

# Book Summaries from www.e-LearningGuru.com

## Book Facts

- © 2005 by Pfeiffer:  
A Wiley Imprint
- ISBN:  
0-7879-7735-7
- # Pages: 356

## How to Buy It

- [www.pfeiffer.com](http://www.pfeiffer.com)
- [www.amazon.com](http://www.amazon.com)

## Learning by Doing

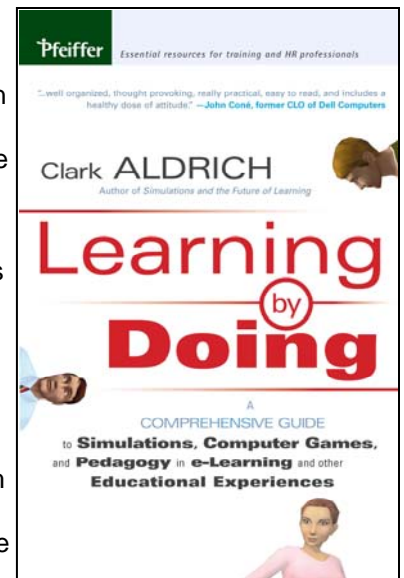
By Clark Aldrich

### Overview

*Learning by Doing* provides the reader with information on how to select, research, build, sell, deploy, and measure the right type of educational simulation for the right situation.

The book provides explanations and a definition of the different types of simulations used within organizations and adeptly explains which simulation is most appropriate for which type of learning.

The book covers the topics of building and buying the right simulation for corporations and institutions of higher education. It also discusses the broader opportunities of simulations in the areas spanning from the use of live role plays to sophisticated flight simulators. The book concludes with information on the next generation of simulations and how to manage the simulation process.



### Four Traditional Simulation Genres

Clark outlines four types of online learning environments commonly referenced as “simulations.”

He provides examples and definitions of each.

1. **Branching Stories.** These are stories or scenarios that engage the learner in a highly defined scenario where, at defined intervals, he or she makes multiple-choice decisions that branch the story down different paths.
2. **Interactive Spreadsheets.** These are spreadsheets that allow the learner, across a number of turns, to decide how to allocate resources. After each decision, the simulation generates a graph or other information that shows the results.
3. **Game-based Models.** In this type of simulation, learners engage in an entertaining game complete with competition.
4. **Virtual Products and Virtual Labs.** These are on-screen representations of objects and software that allow significant interaction, mimicking many of the physical characteristics of the real-life counterpart.

The definition and understanding of the four types of simulations provide a common language for the field of simulations. The definitions also provide a foundation for Clark's discussion of Next Generation Sims.

## The Three Elements

*Games and simulations* are almost always linked together. And for good reason. Computer games use abstract but robust simulations. However, rather than think about games and simulations, it is better to think of the distinct elements of each.

- *Simulation* Elements
- *Game* Elements
- *Pedagogical* Elements

**Simulation Elements** selectively represent objects or situations, and selectively represent user interaction. Simulation elements enable discovery, experimentation, role modeling and practice. Which means they enable transferability to the real world. Simulations elements include modeling, artificial intelligence, graphics and interface and feedback based on learner decisions. The feedback is typically a natural consequence of the behavior.

**Game Elements** provide familiar and entertaining interactions. Game elements increase the enjoyment derived from the educational experience. This can drive good will, but more importantly, drive more time spent with the experience, which increases learning. Game elements can, and often do, include the elements of established games like athletic competition, game shows, computer games, card games and kid games.

**Pedagogical Elements** at the highest level, an educational simulation's pedagogical elements are learning objectives. Below that, pedagogical or didactic elements surround the game and simulation elements, better ensuring that the students' time is spent productively. These elements include background material, visual or text representations of systems models and descriptions of interfaces to be encountered.

## Have You Played a Game Lately?

There is a growing sense that computer games are in fact educational. They do teach something. Here are a few things they teach us:

- You are the key to success—either you make things happen or you don't.
- Mistakes are necessary on the path to success.
- Things are connected—complex and intertwined systems are at play.
- How to learn—learners expect the environment to get harder as they learn.
- Computer literacy—almost goes without saying, yet, is critical.

The following is a list of questions about computer games you may have played.

