

Chapter 45

Game-Based Learning for Knowledge Sharing and Transfer: The e-VITA Approach for Intergenerational Learning

Dimitra Pappa

NCSR Demokritos, Greece

Ian Dunwell

Serious Games Institute, UK

Aristidis Protopsaltis

Serious Games Institute, UK

Lucia Pannese

Imaginary srl, Italy

Sonia Hetzner

*Friedrich-Alexander-Universität Erlangen-
Nürnberg, Germany*

Sara de Freitas

Serious Games Institute, UK

Genaro Rebolledo-Mendez

Universidad Veracruzana, Mexico

ABSTRACT

The increasing pervasiveness of digital technology is having a profound effect on how younger generations interact, play, and learn. The use of electronic games for education (game-based learning) promotes an agile, immersive, and stimulating form of learning that fosters learner engagement and motivation. This chapter focuses on GBL for knowledge sharing and transfer for the purposes of intergenerational learning. In addition to the challenge of building intellectually appropriate and challenging games, the informal and incidental nature of intergenerational learning introduces another key requirement: namely, that of effectively capturing and re-proposing the informal knowledge of seniors. For this reason, an innovative approach that builds on the combined use of serious games and storytelling is proposed. The application of this methodology in the context of the research project e-VITA is discussed, including the implications of pedagogy upon game design.

DOI: 10.4018/978-1-60960-495-0.ch045

INTRODUCTION

The increasing pervasiveness of digital technology is having a profound effect on how younger generations interact, play, and learn. Learning increasingly embraces digital technologies. Hoffman (2004) claimed that technology is an environment that our students now inhabit. The current generation of students, having grown up with technology, are developing “new forms of evaluation skills and strategies” (Conole et al., 2006) and seek interactivity and fast-paced, visually stimulating and engaging learning experiences, in stark contrast to the content traditional educational systems are designed to offer (Conole et al., 2006). According to Resnick (2007) “today’s students are growing up in a world that is very different from the world of their parents and grandparents. To succeed in today’s Creative Society, students must learn to think creatively, plan systematically, analyse critically, work collaboratively, communicate clearly, design iteratively, and learn continuously. Unfortunately, most uses of technologies in schools today do not support these 21st century learning skills. In many cases, new technologies are simply reinforcing old ways of teaching and learning.”

The later causes a significant disconnect between what these “digital natives” want and what they’re receiving: the same methods that have worked in the past will not work for the students of today. Digital natives are accustomed to multiple streams of information, prefer inductive reasoning and an immediate response to their actions, and demonstrate a short attention span for traditional instruction. Digital natives (Prensky, 2001b) – generations born after the advent of large-scale information technology usage - are becoming more accustomed to multiple streams of information, prefer inductive reasoning and expect an immediate response to their actions. In addition they sometimes demonstrate a short attention span for traditional instruction (Tapscott, 1998) and are more likely to be *extrinsically* rather

than intrinsically motivated. Oblinger (2004) described today’s learners as being “digitally literate”, “always on”, “mobile”, “experimental” and “community-oriented”. In the face of these considerable learning design challenges, learning practices are experiencing a paradigm shift that can broadly be considered as a move from a textbook-based transferral of knowledge to more agile and socially interactive forms of learning that rely upon interpersonal engagement strategies and that necessitate deeper engagement and motivation.

Contrary to traditional transmission-based instruction (which pursues learning through a reception of facts and the repetitive practice of discrete skills), modern constructivist-compatible instruction views learning as a self-directed, personally-responsive, and socially-mediated process in which a learner’s own motivation and effort are just as important (Ravitz et al., 1998). Understanding arises only through prolonged engagement of the learner in relating new ideas and explanations to the learner’s own prior beliefs. Consequently, the capacity to employ procedural knowledge (skills) comes only from experience in working with concrete problems that provide experience in deciding how and when to call upon each of a diverse set of skills. According to Mayer and Moreno (2003) meaningful learning involves a “deep understanding of the material, which includes attending to important aspects of the presented material, mentally organising it into a coherent cognitive structure, and integrating it with relevant existing knowledge”. Resnick (2007) argues that “success in the future will be based not on how much we know, but on our ability to think and act creatively”. To achieve these goals will require new approaches to education and learning, and new types of technologies to support those new approaches. Game-based learning is such a novel approach.

Yet, whilst Serious Games (SGs) are increasingly becoming accepted as a learning tool, the debate continues about what makes a game effective

28 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/game-based-learning-knowledge-sharing/52531

Related Content

Lessons Learned and Best Practices of Stealth Assessment

Lubin Wang, Valerie Shute and Gregory R. Moore (2015). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 66-87).

www.irma-international.org/article/lessons-learned-and-best-practices-of-stealth-assessment/136317

The Learning Toolkit: The Design, Development, Testing and Dissemination of Evidence-based Educational Software 1

Philip C. Abrami, Robert S. Savage, Gia Deleveaux, Anne Wade, Elizabeth Meyer and Catherine LeBel (2010). *Design and Implementation of Educational Games: Theoretical and Practical Perspectives* (pp. 168-188).

www.irma-international.org/chapter/learning-toolkit-design-development-testing/42453

Optimizing Global Learning Programs Through Learner Analytics

Mohit Yadav, Ajay Chandeland Le Vu Bui (2026). *Gaming, Wellness, and Technology in the Bold Global Workforce* (pp. 241-262).

www.irma-international.org/chapter/optimizing-global-learning-programs-through-learner-analytics/383902

Browser-Native Games That Use Real-World XML Data

Jonathan Chetwynd (2011). *Computer Games as Educational and Management Tools: Uses and Approaches* (pp. 122-135).

www.irma-international.org/chapter/browser-native-games-use-real/53954

Presence Pedagogy as Framework for Research in Virtual Environments

Amelia W. Cheney and Stephen C. Bronack (2011). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 79-85).

www.irma-international.org/article/presence-pedagogy-framework-research-virtual/53155