Math Explore: An Exploration in Design and Development of a Game for Learning Mathematics
by Roziana Ibrahim, PhD

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About this book

Why is this topic important?
Digital games have become a ubiquitous part of children’s contemporary culture, and yet games are rarely considered for their educational benefits. Common features of a digital game such as active participation, prompt feedback, challenging but achievable goals, and a mix of uncertainty and open-endedness contribute to motivation, one of the crucial elements in learning. This combination of ubiquity and benefits makes games for learning the most likely next step. However, creating games for learning is not just a matter of putting content into some kind of games. There are numerous issues in the design of educational games, and research in this area is quite recent. If our goal is to create a game for learning, we also need to know how to integrate the curriculum and learning outcomes into a game.

What can you achieve with this book?
The book presents an integrative approach between software development lifecycle, and game design and development processes. With this project, a reader can take a game project and work it through to a more systematic design of games for learning. It will aid game designers, researchers, students and educators in broadening their work to integrate, create and implement games for learning systematically. The book includes a brief review of popular multimedia authoring tools for use in a game design project.

How is this book organised?
The book starts out by presenting one of the most important features of learning, scaffolding, and how this feature is used in popular games. It explains how various forms of scaffolding exist from the start of a game session and throughout the whole game. Next, the software development lifecycle is presented with game design and development processes integrated into the lifecycle. It details the design, game flow, storyboards and artefacts produced during the project. Subsequently, each of the game modules is explained, presenting the goal, curriculum focus, interfaces and gameplay. The book discusses directions for the future.