

Book Review

Student Usability in Educational Software and Games: Improving Experiences

Reviewed by Chia-Wen Tsai, Department of Information Management, Ming Chuan University, Taipei, Taiwan

Reviewed by Yi-Chun Chiang, Institute of General Education, Ming Chuan University, Taipie, Taiwan

In this generation, children have more contact with electronic devices and mobile technologies, and play video games earlier than in previous generations (Beck & Wade, 2006; Martín-SanJose et al., 2015). Hence, more and more educators consider that using games to teach can be an appropriate teaching strategy that may also improve students' learning motivation and engagement. Many educators start to be convinced that games can be regarded as a potential learning platform (Prensky, 2006; Soflano, Connolly, & Hainey, 2015). That is, employing games for learning has become a trend that educators aim to develop for adoption in supporting students' learning styles and improving learning outcomes.

Student Usability in Educational Software and Games: Improving Experiences is divided into three sections: 1. Usability, accessibility and playability in virtual learning environments and serious games; 2. Human and social factors in game-based learning; and 3. Experiences and uses of educational videogames in different contexts. Altogether, the book covers ten topics, including: (1) Adaptive learning interfaces; (2) Computer-supported collaborative learning; (3) Educational computer games; (4) Immersive learning; (5) Learning-gaming environments; (6) Learning-gaming systems; (7) Mobile learning and ubiquitous learning; (8) Student model conceptual frameworks; (9) User-centered design; and (10) Virtual learning environments.

The first section consists of five chapters indicating the advantages and disadvantages of educational computer-based games. For example, herein it is mentioned that "This survey showed both the potential of educational computer-based games and the lack of knowledge, and sometimes also negative attitudes, amongst potential users" (p. 32). Indeed, a factor affecting students' disengagement or having negative attitudes is the lack of challenges. Therefore, the element of competition and challenge in substantial educational games can stimulate the interest of students, enhance learning and cooperation among students, and increase the efficiency of the learning process (Atanasijevic-Kunc et al., 2011; Cagiltay, Ozcelik & Ozcelik, 2015). Besides, mobile technology such as smart phone, iPad or Ebook have come to be regarded as effective learning tools because of user-friendliness and affordability, which can be adopted in facilitating students' learning.

The second section of the book comprises four chapters and highlights the instructive nature of educational games. Compared with entertainment games, educational games may be tedious and less attractive to people. However, the purpose of educational games is designed to teach learners a specific subject via the game's challenge, then guide them to different dimensions of thinking and problem-solving skills. This perspective is similar to "rather than simply telling a child how to solve a problem, it is possible to encourage higher mental functions and emotional regulation within the zone of proximal development" (p. 166).

The book's third section provides eight case studies, introducing how 3D games and Role-Playing Games (RPG) are adopted for educational purposes, and further exploring the pros and cons of using Digital Game-Based Learning (DGBL) and Computer-Supported Collaborative Learning (CSCL) in education. This book presents a collection of recent research advancements on the usability design

and evaluation of learning systems and educational game environments. Moreover, in supporting the use of digital tools or educational games for learning, this book points out that instructors must stay well versed in new technologies and their applications, and further provide students with a “digital literacy” that can teach them to learn the new communication and information languages to code and decode messages.

Over the past decades, teachers, researchers and educators have been devoted to finding suitable ways to affect the promotion of teaching and learning, further improving students’ learning attitudes, learning styles and learning outcomes. As we know, views of the learning process have changed, and games are no longer considered as just a form of entertainment. Therefore, many researchers have taken note that instructors can use digital tools to develop a series of interesting games with educational significance because this kind of innovative teaching method can meet young learners’ requirements, keep learners within their zone of proximal development, thus engaged in learning. Our conclusion is that this book and the case studies introduced are appropriate, and allow the reader to understand how to design and implement educational games in education domains.

