



## An alternate reality game for language learning: ARGuing for multilingual motivation

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### ARTICLE INFO

#### Article history:

Received 27 May 2010

Received in revised form

10 January 2011

Accepted 11 January 2011

#### Keywords:

Alternate reality game

Motivation

Web2.0

Moodle

Language education

Quests

Puppetmaster

### ABSTRACT

Over the last decade, Alternate Reality Games (ARGs), a form of narrative often involving multiple media and gaming elements to tell a story that might be affected by participants' actions, have been used in the marketing and promotion of a number of entertainment related products such as films, computer games and music. This paper discusses the design, development and evaluation of an ARG aimed at increasing the motivations of secondary school level students across Europe in the learning of modern foreign languages. The ARG was developed and implemented as part of a European Commission Comenius project and involved 6 project partners, 328 secondary school students and 95 language teachers from 17 European countries. The collaborative nature of ARGs provides a potentially useful vehicle for developing collaborative activities within an educational context. This paper describes the educational value of ARGs, in particular the ARG for supporting the teaching of modern European languages and the specific activities that were developed around Web 2.0 and gaming that underpinned the ARG and helped promote cooperation and learning within an educational environment. An evaluation of the ARG was conducted using an experimental design of pre-test → ARG intervention → post-test. 105 students completed the pre-test, 92 students completed the post-test and 45 students completed both the pre-test and post-test questionnaires. In general, student attitudes towards the ARG were very positive with evidence suggesting that the ARG managed to deliver the motivational experience expected by the students. The majority of students who completed the post-test either agreed or strongly agreed that they would be willing to play the game over a prolonged period of time as part of a foreign language course. In addition, through using the ARG, students believed that they obtained skills relating to cooperation, collaboration and teamwork.

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### 1. Introduction

Serious games and games-based learning have made progressively significant contributions in helping to promote enhanced learning experiences within education in recent years. According to Connolly, Stansfield, and Hainey (2007) games-based learning can be defined as the use of computer games-based technology approach to deliver, support, and enhance teaching, learning, assessment and evaluation. Prensky (2001) argued that learning was unengaging as compared to media such as computer games and that younger generation 'digital natives' have grown up in a technologically sophisticated environment which has led to changes in their attitudes and expectations which has created fundamental differences with the pre-digital generation of 'digital immigrants' which include many of today's educators. According to Shaffer, Squire, Halverson, and Gee (2004) computer games "bring together ways of knowing, ways of doing, ways of being, and ways of caring: the situated understandings, effective social practices, powerful identities, and shared values that make someone an expert". Gee (2003) identified 36 different learning principles as to why games are good for learning which include: identity (how a game captures and immerses a player); interaction (appropriate feedback providing additional problems based on player decisions); production (players seeing the consequences of decisions they make); risk taking (allowing a player to experience a minimal of real world consequences or no consequences at all); customisation (players being allowed to customise their own desired attributes providing a sense of ownership over what they are doing). O'Neil, Wainess and Baker (2005) highlighted the perceived instructional usefulness and benefits of computer games

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as providing complex and diverse approaches to learning processes and outcomes, interactivity, the ability to address cognitive as well as affective learning issues, and what they regard as most importantly that of motivation for learning.

With the increased adoption and use of Web 2.0 or social software applications within the classroom environment, there have been increased opportunities to use technology in a much more collaborative and participatory manner in promoting enhanced information access, sharing of ideas, information and knowledge exchange and content production (McLoughlin & Lee, 2008). This paper explores the use of one such technology – an Alternate Reality Game (ARG) that involves multiple media, interactive narrative among participants, and story telling and gameplay that is affected and influenced by the actions and ideas of the ARG participants. Although ARGs have previously been developed and implemented as promotional and marketing tools for entertainment related products, ARGs can provide a useful educational context and platform through their collaborative nature and opportunities for students to explore ideas and views with each other, search for relevant information and engage in problem-solving tasks related to learning modern languages. The ARG project was part of a European Commission Comenius project that ran from 2007 to 2009 entitled 'ARGuing for Multilingual Motivation in Web 2.0' and comprised 6 European partners, with 328 14–16 year old students and 95 language teachers participating in the study from 17 European countries. The ARG itself was developed through adapting the open-source Learning Management System, Moodle, into a multilingual gaming environment. This paper explores the design, development, implementation and evaluation of the ARG, highlighting its potential value within the context of modern language learning.

