncture Procedure on a Real Patient
<u>Figure 20.7</u> .	The Laerdal Haptic (Tactile Feedback) Virtual IV Trainer
<u>Figure 20.8</u> .	Introcan Safety IV Catheter Simulated Presentations Are Videotaped and Those Demonstrating Best Practices Are Shared with Field Force Peers Who Were Not Present During the Simulated Performance
<u>Figure 21.1</u> .	Using an Island Theme for the Game
<u>Figure 21.2</u> .	Progressing on the Game Board
<u>Figure 21.3</u> .	Sample Game Question
<u>Figure 21.4</u> .	Calculator to Help Determine Savings Goals
<u>Figure 22.1</u> .	The Main Protagonist Provides a Mission to the Learner
<u>Figure 22.2</u> .	You Have to Be on Your Toes at All Times in This Learning Game
<u>Figure 22.3</u> .	Helping Cindy Conduct a Sales Call with the Client Through "Surveillance Video"
Figure 22.4.	AvayaLive Engage Is Used as Part of the Overall Game Because of the Flexibility to Update Content

#### Tables

<u>Table</u>	Important Questions to Ponder Before Beginning Development
<u>Table</u> <u>3.1</u> .	Original and Revised Cognitive Taxonomy
<u>Table</u> <u>3.2</u> .	Bloom's Revised Taxonomy Matched with Game Activities
<u>Table</u> <u>3.3</u> .	Affective Domain and Associated Definitions
<u>Table</u> 3.4.	Psychomotor Domain and Associated Definitions
<u>Table</u> 3.5.	Matching Content to Game Type
<u>Table</u> 3.6.	Matching the Learning Outcomes with the Right ILE
<u>Table</u> 4.1.	Matching the Need to the Learning Outcome and Providing Evidence of the Result
<u>Table</u> 4.2.	Identifying the Learners
<u>Table</u> 4.3.	An Example of a Completed Table
Table	Summary of the "Winning" and "Losing" Conditions

<u>4.4</u> .	
<u>Table</u> 4. <u>5</u> .	Critical Questions for ILE Design
<u>Table</u> 6.1.	Storytelling Template for Games, Gamification, and Simulations
Table 7.1.	Game Elements and Research Supporting the Use of Those Elements for Learning
<u>Table</u> 7.2.	Selection Criteria for Justifying a Game, Gamification, or Simulation
<u>Table</u> 7.3.	Questions Related to Performance Metrics for Games, Gamification, and Simulations
<u>Table</u> 7.4.	Examples of Dollarizing Performance
Table 7 5	Two-Group Comparison Study Results
<u>Table</u> 7.6.	Single-Group Pre/Post-Test Results
<u>Table</u> 7 7	Costs and Benefits Calculations
<u>Table</u> 8 1	Pre-Production Planning Checklist
<u>Table</u> 8.2.	Pre-Production Documentation Checklist
<u>Table</u> 8.3.	Learning Objectives for Educational Game
<u>Table</u> 8.4.	ISD to LDD Checklist
<u>Table</u> 9.1.	Elements of a Design Document
<u>Table</u> <u>11.1</u> . <u>Table</u> <u>19.1</u> .	Use a Chart Like This to Keep Track of the Characters You Add to the Learning Module Social Interaction Numbers

### Exhibits

Exhibit Level Design Concept, Snowshoe Race8.1.Exhibit Different Types of Decisions in a Simulation12.1.

# Foreword

Serious games have never enjoyed the limelight that simulations seem to garner. The immediate legitimacy and the perceived value of simulations have allowed training and learning organizations to leverage them as powerful tools that have made a difference. But not their red headed step-cousin. Not games. Games were for home. For nights and weekends and the occasional elicit break time diversion. Today I announce that this dark era has finally reached the beginning of the end. Games are no longer a dirty word at the office. We can shout the word "GAME" from the rooftop and we won't be ostracized by our colleagues. (We might be stared at, we might be deemed a little nuts, but we won't be ostracized.) People are starting to get it. We are starting to get it. And it's about time.

