

Chapter 92

The Convergence Between Challenge-Based Learning and Game Design Thinking Methodologies: Exploring Creativity and Innovation in the Game Development Process

Isabel Cristina Siqueira da Silva

UniRitter, Brazil

ABSTRACT

The process of game development is constantly evolving in order to meet the different demands of players as well as the need to adapt to the employment of new technologies and trends in the gaming market. The game design thinking methodology that adds quality to the game development once is focused on the game design and development based on design thinking, an interactive design process focused on collaboration between developers and users to propose user-centered solutions. The challenge-based learning methodology presents to the learners (and future professionals) a challenge scenario asking them to think about a number of possible solutions using a variety of interactive tools. This chapter proposes to combine both game design thinking and challenge-based learning methodologies into the process of game development in order to assist the game learners and professionals to be able to integrate different aspects necessary to the proposal of a game, considering its multidisciplinary nature and understanding the human needs involved.

DOI: 10.4018/978-1-6684-7589-8.ch092

INTRODUCTION

The area of game design and development evolves rapidly but still lacks proven methodologies that help the student and the professional in the area to think about the process of the game in the sense of design. This issue involves the constant need for innovation and reinvention in order to meet new audiences, new static and new experiences. Innovation and creativity are characteristics present in the day to day of the game designers besides the use of methodologies aimed at establishing design patterns that aid in the development stages of games.

Game design is related to designing, creating, and coordinating the game that will be created. The professional that develops games must be able to integrate different aspects necessary to the design of a game, which has a multidisciplinary nature involving concepts of art, programming, audio, artificial intelligence, user experience, narrative among others. Therefore, it is the responsibility of the game designer the planning of the interface, interactivity, plot and mechanics of the game that should entertain the player. In other words, it is this professional who should think of ways to make the game fun, engaging and interesting for the public.

Thus, it is interesting for the future professional game designer to study higher education in games design in order to learn the methodologies and tools most used to become a developer. However, the area of games design still requires discussions involving the proposal of effective methodologies for game developing. The methodologies used in the development of software such as the cascade model, scrum among others, are not suitable for the development of games mainly because the teams are disciplinary, and the projects are dynamic.

For the game developing learners, the use of appropriate methodologies can increase the sense of creativity, innovation and inspiration to the different stages of game design. Considering that the minds of students born in the last decades have undergone significant cognitive modifications, it is noted that these modifications impel a new variety of needs and preferences. According to Mendes (2012), a large part of the problem related to the learning of digital natives lies in the fact that it is laborious to train the brain to construct thought from the traditional linearity of reading and writing, once this thought is formed due to the contact with different digital media. Then, innovative education models are needed in order to train more creative and bold professionals who are not afraid to err or exploit new possibilities for games proposes.

According to Gestwicki e McNely (2012), design thinking applied to game design (game design thinking) is adequate for providing immersive, research-based learning, bringing academic objectives closer to business environments. Design thinking is a way to solve problems, develop products and think projects based on the cognitive process that designers use. In addition to immersion, the generation of ideas, the prototyping of possibilities, the selection of solutions and the implementation are characteristics of design thinking that can be adapted to the game developing.

Considering the game designer learning, game design thinking concepts can contribute significantly to the methodology adopted in the classroom, especially in higher education institutions. The game design thinking makes learning more dynamic, persistent and interesting as it assists students in the development of greater autonomy and critical sense on a certain subject. In the same way, for the professional game designer the methodology of game design thinking favors the innovation in the development of games in order to explore opportunities in the market.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/the-convergence-between-challenge-based-learning-and-game-design-thinking-methodologies/315573

Related Content

Experiencing Presence in a Gaming Activity Improves Mood After a Negative Mood Induction

Stefan Weber, Fred W. Mastand David Weibel (2023). *Research Anthology on Game Design, Development, Usage, and Social Impact* (pp. 1198-1221).

www.irma-international.org/chapter/experiencing-presence-in-a-gaming-activity-improves-mood-after-a-negative-mood-induction/315536

Successful Game Development Partnerships between Academics and Physicians: Two Case Studies

Elena Bertozzi, Leonard R. Krilovand Dilys Walker (2013). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 97-107).

www.irma-international.org/article/successful-game-development-partnerships-between-academics-and-physicians/93031

To Play or to Learn?: A Review of Game-Based Math Learning for Motivation and Cognition

Joan J. Erickson (2015). *Gamification: Concepts, Methodologies, Tools, and Applications* (pp. 2040-2061).

www.irma-international.org/chapter/to-play-or-to-learn/126159

Comic Books, Video Games, and Transmedia Storytelling: A Case Study of The Walking Dead

Charlie Ecenbarger (2016). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 34-42).

www.irma-international.org/article/comic-books-video-games-and-transmedia-storytelling/147351

The Effects of Using On-Screen and Paper Maps on Navigation Efficiency in 3D Multi-User Virtual Environments

Hakan Tüzünand Dilek Doan (2019). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 21-41).

www.irma-international.org/article/the-effects-of-using-on-screen-and-paper-maps-on-navigation-efficiency-in-3d-multi-user-virtual-environments/252171