Intertwining Culture With Education Through Gamified Storytelling: The Case of “Myth Trek”

Chairi Kiourt, Athena Research Center, Xanthi, Greece
Stella Markantonatou, Athena Research Center, Athens, Greece

ABSTRACT
Coupling culture and education has attracted significant attention and pushed towards the replacement of the typical STEM model into STEAM. An effective integration of culture in the everyday educational practice, empowered by game-based storytelling has already shown great potential in transforming the way people are exposed to and grasp knowledge. This paper presents an attempt to put culture, education, gaming and storytelling together. Myth Trek was a game developed using state-of-the-art gaming technology, and integrated elements going back in time all the way to the ancient Greek mythology, embedding a time-distorted history onto the present day’s landscape in the center of the city of Athens, with an aim to save Athens from complete annihilation. In a playful action/adventure gaming setting, the game mixes mythology, history, architecture and the environment to expose players to the long history of Athens.

KEYWORDS
Cultural Informatics, Digital Humanities 3D Reconstruction, Gamification, Storytelling

INTRODUCTION
Integration of play in educational activities is usually termed as gamification, relating to a considerable volume of research in game studies and human-computer interaction, in playful design, serious games (Ritterfeld, Cody, & Vorderer, 2009), pervasive games (Montola, Stenros, & Waern, 2009), including augmented reality games, location-based games, persistent games or alternate reality games (McGonigal, 2011). Interaction design and digital marketing were among the first domains in which the integration of game elements took place in a typically non-game context, with an apparent goal to motivate user activity and retention (Deterding, Dixon, Khaled, & Nacke, 2011). New concepts have emerged and have been studied, like the hedonic attributes (Hassenzahl, 2003) or motivational affordances (Zhang, 2008) of pleasurable products (Jordan, 2002). Focus on the creation of desirable user experiences has resulted into a shift of attention to playfulness, which is currently associated with pleasurable experiences and fun, or anything that goes beyond utilitarian work (Costello, & Edmonds, 2007; Fontijn, & Hoonhout, 2007; Gaver, Bowers, Boucher, Gellerson, Pennington, Schmidt, Steed, Villars, & Walker, 2004; Gaver, 2002; Huizinga, 1950).

DOI: 10.4018/IJCMHS.2018010102
Brown & Vaughan (2010) stated that playing is an archetypical activity, arising from primordial biological structures within a brain, exhibited even before conscience or the development of the capacity for speech. According to this study, playing is a voluntary, seemingly pointless activity, which is genuinely attractive, with characteristics that reduce the self-consciousness and the sense of time, while enhancing improvisation and a desire to keep playing (addiction). Play triggers some very interesting elements of human psychology like anticipation, surprise, entertainment, understanding, power and balance. This study also highlights that while playing new cognitive combinations are created in the brain, in the attempt of the brain to self-develop and create world interpretations.

Neuroscientists and biologists have already reported strong indications about a positive influence of play in the development of the brain in various animals and humans (Iwaniuk, Nelson, & Pellis, 2001; Pellis & Iwaniuk, 2002; Gordon, Burke, Akil, Watson, & Panksepp, 2003; Byers, 1998a; Byers, 1998b; Byers, 1999; Diamond, Krech, & Rosenzweig, 1964). In addition, Metzinger (2009) in his work on the ego and consciousness, developed a theory which sets a framework on how the ego filters the sensed objective world into a subjective reality, creating its own reality tunnel. This theory seems to be in line with the theories of play, and provides an insight on how a brain creates its own reality within which it attempts to self-develop; in a way, play could be envisioned as an inherent natural ability to explore potential realities, towards the understanding of the world and self-development. Apparently, from this point of view, play becomes a method of paramount importance in education.

Playfulness in an educational context is currently viewed as gamification in education, or game-based learning or serious gaming. It should be noted, though, that gamification relates more to games than to play, the latter being a broader concept, including free and expressive forms, including a considerable amount of improvisation by not being strictly tied with specific rules and goals that define gaming (Deterding, Dixon, Khaled, & Nacke, 2011; Alfrink, 2011; Deterding, 2012). Furthermore, theoretical and empirical studies identified gaming and playing as two distinct modes of behavior (Barr, 2007), whereas the term exploitationware was also proposed as an alternative to gamification (Bogost, 2011). In the context of education, games have been described as games for non-leisure purposes (Hassenzahl, 2003) and as games with a useful purpose (Hill, Ray, Blair & Carver, 2003), including training, education, knowledge acquisition and skills’ development (Barr, 2007). It has been reported that, compared to traditional teaching, well-designed games have the potential to accommodate a wider variety of learning strategies (Taekman, & Shelley, 2010). As naturally expected, the motivation aspect involved in the games is the basis to promote learning (Bergin & Reilly, 2005), encouraging, at the same time, curiosity (Kumar, 1999); this also creates an impression of control over the learning process. Players engage in proactive and or anticipatory processes, recursive thinking, organization of information, general search heuristics, analysis of means–ends, and the generation of alternative solution paths (Pillay, 2002). Burguillo (2010) summarizes that educational videos and serious gaming are the main means for game-based learning engagement. A strong advantage of game-based learning is that it can be combined with various learning methodologies, such as Collaborative-based Learning (Slavin, 1980), Problem-based Learning (Hmelo-Silver, 2004; Hmelo-Silver & Barrows, 2006; Merrill, 2007) and Project-based Learning (Barrows & Tamblyn, 1980; Boss, Krauss, & Conery, 2008).

In this study, we present an attempt towards an effective intertwining of culture with education through interactive gamified storytelling. The case presented includes the design and development of a modern first-person immersive game where, in the spatial setting of present-day Athens, Greece, time has been distorted and extraordinary events call for urgent actions to restore order. The main concept was to create a modern game to support teaching of mythology and history of ancient Greece, location awareness and appreciation of local nature-environment, culture, architectural aesthetics and integration of man-made structures with nature.
Related Content

Empirical Evaluations of Interactive Systems in Cultural Heritage: A Review
[www.igi-global.com/article/empirical-evaluations-of-interactive-systems-in-cultural-heritage/178596?camid=4v1a](www.igi-global.com/article/empirical-evaluations-of-interactive-systems-in-cultural-heritage/178596?camid=4v1a)

Ten Challenges for Digital Humanities and the Way Forward
[www.igi-global.com/article/ten-challenges-for-digital-humanities-and-the-way-forward/202454?camid=4v1a](www.igi-global.com/article/ten-challenges-for-digital-humanities-and-the-way-forward/202454?camid=4v1a)
Pose Tracking in Augmented Reality of Cultural Heritage
[www.igi-global.com/article/pose-tracking-in-augmented-reality-of-cultural-heritage/178597?camid=4v1a](www.igi-global.com/article/pose-tracking-in-augmented-reality-of-cultural-heritage/178597?camid=4v1a)

Assisting Pottery Restoration Procedures with Digital Technologies
[www.igi-global.com/article/assisting-pottery-restoration-procedures-with-digital-technologies/222814?camid=4v1a](www.igi-global.com/article/assisting-pottery-restoration-procedures-with-digital-technologies/222814?camid=4v1a)