When people ask me what I do, I've always struggled to find the answer. I don't fancy myself a game designer, although I have designed games. I don't consider myself an instructional designer, although that is a role I certainly play on occasion. I don't know how to code, draw, or animate. I am an unlikely success in the games industry.

Since you've asked, what I do is probably not all that different from what you do. I try to find ways to make learning better through the use of games. Now, when I say better, I don't mean faster, or cheaper, or funner (yes, I realize that's not really a word, which makes using it more fun). I mean making the process of learning better—by including games. You and I probably agree that this is a worthwhile investment of our time, but getting started can present unique challenges that even a lifetime of experiences has never really prepared us for. You are lucky. When I started working in the serious games industry fifteen or so years ago, there wasn't a lot of information about how to tackle a games project for learning. The entertainment industry can offer us lots of useful information, but they have a very different measure of success. If their game isn't good, it won't sell. They will go out of business. I've never seen multiple games being developed with the intention of seeing which was more popular in a learning program. Our games are often oneoffs. Therefore, this book was written for the rest of us, the rogue learning game believers who just want to make learning better.

I have had the honor of spending the last six years of my career as the "Games Czar" to the Defense Acquisition University, a DoD corporate university that understood early on that the future of the organization would include games and simulations. In my tenure here, I have delivered more than forty games for use in online courses, classrooms, continuous learning, and yes, even casual play. Many lessons have been learned, some the hard way. One resounding truth has always remained: if we don't make our learning memorable, then . . . well . . . people won't remember what we were trying to teach them.

Karl Kapp and I are very similar in that we share a passion for games in learning, and we are both collectors. We collect stories about how people use games. In this book, Karl and his co-authors Rich and Lucas have curated the best of those stories and the best of the best practices to provide you with a foundation for success in your game, gamification, and simulation learning endeavors. What you do with this book is largely dependent on your current need and your ability to be inspired by the perspectives presented. Karl, Lucas, and Rich have created a book that will help you get smarter about how, when, and why you could use games; now it's up to you to make it happen.

This book was written to help anyone interested in learning games, gamification, or simulations in a variety of ways. First, it provides some nice definitions that will help you both decide what you are hoping to do and then effectively communicate your ideas. There are lots of misconceptions about games, simulations, and gamification that can derail your project pretty early if you aren't able to distinguish what you want. Second, I think that the authors have done a great job at laying out a process for an approach to game, gamification, organizational and simulation development. They give you the information needed to make decisions informed by their experiences and the research that has been reviewed. Maybe you just smart enough on and game want to aet games development to hire the right person to do this for you. Maybe you want to try some things out within your own teams. Maybe you need to create a simulation for a new piece of equipment. This book will help you decide how to proceed with the highest probability of success.

In my time as Games Czar, I have stood strongly opposed to the use of learning games for gratuitous entertainment and fun. If I wanted my students to have fun, I would have piñatas installed in every classroom and/or online course. I want them to learn. If they have fun doing it, then great, we try to make our games and simulations enjoyable, but fun is never at the forefront of our design process. What we strive for is relevance. Students have to know why the information they are being presented with is important to them. They have to be motivated to learn it because the content is important to them, even if they don't know why yet. Students have to understand how and when and where they may apply this information, and how to transfer it into the wide variety of situations in which they might need it. The content must be important to your students, otherwise you wouldn't be teaching it, right?

One of the most frequent questions I am asked is "What's your favorite game?" I love being asked this question, because my answer changes often. And, let's be honest, there is a direct difference between what I like to play and what I'm good at. I am always going to love first-person shooter games. I am not very good at them, but I love them. After that, the games I like are highly dependent on the medium. Without specifically endorsing any one, the point is: I play. I play everything. I learn from every game I interact with, and I find new ways to represent game play dynamics in the learning games I create. It is essential that you play, too. Sometimes I find myself in game stores just reading instructions on game boxes to see whether there is anything different in the play dynamic that I can use in learning. I wouldn't talk about texting if I didn't own a phone. You can't talk about games if you never play them.

Interestingly enough, I have never become addicted to playing a learning game. I've never stayed up all night trying to beat one. I've never crammed the fridge with Hot Pockets and Mountain Dew in anticipation of the release of one. The reality is that creating great games, for any purpose, is hard. Serious games often don't get a lot of attention in the mainstream, and a fair share of projects fail because their designs don't center on their learning objectives or they don't have the right people to make the project successful.