In view of this, we refer to another book in this field that we reviewed before. That is, we compare *Social Media in Higher Education Teaching in Web 2.0* (edited by Monica Pătruț and Bogdan Pătru) with *Student Usability in Educational Software and Games: Improving Experiences*. As we know, the advancement in digital technologies, particularly in computers, smartphones and tablets, has changed our daily lives. Today, many learners are no longer satisfied with traditional teaching approaches, as they may have higher expectations of how to use new strategies in learning. *Social Media in Higher Education Teaching in Web 2.0* reflects how social networking sites, such as Facebook and Twitter, have huge impact on learners, which makes traditional teaching methods look uninteresting and outdated in comparison. Students may also be interested in using social networking sites (SNSs) to learn because of the convenience. When immersed in SNSs learning environments, the platform provides a place to discuss, communicate, and even share knowledge. Learners can interact with their teachers, classmates and friends, and even build their own learning communities. Therefore, social media is a useful learning tool that teachers can adopt in their teaching.

Having identified useful tools to promote students’ learning, it is necessary to adopt appropriate strategies to raise their learning motivation and engagement. Hence, more and more educators have started to explore what kind of simulations or strategies are suitable for students and tried to develop projects to further improve their learning. The book, *Student Usability in Educational Software and Games: Improving Experiences*, introduces that GBL could be deployed not only by educational software but also conducted via diverse applications with educational purposes and context. Besides, the authors demonstrate that games are attractive, addictive, and fashionable for students, which also can lead to interaction, engagement, problem-solving, and acquisition of skills that provide usability, involvement, motivation, and creativity learning experience for users. In this sense, this book shows the importance of adopting innovative strategies in teaching and learning. Together, these two books could provide a complete framework and knowledge for educators to conduct interesting and innovative courses with related media, software, and technologies.

Student Usability in Educational Software and Games: Improving Experiences is worth reading. Teachers, educators, and researchers who are interested in GBL, DGBL and CSCL, and experts in the area of human-computer interaction, learning systems, and educational technologies could benefit from reading it. Furthermore, students from different disciplines could achieve better learning performances if their teachers adopt and apply educational software, technologies, and games in their instruction.

Student Usability in Educational Software and Games: Improving Experiences

Carina Gonzalez

© 2012 by IGI Global

439 pp.

\$175.00

ISBN 978-1466619876

REFERENCES

- Atanasijevic-Kunc, M., Logar, V., Karba, R., Papic, M., & Kos, A. (2011). Remote multivariable control design using a competition game. *IEEE Transactions on Education*, 54(1), 97–103. doi:10.1109/TE.2010.2046489
- Beck, J., & Wade, M. (2006). *The kids are alright: How the gamer generation is changing the workplace*. Boston, MA: Harvard Business School Press.
- Cagiltay, N. E., Ozcelik, E., & Ozcelik, N. S. (2015). The effect of competition on learning in games. *Computers & Education*, 87, 35–41. doi:10.1016/j.compedu.2015.04.001
- Martín-SanJose, J.-F., Juan, M.-C., Seguí, I., & García-García, I. (2015). The effects of computer-based games and collaboration in large groups vs. collaboration in pairs or traditional methods. *Computers & Education*, 87, 42–54. doi:10.1016/j.compedu.2015.03.018
- Prensky, M. (2006). *Don't bother me, mom, I'm learning!: How computer and video games are preparing your kids for 21st Century success and how you can help*. St Paul, MN: Paragon House.
- Soflano, M., Connolly, T. M., & Hailey, T. (2015). An application of adaptive games-based learning based on learning style to teach SQL. *Computers & Education*, 86, 192–211. doi:10.1016/j.compedu.2015.03.015

Chia-Wen Tsai is a Professor in the Department of Information Management, Ming Chuan University. Dr. Tsai is one of the Editors-in-Chief of International Journal of Online Pedagogy and Course Design, and International Journal of Technology and Human Interaction. He is also the Associate Editor of Cyberpsychology, Behavior, and Social Networking, and Taiwan Corresponding Editor of British Journal of Educational Technology. He is interested in online teaching methods and knowledge management.