Collaborative Gaming in the Gallo-Roman Museum to Increase Attractiveness of Learning Cultural Heritage for Youngsters

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1 Abstract

We present Archie: a mobile guide system that uses a social-constructivist approach to enhance the learning experience for museum visitors [1, 2]. One of the implementations we created is a collaborative game for youngsters that is build on top of a generic mobile guide framework. The framework offers a set of services that support the creation of mobile guides that (a) have a rich interactive presentation, (b) provide communication facilities among visitors and (c) allow to personalize the interface according to the user group. The framework offers other technical capabilities as well, such as location detection and voice communication.

Our game design enhances the learning experience and increases attractiveness of museum visits for youngsters. Our implementation focuses on conveying the key messages of the museum narrative by means of mobile games that relate more to computer games than to classic 'edutainment' [3, 4]. The effectiveness of our design has been validated by extensive user tests: over 400 participants used the mobile guide and evaluated it on different aspects such as usability, attractiveness and learning effects. Figure 1 shows three participants during an evaluation session of the system. One of the conclusions from these evaluations

Fig. 1. Users playing with the Archie system.

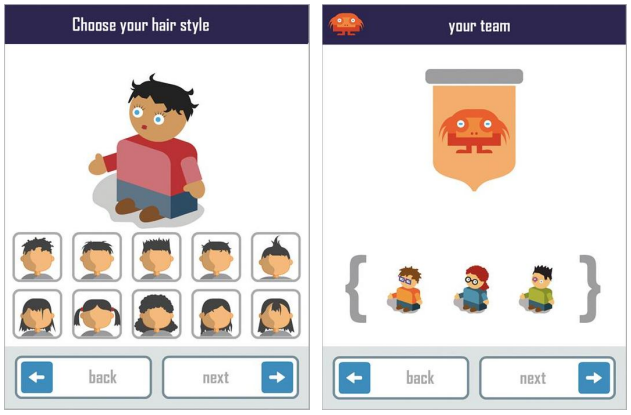
(a) (b) (c)

Fig. 2. 2(a) shows the trading game. The goal of this game is to make users aware of unequal stratifications in society around 850 BC. The game makes this inequality easier to grasp because of the specific role each user plays. 2(b) shows the farming game. This game requires players to collaborate to make the most profitable decisions to ensure a good yield from their fields. 2(c) makes the players acquainted with everyday life in a Gallo-Roman city.

was an increased motivation for learning about cultural heritage by youngsters from secondary technical education. A conclusion that was confirmed by teachers that taught this subject to the test participants.

Figure 2 shows three different games that were made and evaluated. All of them are meant to stimulate collaborative learning activities by encouraging users to communicate. These user interactions are necessary for the players to acquire the knowledge needed to complete the game. Each game is part of a greater whole and the game design is tailored to the museum content and key messages of the museum narrative. In [5] we described the process used to create such designs. To enhance the commitment of the players to the game, each player gets to adapt his/her own avatar which accompanies him/her throughout the entire museum game (Figure 3). Via these personalized avatars, the players can imagine themselves beying in the historical circumstances we evoke during the games. In every game, the avatars of a team find themselves in one of the historical periods covered by the museum narrative, facing a challenge specific to that period.

In our demonstration, we show the creation of an avatar for individual users. Next, players are put together in a team and start with the museum game. We show one of the games that is exemplary for our overall approach: the team needs to collaborate intensely and interact with the museum environment to get to know how to spend a day in a typical Gallo-Roman city.



(a) (b)

Fig. 3. 3(a) Creation of the personal avatar. 3(b) A player joins a team, indicated by its avatar that is shown together with avatars of team mates.

References

1. Falk, J., Dierking, L.: Learning from Museums: Visitor Experiences and the Making of Meaning. Altamira Press, Walnut Creek (2000)
2. Hein, G.: Learning in the Museum. Routledge, London (1998)
3. Egenfeldt-Nielsen, S.: Beyond Edutainment. Exploring the Educational Potential of Computer Games. Unpublished PhD Thesis, IT-University of Copenhagen (2005)
4. Gee, J.P.: What Video Games Have to Teach Us About Learning and Literacy. Palgrave Macmillan, New York (2003)
5. Van Loon, H., Gabriëls, K., Luyten, K., Teunkens, D., Robert, K., Coninx, K., Manshoven, E.: Supporting social interaction: A collaborative trading game on pda. In: Selected papers from Museums and the Web 2007. (2007) 41–50