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A Design and Development Approach to Researching Online Arabic Vocabulary Games Learning in IIUM

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Abstract

This paper describes the design and development process of an online Arabic vocabulary games learning prototype for elementary learners at the Centre for Foundation Studies (CFS), International Islamic University Malaysia (IIUM). The effort to produce this learning prototype is an attempt to integrate game-based learning in an online environment, to provide new learning experience for learners who have been through a traditional Arabic teaching and learning methods, and to collect and analyze their feedbacks and responses as the formative evaluation of the prototype. The exploration of the game-based learning prototype potential for use in teaching and learning in real setting by learners and teachers is also among the steps taken to evaluate the practicality of the prototype.

1. Introduction

Game-based learning (GBL) is a new model of e-learning which has its potential in teaching and learning (Prensky, 2001; Squire, 2005, et. al). The term GBL describes the teaching and learning process by computer games similar to other terms such as digital game-based learning (Prensky, 2001) and edutainment & 'serious games'. (Tsai F.H., et. al, 2008). Somehow, 'serious games' differ from edutainment games in terms of more advanced design consideration, latest hardware and software and rules of simulation (Michael & Chen, 2006). The online mode is used for this prototype because it allows learners regardless of their geographic location to participate independently in the learning environment (Connolly & Stansfield, 2006). It is played on a computer platform which has the internet connection; the

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games are stored and played directly form the server (Roslina & Azizah, 2008). An online platform is also chosen for the games. Prototype to facilitate the usability and easy-access of this application for the Arabic language learners.

2.　Design and Development Methods

The design and development of games is not an easy process. It requires extensive programming from the development of game engine, middleware, interface programming, audio programming and so on. However, a number of easier tools such as some functional authoring tools and drag and drop interface. (Roslina & Azizah, 2008) have been recently developed,. The design and development process of Arabic games prototype described in this paper is an integration of Arabic learning contents from the traditional learning aid of text book with the Raptivity e-learning authoring software which comprise a multitude of game templates. The selection of this software is due to several reasons such as its supportive features for the correct display of Arabic fonts and Arabic writing system from right to left. It is also a tool that can be easily used by educators without the needs of high level computer skills, which is a common problem faced by the Arabic language teachers (Mohd Feham & Isarji, 2006; Mohd Feham, 2006; Zawawi, 2008).

The design and development of the Arabic prototype are based on the methods and approaches of design and development research (Richey & Klein, 2007), which was formerly known as developmental research (Richey, Klein & Nelson, 2004). This method is also known as designed case (Reigeluth & Frick, 1999), design-based research (Reeves, 2006 & Herrington, et. al, 2007), formative research (Nieveen, 2007), design research (Bannan-Ritland, 2003; Van der Akker, 2007) and many more. Although many terms have been used to explain and describe this research method within its similarities and differences, it signifies an extension to other educational research methods to test theory and validate its practices. (Richey & Klein, 2007) as was first proposed by Brown & Collins in the 1990s.

Design and development research or design-based research methods focus on designing and exploring the whole range of designed innovations: products, artefacts and models as well as less concrete aspects such as programmes, activity, scaffolds, and curricula. As suggested by Bell (2004),

> Design-based research with its focus on promoting, sustaining, and understanding innovation in the world should be considered a form of scholarly inquiry that sits alongside the panoply of canonical forms ranging from the experimental, historical, philosophical, sociological, legal, and the interpretive.

The main research goal is to develop instantiations or approaches for solving human teaching and learning while at the same time, construct a body of design principles that can guide future development efforts (Reeves, 2000). It integrates both a theoretical orientation and pragmatic goals relevant to practitioners, as aptly put by Anderson (2004:8)

> …unlike many forms of qualitative research, it goes beyond understanding the context from participants' perspective to actively working with participants to improve, assess and re-design the critical educational context in which learning happens. …Not only does development research warrant an active approach to design, redesign and investigating constructs that are relevant to the researcher, learners and instructors, it surpasses the action research genre that tend to ignore theoretical development or implications.

Table 1. illustrates the elements of a design and development research.