Foreword

Games in healthcare for therapeutic purposes is not a new area of study and the literatures shows publications in this area since the early 1980’s. Historically, these games were initially designed for children, but as time passed the target audience included the adult population. The early games in healthcare were primarily videogames, only available on personal computers. However, with widespread access to the Internet by consumers in the 1990’s and widespread use of personal computers in the home environment, and the ubiquitous use of mobile devices in the 2000’s, a more diverse population now has the ability to access different types of gaming platforms. The use of games in healthcare shows a potentially promising approach to improve health outcomes and shows promise for long-term effects on health behaviors. The immersive nature of games offers a different type of paradigm than traditional educational environments and interventions such as non-interactive websites, where people are passive observers of images or text on the computer. Instead with games, the users are active participants in an environment where they have the opportunity to set goals and develop skills in an entertaining and motivating fashion. Games allow users to learn, potentially socialize with others like themselves, and behave in ways that resemble how they behave in the real world.

Serious games that simulate real life events are becoming more pervasive in health care as a means to engage patients to improve their health outcomes through simulation type training and education. This type of persuasive technology generally based on models and theories of behavioral change, also uses the aspect of ‘fun’ to motivate and engage people to change behaviors.

In the 2000’s virtual environments (computer-generated 3D representations of a natural environment) running over the Internet became another means of engaging patients in changing health behaviors through training and education. These environments allow people from diverse geographical locations to meet and interact with each other for discussions, information exchange or game playing. These are very complex information spaces, and they have the potential to be useful in providing not only information, but also opportunities for users to practice new behaviors in real-life scenarios. Over the past several years, the healthcare community has developed and used 3D environments to deliver healthcare, education, social support and social networking.

This book provides a special focus on using games and the principles of gamification for health outcome improvement. A solid background is provided in theories used in health games, systematic reviews and meta-analysis, ethical challenges in games, an overview of gamification principles, and game design. In addition to the variety of technologies (videogames, mobile applications, Xbox, Kinect, Leap Motion, multimodal user interfaces, thermal user interface, and 3D online games) considered in this book, the authors additionally present their research and case studies used to evaluate games for both children and adults.
Themes outlined in the book include games used in education, disease prevention, health promotion, self-management in chronic diseases, clinical adherence to treatment, psychological interventions, rehabilitation, exercise and physical training, health literacy, and medical education and training. Furthermore, the authors present games developed for a variety of healthcare conditions such as obesity, mutism, mental disorders (social reintegration, eating disorders, post-traumatic stress disorder), rehabilitation for physical disorders, blindness, aphasia, diabetes, and games to improve physical activity and dietary habits.

The growth of games in the healthcare area to improve health outcomes demands that we not conduct rigorous clinical trials to show the efficacy and long-term effects of these interventions, but we must also build upon the evidence and lessons learned in previously completed work. This book provides a glimpse of the important work already being conducted in this area.

Constance M. Johnson  
Associate Professor  
Duke University, USA

REFERENCES