In the next section, we discuss the use of games within language learning and, in particular, discuss the use of ARGs both as a marketing tool and as an educational tool. In the section thereafter, we examine the design of an ARG for language learning and the design of the *Tower of Babel* ARG that we have produced. We then provide an evaluation of the *Tower of Babel* ARG and future directions.

## 2. Previous research

### 2.1. Games and language learning

As noted by Crookall (2007), language teachers make great use of simulation/gaming methodologies and there are many supporting textbooks and research papers that present various forms of role-play, games, simulations, and other exercises (e.g. Garcia-Carbonell, Rising, Montero, & Watts, 2001; Gaudart, 1999; Halleck, 2007). While many of the simulations/games used are non-computer based, during recent years the computer game has become an important development in popular culture. There have been a number of projects that have used computer games to support the teaching of modern foreign languages and we briefly give examples of three:

#### 2.1.1. EverQuest II

Rankin, Gold and Gooch (2006) use an MMORPG (Massively Multiplayer Online Role Playing Game) called EverQuest II to support the teaching of English as a second language. This game was preferred to the more popular World of Warcraft MMORPG because everything in the game was labelled, so students have an opportunity to obtain visual reinforcement of information. In addition, the quests in the game are documented and displayed on the screen. As students complete these quests, they develop an appreciation for verbs, adverbs, and colloquial meanings. An 8 week pilot study was carried out with 6 students – four men and two women – who were either Northwestern graduate students or spouses of Northwestern graduate students. Two of the subjects were native speakers of Korean, two spoke Chinese, and two Castilian. They all played the game for at least four hours per week. The study was “highly preliminary” but the results suggested that EverQuest, and possibly MMORPGs in general, reinforce language acquisition for a number of reasons. The pursuit of quests, for example, requires players to become “active learners” who engage with other players and the gaming environment. The study also supports the conclusion that the games are inherently motivating.

#### 2.1.2. Second life

Second Life (SL) is a persistent online 3D world or “metaverse” (Rymaszewski et al., 2007). Users, called “residents”, access the system with a downloadable client program called the Second Life Viewer and interact with content and other residents through a customisable avatar. Second Life has parks, shops, schools, museums, islands and beaches, all designed and maintained by the residents. It is also supported by an economy and a virtual currency. Residents can buy virtual land, build a virtual house and fill it with virtual furniture and they can explore, meet other residents, socialise, and participate in individual and group activities. SL provides simple tools for constructing 3D objects and scripting tools for creating interactive content. Of importance to this paper is that SL has been used for educational purposes and several colleges and universities have virtual classrooms. In the context of foreign language learning, there are a number of institutions and commercial organisations providing language education. For example, Spain's language and cultural institute, Instituto Cervantes, has an island on Second Life. The social aspect of learning is usually an important factor, indicating a social constructivist approach to teaching and learning. While there are several projects aimed at learning languages, the approach is relatively new and there is a clear lack of empirical evidence or even experience to demonstrate the effectiveness of the approach.

#### 2.1.3. Tactical language and culture training system

Johnson (2007) describes the Tactical Language and Culture Training System. A version of the system, called Tactical Iraqi, has been developed to help military personnel communicate effectively and safely in Iraq through a combination of interactive lessons and games. It focuses on spoken communication, non-verbal communication and cultural knowledge relevant to face-to-face communication. The system consists of three modules:

- The Skill Builder, which consists of a one-to-one interactive tutoring environment that focuses on task-oriented communication skills (vocabularies; pronunciation; and cultural behaviours, their meaning and uses).
- The Arcade Game, which is set in a maze and the streets of an Iraqi town and comprises a set of interactive arcade-like games to practice and learn the Arabic vocabularies for colours, numbers, and understanding and giving directions. It supports two modes of play: listening, where learners follow spoken instructions spoken, and speaking, where learners speak the instructions.

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