If you chose two or fewer from the list, you may want to play a few more games (just as research—do not have fun).

- I have played a game in an arcade.
- I have played a game that came with my computer (such as Solitaire).
- I have played a console (PlayStation®2, Xbox®, GameCube™) single-player game.
- I have played a multi-player game with at least three other people.
- I have played a game on a portable player (cell phone, Game Boy® Advance).
- I have played a massively multi-player online role-playing game (Such as EverQuest®, World of WarCraft™).
- I have spent over three hours at one time on one game.

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*"Many educational philosophers have been tied up in the Gordian knot of what is a game versus what is a simulation, and how the two differ."*  
--Clark Aldrich.

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*"I made a perfect simulation about growing a company. The only problem is that it takes twenty-five years to play."*  
-- Clark Aldrich with apologies to Steven Wright

## When are Simulations a Solution?

There are some opportunities that are just too compelling not to use simulations, especially the traditional models.

These situations and simulations make sense for a variety of reasons.

The trick to having a good simulation experience or to providing one to your organization is to deploy the right simulation for the right job. Here are some matches.

- New Employees and High Turnover is a good candidate for Branching Stories.
- Learning to use Complicated Equipment can be helped along substantially with the use of Virtual Products and/or Virtual Labs.
- New Consultant Team Building can be enhanced with role plays using Virtual Experience Spaces.

- Shared Understanding of Complex Systems especially with cross-functional implications can be helped with Interactive Spreadsheets.
- Sales training works with Branching Stories.
- Exposure to New Perspectives can be helped with Branching Stories and Interactive Spreadsheets.
- A Big New Idea can be helped along with Marketing Mini-Games

Matching the learning and organizational need with the correct simulation provides a powerful tool for changing behavior and impacting the bottom line of corporations as well as helping students to learn more effectively in academic institutions.

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*“Like a good God/manager, you are the undisputed ruler and look down on the little people and decide their fates.”*

*--Clark Aldrich*

## Next Generation Sims

The only chance to develop an organization's people quickly, rigorously, but cost-effectively will increasingly be through next gen sims.

The next gen sims will present new ways of visualizing and compartmentalizing activities; they will also represent new types of interactions between students and computers.

Simulations, especially unfamiliar genres, cannot be skimmed. They cannot be browsed. They cannot be shown. *They can only be truly understood through active trial-and-error engagement.*

Watching someone else play an unfamiliar simulation is bewildering. You have to engage the simulation yourself.

To create the next gen sims, design teams need to be able to:

- 1) Create new models of action.
- 2) Create 3D virtual environments that can be sensed in multiple ways, and selectively dynamic.
- 3) Create interfaces to enable participants to interact with the system.
- 4) Implement networking technologies to enable large numbers of participants to join in a simulation regardless of their physical locations.
- 5) Create artificial intelligences to be convincing adversaries and allies, even mentors.
- 6) Create compelling stories and modify gameplay.

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*“Simulations may work in practice, but they certainly do not work in theory.”*

*--Clark Aldrich*

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## About the Author



Clark Aldrich has been called an "E-learning Guru" by *Fortune Magazine*, "Visionary of the Industry" by *Training Magazine*, and a member of "Training's New Guard" by the American Society of Training and Development for his work as an the international e-learning and educational simulation designer, analyst, and consultant. At any given time, he is involved in several medium and long-term projects, each to advance the formal learning industries.

He has served dozens of Global 1000 and e-learning clients. He was the lead designer of SimuLearn's Virtual Leader (Best Online Product of the Year, *T+D magazine*, 2004), and author of hundreds of articles, chapters, keynotes, reports, and columns, as well as the books *Simulations and the Future of Learning* (Wiley, 2004) and *Learning by Doing: A Comprehensive Guide to Simulations, Computer Games, and Pedagogy in E-Learning and other Educational Experiences* (Wiley, 2005). Mr. Aldrich has been interviewed as a subject matter expert by *The New York Times*, *Wall Street Journal*, NPR, CNET, *Business 2.0*, *CNNfn*, *U.S. News and World Reports*, and others on e-learning and simulations. Previously, he was the research director that had created and was topic leader for Gartner Group's e-learning coverage.

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