

Chapter 3

Gamification and Health Literacy

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ABSTRACT

The growing body of knowledge on the effectiveness and usability of digital games in delivering health information to consumers reveals that the academic attention toward gaming has increased. An overabundance of health information for consumers is often very daunting. Healthcare workers need resources that focus on health literacy, and consumers demand easy to comprehend information in a user friendly format. This chapter explores how gamification as a mode of information exchange could provide answers to the health literacy issue and demonstrates how games can potentially be a natural platform to deliver information to consumers.

INTRODUCTION

The current trend in the healthcare climate is the shift of power into the hands of consumers. Investing resources into enhancing consumers' knowledge about their health is essential in maintaining and improving the quality of healthcare (Cleland & Ekman, 2010). However, studies have indicated that patients/consumers lack the understanding of their conditions and have limited involvement in health decision making, mostly related to a deficiency in health literacy. The lack of effectively delivered health information to consumers was identified as one of the factors that leads to medical errors (AHRQ, 2003). A systematic review of literature indicated that poor health literacy is associated with overall poor outcomes in terms of increased mortality, greater hospital admissions, increased emergency room visits, and poorer understanding of medications and health messages (Berkman et al., 2011).

Health literacy is pivotal because limited health literacy has been correlated with poor knowledge of therapy and, consequently, poor self-management. With changing definitions, health literacy is not solely related to the level of reading the patient is capable of; it is now about presenting information that is accessible and makes sense to the individual's cultural, societal, and religious background. Healthcare workers may wonder whether patients make appropriate decisions based upon what they know or learn.

DOI: 10.4018/978-1-5225-0978-3.ch003

They may speculate that improving the knowledge of patients would allow them to act favorably on the information they receive. The distinction between knowledge and action has been debated at length in the literature, and experts posit that knowledge and action are intertwined. “Knowledge-action is a two-way highway with equivalent traffic on both directions – individuals use their knowledge to become better actors and they generate knowledge from their actions” (Crookal & Thorngate, 2009).

A solution to the knowledge-action conundrum may come in gamification. Gamification is an innovative approach to delivering health information and has been used effectively as a platform to inform and educate patients about their health. Health gaming allows for a unique experiential opportunity and provides a tool to put knowledge into action in a way that educational brochures or pamphlets cannot. However, the potential of gamification to serve this function has not been recognized by most health organizations as an alternative to oral or printed information materials routinely given to patients. The question is: Can gamification provide the answers to the health literacy debate? This chapter will illustrate how digital health games could be natural platforms to tackle the health literacy issue.

BACKGROUND

Health literacy poses a challenge in understanding and processing health information. It refers to the degree which individuals obtain, process, and understand basic health information and services that help them in decision making (Parker, Ratzan, & Lurie, 2003). The World Health Organization (WHO) defines health literacy as “The cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health” (WHO, 2009).

The effectiveness of successful health literacy is apparent in an article posted on the WHO Website that depicts the actions of people in eight communities in Meso-America who actively engaged in minimizing the spread of malaria in their regions. By reducing the spread of mosquitoes over a 3-year period, these communities had a 63 percent reduction in malaria cases and a decrease of 86.2 percent in cases caused by *plasmodium falciparum*, the parasite that causes morbidity and mortality of malaria in the world (WHO, 2009).

The notable aspect of this story is the involvement of action. The Meso-American people took information from the campaign about reducing the incidence of malaria and acted on it, and, therefore, made a difference. Acting on the knowledge provided is ultimately the goal that healthcare workers seek to attain when delivering information to patients.

This chapter proposes defining health literacy in subsections, one following the other; recognition, motivation, reading, understanding, deciding, and acting. The former two are passive steps, involving decision-making without the need to search for new information. The first of these, recognition, involves understanding that there is an issue that needs repair. Perhaps the patient is unhappy with their current medication and would like an alternative with fewer side effects or believes they may have a disease or disorder to bring up with their doctor. Without this vital step, the others will not happen. Motivation is crucial and it refers to the ability to initiate, activate and maintain certain behavior. While recognizing there is an issue is a good first step; unwillingness to continue to pursue a goal will derail health literacy and interrupt the patient from following the later steps.

The latter four steps are active. They involve a combination of physical and mental facilities. Reading is a basic component of literacy. It defines being able to view text and understand the symbols that form

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