

Chapter 14

Game Based Lifelong Learning

Sebastian Kelle

Open University of the Netherlands, The Netherlands

Steinn E. Sigurðarson

Open University of the Netherlands, The Netherlands

Wim Westera

Open University of the Netherlands, The Netherlands

Marcus Specht

Open University of the Netherlands, The Netherlands

ABSTRACT

Digital Games as a means of learning have become more important in recent years. Infrastructural and sociological developments have created fertile grounds for game innovations, by exploiting the latest technologies, and a new generation of learners have welcomed this form of learning. This chapter focuses on an overview of the current state of the art of learning games, explaining different perspectives. As the gamers' generation has now grown up, the educational contexts for lifelong learning like higher and vocational education are moving into the scope of game based learning, and therefore deserve special attention.

1. INTRODUCTION

One of the striking observations when looking at game-based learning is that its definition and background go oddly beyond the human aspect of learning sciences. Animals (in essence, all placental mammals) have the ability and the drive to learn through play (Burghardt, 2005). Zoological research illuminates the importance of play for young animals to learn essential skills (Hawes,

1996). Gaming, hence, is a very natural way of self-directed learning during a phase in life, which is the stage of most rapid cognitive development. Therefore it is safe to assume that game-based learning has existed for a very long time going back to prehistoric times. Being a subspecies of the class of placental mammals, also young humans engage upon their drive to learn by gaming. The natural drive to learn through play, however, is coerced by modern society. Acknowledging the obvious demand for games that is a culturally universal phenomenon, the notion of learning

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through games, though, has a somewhat unserious flavour, especially from the perspective of formal educational systems.

In lifelong learning, however, education is usually not formally imposed on the learner. There is a high degree of “ownership of learning” that turns the situation around (Wilson et al., 2006). The learners themselves are now the main motivational instance and equipped with a fair deal of initial self-motivation. Much like subscribing to a gym, this initial motivation can, however, decrease quickly when they discover disadvantages, like getting bored or overtaxed.

The main objective of a game-based learning approach for lifelong learning is thus the sustenance of this motivation and helping learners over the hurdle of getting truly comfortable with the overall learning process they have engaged upon. While this may seem like a noble goal, the challenge is far from trivial.

For several years experts in the field of education have made thousands of games designed for education. Nevertheless, the advantages of such an approach to learning have remained obscure, and the factors required to successfully create a learning game out of a situation appear seemingly random (O’Neill, Wainess & Baker, 2005). In this chapter we explain the advantages of using a systematic approach that makes use of game design patterns (Bjork & Holopainen, 2004). These can be used for the following purposes:

- Identifying hidden game elements in a non-game-based educational scenario
- Making a game out of a non-game-based scenario
- If there is nothing to build on, designing a game from scratch.

On a general note, also we can subsume that the latest technological developments (Johnson, Levine & Smith, 2009) have created an enormous potential for learning games to be revisited. The arrival of the Web 2.0, semantic web technologies,

as well as cinematic computer graphic and mobile technologies have opened the gates to a world of possibilities we do not want to miss out on.

2. CURRENT STATE-OF-THE-ART

The state-of-the-art of games in lifelong learning is difficult to pinpoint, as scientifically relevant results on the exact intersection of the two spectra are scarce. However, there exist some approaches that can be placed in the topical proximity of our focus, showing very promising perspectives. We picked a couple of examples coming from different directions in order to provide a certain deal of coverage.

One of the more notable approaches, for example, can be found in the field of mobile learning games dealing with lifelong learning of the homosexual minority in India (Roy, Evans & Sharples, 2009). The targeted people have the societal disadvantage of being pushed into obscuring their sexuality from daily life, which makes it difficult for them to access relevant knowledge that could help them avoid related problems such as HIV infection or drug abuse. While the learning game as such makes use of the pattern of role play, hence enabling a good deal of identification with the game character, it also allows the target group to stay anonymous: the game is realized as a text message-based quest game, moderated by anonymized “peer educators”. The users can play the game accessing relevant educational content without revealing their personal attitudes to their social surroundings: operating a mobile handset is nothing that draws a lot of bystanders’ attention. While this example may seem very specialized and unique, it illustrates the enormous potential of a game-based life-long learning approach.

Another example with more generic properties is the “UniGame”, described by Pivec & Dzianbenko (2004), which is used to learn social and knowledge management skills. In this approach several teams collaborate on a simulated project,

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