Evaluating Computer Games for the Professional Development of Teachers: The Case of Atlantis Remixed

Hakan Tüzün, Faculty of Education, Department of Computer Education and Instructional Technology, Hacettepe University, Ankara, Turkey
Tansel Tepe, Muallim Rıfat Education Faculty, Department of Computer Education and Instructional Technology, Kilis 7 Aralık University, Kilis, Turkey
Tülay Dargut Güler, Faculty of Education, Department of Computer Education and Instructional Technology, Çanakkale Onsekiz Mart University, Çanakkale, Turkey
Fatih Özer, Turkish Republic Ministry of National Education, Ankara, Turkey
Volkan Uluçınar, Turkish Republic Ministry of National Education, Ankara, Turkey

ABSTRACT

This study aimed to analyse the usefulness of educational computer games in teachers’ professional development. The study used the game Atlantis Remixed, which is intended to be a technologically rich and individualized learning environment. The study used formative research to demonstrate what works and what does not work for the use of educational computer games in teachers’ professional development, and improvements to be made for this purpose in learning environments in Turkey, where schools are equipped with technologically rich learning and teaching environments as part of the FATIH (the Movement to Increase Opportunities and Technology) project. The study included ten participants. Of these, five were teachers who participated in the implementation, and five were instructional technology experts. The study found both positive and negative results with respect to the use of Atlantis Remixed for teachers’ professional development and articulates the participants’ opinions and suggestions.

KEYWORDS

Computer Games, Computer Uses in Education, Educational Software, Information Technology, Teacher Professional Development

INTRODUCTION

As in many other professional fields, professional development is a part of teachers’ careers. Professional development is systematic, sustainable and extensive training performed based on teachers’ needs. With professional development, it is intended to increase the instructional effectiveness of courses and students’ academic achievement (Reese, 2010). Considering that all investment in teachers is actually made in individuals who will eventually form our society, it is an important part of teachers’ profession that they improve their knowledge and skills based on innovations and
development in education (Odabaşlı & Kabakçılı, 2007). Teachers’ professional development can be supported with face-to-face activities, summer seminars, and conferences, and new resources and means for these activities have been enabled by the popularization of the Internet (Reese, 2010).Researchers have begun to design online professional development programs that are adaptable to teachers’ busy schedules since they can be accessed anytime and anywhere (Dede et al., 2009). Another benefit of online training is that they make teachers interact with each other while they are in different physical environments. The digital environments created for this purpose can either be social networks or computer games that include social interaction.

Currently, computer games have a growing number of users. Many studies (such as Barab et al., 2005; Rieber, 1996; Tüzün et al., 2006) of their use for educational purposes concluded that these games have positive effects. One of the greatest benefits of computer games, which offer amusing environments to students, is that they increase students’ motivation (Bakar, Tüzün, & Çağiltay, 2008). According to Malone and Lepper (1987) challenge, curiosity, control, and fantasy items can motivate learners during the game play. In addition, Tüzün (2004) found 13 items that make digital games motivational: identity presentation, social relations, playing, learning, achievement, rewards, immersive context, fantasy, uniqueness, creativity, curiosity, control and ownership, and context of support. Students learn better when they are more enthusiastic about their lessons (Prensky, 2001).

Educational computer games can be adapted to all levels of education (Pre-school, primary education, secondary education, higher education, undergraduate, etc.) are also available for teachers’ professional development. Computer games can train teachers and give them a positive attitude towards computer games. Koh et al. (2012) stressed that teachers, one of the most important elements of the educational process, need to be open-minded about computer games (Kebrichtli et al., 2009; Spodark, 2003) and have a positive attitude towards computer games for them to be used effectively in education. Besides, students are also one of the most important elements of the educational process (Rouse, 2005). Kirriemur and McFarlane (2004) stated that computer games can improve students’ skills such as strategic thinking, planning, communication, use of numbers, interviewing skills, group decision making, and data processing. For these reasons computer games can be integrated into classes.

FATIH (the Movement to Increase Opportunities and Technology) Project, conducted by Turkish Republic Ministry of National Education, is one of the biggest investments in education in national history. It was initiated in the year 2010 and is still in progress. The project has five components: 1) hardware and software infrastructure, 2) the provision and supervision of educational e-content, 3) the effective use of Information Technology (IT) in curricula, 4) conscious, reliable, manageable, and measurable IT use, and 5) in-service teacher training. In the context of hardware and software infrastructure, the project aims to provide an interactive board for each classroom, a multi-functional printer for each school, and tablets to all students and teachers starting in elementary school. (MEB, 2015).

The provision and supervision of educational e-content involves both preparing educational e-content with variety of activities that focus on the effective use of IT in lessons and designing educational games that simultaneously teach and entertain. For the effective use of Information Technology (IT) in curricula, the project created a portal called the Education and Information Network (EIN) to enhance instructional environments and presented it for the use of teachers and students. The EIN has an organic structure and is continually being renovated. It also includes a variety of types of e-content. Conscious, reliable, manageable, and measurable IT use planned for schools to be provided with fiber Internet connections. System control rooms were created to provide a safe connection with a steel ceiling system that includes all the wires in the schools. Installation was completed in some of the schools selected for the project. Moreover, the project trained instructors to explain safe Internet use to students and teachers and prepared a booklet on this subject.
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