So how do great game designers do it? They do it by understanding a lot about how people learn, and how people play. Sid Meier once told me that his team really didn't do anything to make Civilization a learning game, but his games are used in classrooms around the world. Will Wright, who designed SimCity, created a simulation of . . . life, and people loved it. His philosophy? Humans can turn even mundane tasks into play. They both keynoted Defense Acquisition University (DAU)-sponsored e-learning conferences because they both understand and appreciate the power of games within learning. The most successful game designers are a lot like us, but they are also artists. They just use a different medium for their art. I think designers are born, not necessarily created. But it's okay. Because there are people out there who can and do make amazing games. We just need to know enough to be dangerous.

Once you have read this book, I beg you to keep going. Our industry is far too small and with too few people to have great conversations with. Keep reading. Look at the research yourself, make some games and play everything you can get your hands on!

Dr. Alicia Sanchez

*Games Czar, Defense Acquisition University Ft. Belvoir, Virginia* 

# **About the Authors**

Karl M. Kapp, Ed.D., CFPIM, CIRM, is a scholar, writer, and expert on the convergence of learning, technology, and business operations. Karl is a professor of instructional technology at Bloomsburg University in Bloomsburg. Pennsylvania, and serves as the assistant director of Bloomsburg's Institute for Interactive Technologies. Karl teaches graduate level courses, including "Instructional Game Design," teaching students to leverage technology and interactive design to promote learning. He is a coprinciple investigator on two National Science Foundation (NSF) grants. One is titled "Simulation and Modeling in Technology Education (SMTE)." The goal of the grant is to develop a 3D interactive video game teaching middle school students math, science, and engineering concepts. Karl's team is responsible for combining game play and pedagogy. The other project is titled "Virtual Online Tensile Strength Testing Simulation," and Karl's team is heading up the design and development of the simulation.

He also consultants with many organizations, including Pearson, where Karl's role was to help guide the addition of game elements to high-stakes test preparation in a project called Zeos Academy. Since that time, the product has been highly successful creating engaged and motivated learners as they prepare for high-stakes testing. Karl has consulted with organizations such as Black & Decker, Genentech, Kellogg's, major pharmaceutical L'Oreal, and most companies. He is a participant in the National Security Agency Advisory Board (NSAAB) Emerging Technologies Panel, sits on several National Science Foundation visiting committees, and is a board member of several startup companies.

Karl has written five books, including *Learning in 3D* and *Gadgets, Games, and Gizmos for Learning*. His latest book is called *The Gamification of Learning and Instruction*. In the book, Karl explores the research and theoretical foundations behind effective game-based learning. He examines everything from variable reward schedules to the use of avatars to the gamification of pro-social behaviors. He is currently working on his sixth book, a field book to accompany *The Gamification of Learning and Instruction*.

Karl has been interviewed for and published articles in *Training*, ASTD's *T&D*, *Software Strategies*, *Knowledge Management*, *Distance Learning*, and *PharmaVoice*, *Training Quarterly*, *Forbes Online*, *Mashable*, and by general television and radio programs concerning his work with learning, technology, and game-based design. He appeared in the March 2013, Long View feature of *Training* magazine. Karl is quoted in several volumes of Jeannie Novak's "Game Development Essentials" series. He blogs at the popular "Kapp Notes" website and is a frequent international keynote speaker, workshop leader, moderator, and panelist at national and international conferences as well as events for private corporations and universities.

Karl is committed to helping organizations develop a strategic, enterprise-wide approach to organizational learning using interactive techniques from the field of game-design. He believes that effective education and training are the keys to increased productivity and profitability. He can be reached at <u>www.karlkapp.com</u>.

**Lucas Blair, Ph.D.**, is the founder of Little Bird Games, a serious game development company, which specializes in educational and therapeutic games. He has also taught instructional game development at Bloomsburg University and developing games and simulations at Harrisburg University of Science and Technology. He received his Ph.D. in modeling and simulation from the University of Central