The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education

Reviewed by John W. Rice, Department of Learning Technologies, University of North Texas, Denton, TX USA

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Karl M. Kapp
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Designing Digitally, Inc., a virtual training and 3D environments development company, introduced a simulation devoted to covering the steps involved in typical firefighter training known as REVAS (Rescue, Exposure, Ventilation, Attack, and Salvage). Trainees take on roleplaying missions, virtually assisting in a simulated emergency where the training steps are covered. Their avatars ride a fire truck to a virtual fire in the simulator, climb a ladder using appropriate procedures, engage in a rescue operation and otherwise conduct a variety of 3D training exercises.

The REVAS simulation is one of many examples covered by Karl Kapp (2012) in his new book, The gamification of learning and instruction: Game-based methods and strategies for training and education. Chapter contributors include a range of gamers, academics, CEOs, and training managers for various companies.

The book is not meant to be a step-by-step guide to making games. Rather, it presents more of a big picture approach, offering suggestions for tackling various techniques for gamification of existing instructional material, tailored for different situations in both corporate and academic settings. One example Kapp cites: the DevLearn eLearning Guild joined forces with Tandem Learning to incorporate an alternative reality game (ARG) in the DevLearn 2010 Conference. This approach was reported to be...
highly successful in providing high engagement for the event. Attendees visited DrStrangeLearn.com to form teams and begin using social media to uncover clues and engage in collaborative learning. Another example: the University of Seattle in Washington uses crowdsourcing through the online game FoldIt to design new proteins and tackle complex problems such as creating 3D models for certain enzymes.

Gamification has become something of a dirty word in some circles, particularly after luminaries in the field such as Bogost (2011a) maligned the buzzword. Kapp seeks to take back the word through this book, and does an admirable job. In the introduction he stipulates that simply rewarding participants with a badge for effort is a simplistic approach unlikely to yield desired results. All aspects of gamification design need to be carefully considered in order to make a project successful. Like anything else, Kapp maintains throughout the book, designers get what is put into the project, and there is no simple solution to effective gamification by merely altering a few activities in a class.

Though the buzzword has circulated a few years, including avid interest on Twitter (#gamification), few books have been written directly dealing with the topic for instructional leaders. Two recent examples that come close include Zichermann and Cunningham’s (2011) Gamification by design: Implementing game mechanics in web and mobile apps, and Bogost’s (2011b) How to do things with videogames. Both focus on gaming elements, particularly in web and mobile apps with the former and in videogames with the latter, although Bogost’s book leans more toward conceptual applications since he is more interested in discussing what can be done through the medium rather than describing gamification techniques per se. In contrast, Kapp’s book focuses on multiple aspects of gaming, not just videogames, offering several suggestions for organizational implementation of gamification.

For readers seeking a more step-by-step approach, two recent books aimed separately at education and business audiences offer some detailed suggestions. Sheldon’s (2012) The multiplayer classroom: Designing coursework as a game is written with an instructional audience in mind. Radoff’s (2011) Game on: Energize your business with social media games is aimed squarely at boardrooms rather than classrooms. Both come closer toward meeting expectations set by the buzzword, though neither cover all the same ground as Kapp’s book.

After defining terms, Kapp grounds the book in theory and research covering gaming. For the chapter on theory, he examines scaffolding, cognitive apprenticeship and flow theory, among others. Self determination and social learning buttress the notions of independent mastery combined with encouragement toward accomplishing goals. It is an excellent chapter for introducing readers to the major theories supporting the idea that games can serve as powerful learning platforms.

The first half of Kapp’s chapter on research focuses on meta-analyses by examining the effectiveness of gaming. This analysis is summarized and charted effectively, presuming readers have at least a modicum of knowledge about gaming. The second half of the chapter shifts to studies on the effectiveness of elements in gaming found to be beneficial for instruction. From a designer’s viewpoint this is particularly useful, as Kapp lists the research on elements such as reward structures, intrinsic and extrinsic motivation, and player perspective. Designers with minimal knowledge of gaming research will thus be introduced to reasons why the different elements are useful and appropriate.

Additional chapters cover topics such as application of gamification toward problem solving (in which Kapp incorporated some ideas of mine outlined in a previous paper), managing the design process of a gamification project, understanding what gamers are looking for when engaged, and how to harness those activities to pedagogical elements. Educators will particularly appreciate Kapp’s approach in these chapters, as the whole idea of appropriating elements creating engaging experiences in games is approached from a pedagogical viewpoint.

Other chapters focus on understanding the gamers’ point of view while playing, a case study of casual gaming in the military, and
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