

Computer Games for Learning: An Evidence-Based Approach (Book Review)

Reviewer:

Colin Pinnell

Undergraduate Student
School of Computing and Information Science
Athabasca University, Athabasca, Canada
slysavant@gmail.com

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Computer Games for Learning: An Evidence-Based Approach
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In “Computer Games for Learning,” Richard E. Mayer presents a strong platform for understanding the current state of research in educational games and gamification. Unlike many books focusing on games or gamification, Mayer rejects any statements on educational games which are not supported by well-constructed research. The focus of this book is on that research and not the topic of games or gamification itself *per se*. It presents the concepts and methodologies of conducting research within the field of educational games, along with a background of work that has already been conducted, focusing on a series of studies he and his team have conducted to investigate their significance.

Researchers interested in studying gamification and the use of games within learning spaces will find this book a useful, thorough and, most of all, a *pragmatic* addition to their library. The introduction of “Computer Games for Learning” explores the issues which researchers will face, including a description of the domain of educational games. The three chapters that make up the Introduction provide an excellent platform for the rest of the book, distinguishing both the intention of the work and the method that Mayer uses.

The foundation Mayer creates is used both in the presentation of the work and in the studies conducted by his team. Other researchers will find this foundation useful for their own research, as something of a test to ensure that their studies are properly focused and removed from the hype and bias so often found within gamification literature. It is composed of three parts, presented as “Value-Added Designs,” “Cognitive Consequence Designs,” and “Media Comparison Designs.” These three inquiry categories are better described as “Determining the effectiveness of adding a feature to a game,” “Determining the educational value of an off-the-shelf game,” and “Determining the value of an educational game versus some conventional educational context”. These, Mayer suggests, are the areas in which research can be most fruitful and in which the results of research can be most sure.

The body of the work, Part II (Chapters 4 to 7) of “Computer Games for Learning,” presents the statements from gamification advocates, findings of other researchers, and the findings of his own team. Here, Mayer focuses on the propositions made by the community of educational game researchers and how those propositions stand against the testing methodologies proposed in the introduction of the book. Researchers interested in gamification will find the studies presented to be well-constructed and replicable, with methods that can be re-used for other purposes and with conclusions that inspire new questions and further research.

This section is also of interest to those interested who are outside of the research community, such as educators or educational administrators. Findings are presented in a clear and unambiguous manner and cover a wide array of subjects within the field of gamification. More generally, the book as a whole presents a clear methodology for separating fact from fiction which is approachable for the layperson developing their own gamification programs. For such a reader, Mayer presents each question in the same format, including presentation of each individual problem and how that problem was approached before presenting and discussing findings. Mayer does not shy away from pointing out where findings contrast conventional wisdom, instead drawing attention to those factors which are in conflict. For example, while concepts such as using voiced instead of text narration are strongly supported by

testing, others are assumed to be valid are found wanting – the idea of providing both text and voiced narration simultaneously is challenged, along with the inclusion of competition in a learning game.

While subtle, the underlying theme of the book is a useful one for researchers, enthusiasts and laypersons to keep in mind. This theme is stated most clearly in a discussion of a “Media Comparison,” which indicates that the support for educational games as useful pedagogical tools is not as strong as is popularly believed, with computer-based slideshows being more educational in two out of the three principles examined. Throughout the book, Mayer gently suggests that enthusiasm has overtaken critical thinking in the field of gamification. This book is an effort to rein in that enthusiasm, especially within the research community examining games for learning.

Unfortunately, this effort to rein in the enthusiasm in the gamification field is one of the major flaws of the book. Gamification as a field of research is complex, poorly structured, and dense. Despite the problems it introduces, the enthusiasm that is present in the field is an overall strength, generating diverse new directions of research. Without that energy, the book can be a little dry and difficult to go through. It is arguable that this is a necessary change in the field for it to be considered a “mature” field of research, but it may come as a shock to an enthusiastic researcher interested and deeply invested in the work. This still remains a valuable book for these individuals, though, perhaps more so. A dose of sober reflection on a field is often more valuable when that field is exciting and generating a lot of interest.

In conclusion, the book provides a clear, honest and critical perspective of research in educational game design. The appraisal of Dr. Jan L. Plass, as found on the back jacket is fitting: “*Computer Games for Learning* is an indispensable read for anyone interested in the field of games and learning.” While at times dense and technical, Mayer provides a much-needed analytical framework, providing tools for sober, rational, and realistic investigation into educational games and gamification.