

# Effects of computer games essay sample

[Entertainment](#), [Games](#)



Geography's study area is "the world and all that is in it" (Fitzpatrick, 1993, p. 156). Economical, political, scientific, and military impacts of geography have become crucial in our daily lives as the world has become a global village in the 21st century. Interpreting ordinary issues in this era requires a solid understanding of geographic issues ranging from economy such as the argument between the USA and China over their trade deficits to politics such as the involvement of NATO in the European missile defense system, and from science such as the discovery of new animal species around the world to military such as conflicts in the Middle East. Interest in teaching and learning about geography is declining on the contrary, and as a result the society encompasses a large number of geographically illiterate citizens (McNail, 1987). Related literature

In response to the decreasing interest towards geography, instructors, academicians, and practitioners have investigated about how students should learn about this subject matter. Castleford and Robinson (1998) observed the lecture as being the principal mode of teaching by geography instructors. On the other hand, many studies have pointed to the changing student characteristics in the new era, and indicated the need for a shift to a new pedagogy (Fitzpatrick, 1993; Hill & Solem, 1999; McNail, 1987). In these learning contexts the characteristics of the new pedagogy are articulated through authenticity. This authenticity sees learners deal with issues of local and global significance, using real-world data, and building on personal interests, while taking responsibility for their own learning, and the instructors' roles shift to one of facilitation (Castleford & Robinson, 1998; Lemberg & Stoltman, 1999; McNail, 1987). Although, the employment of

Information and Communication Technology (ICT) rich learning environments in geography can support the implementation of new ped- 0360-1315/\$ – see front matter 2008 Elsevier Ltd. All rights reserved. doi: 10. 1016/j. compedu. 2008. 06. 008

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The implementation of a computer game for learning about geography by primary school students is the focus of this article. Researchers designed and developed a three-dimensional educational computer game. Twenty four students in fourth and fifth grades in a private school in Ankara, Turkey learnt about world continents and countries through this game for three weeks. The effects of the game environment on students' achievement and motivation and related implementation issues were examined through both quantitative and qualitative methods. An analysis of pre and post achievement tests showed that students made significant learning gains by participating in the game-based learning environment. When comparing

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their motivations while learning in the game-based learning environment and in their traditional school environment, it was found that students demonstrated statistically significant higher intrinsic motivations and statistically significant lower extrinsic motivations learning in the game-based environment. In addition, they had decreased focus on getting grades and they were more independent while participating in the game-based activities. These positive effects on learning and motivation, and the positive attitudes of students and teachers suggest that computer games can be use

## CHAPTER 1

### INTRODUCTION

This study aims to explore motivational effects of computer games on elementary school students. For this purpose, a game was developed using Tomb Raider 4 engine and The Instructional Materials Motivation Survey (IMMS) was used to measure the motivational level of the students.

#### 1. 1. Background of the Study

Promising features of video games are interactivity, engagement and state-of-the-art computer technologies. As part of their educational potential in nature, video games are lately more and more considered by educators. They have high-quality multi-sensory rendering environment, hence students find the chance to experience “learning by doing” in the environment. However, the main reasons for this increasing interest are the medium’s success, players’ motivation and their deep engagement while playing games (Denis & Jouvelot, 2005). It is commonly accepted that computer games have positive effects on players’ motivation (Malone, 1981; Garris et

al, 2002; Alessi & Trollip, 2001) Moreover, game-playing has educational value (Crawford, 1982). Research on using games in educational settings is relatively new and is rapidly growing (Kirriemuir & McFarlane, 2004).

There are some obstacles implementing games to educational settings (McFarlane, Sparrhowk, & Heald, 2002). Although there are some research studies on making use of commercial games in school settings, content of such games generally do not match with the curriculum (McFarlane, Sparrhowk, & Heald, 2002).

One leading study on motivation in games was conducted by Malone to answer the question “ what makes computer games so interesting and exciting for children” (Malone, 1980). Malone explained essential characteristics of good computer games and other intrinsically enjoyable situation in three categories; “ challenge”, “ fantasy” and “ curiosity.” Later with Lepper, he added “ control” to this list. (Malone & Lepper, 1987). However, they mainly examined video games for entertainment (Tuzun, 2004).

To identify motivational elements for an online multiplayer educational computer game, Tuzun used Quest Atlantis which is an educational online computer game. In Quest Atlantis, students complete the educational activities (quests) to save the Atlantis from disaster. He found thirteen motivational elements in this respect: identity presentation, social interaction, playing, learning, ownership and control, fantasy, immersive

context, curiosity, creativity, achievement, rewards, uniqueness, and context of support (Tuzun, 2004).

### 3 1. 2. Statement of the Problem

Game generation is simply thinking differently from the previous generations and their educational needs are different from the previous generations' (Prensky, 2001). Marc Prensky developed ten cognitive characteristics of game generation children versus previous generations. Game generation children can process information much faster and do parallel processing. However, teachers lecture in a slow manner to ensure students' understanding. Often the students who play games disrupt the class environment because they get bored. In that sense, students have changed; however, the teachers have not changed to satisfy the new learner as explained (Prensky, 2001). However, implementing games to educational settings is not that easy. One of the obstacles while using games in schools is the mis-match between the games and the curriculum (McFarlane, Sparrhowk, & Heald, 2002). There is not much study intending to match educational games with the curriculum and their effects on students' motivation. It is so obvious that there is a need to conduct more and more research on content related games in the schools and their effects on students' motivation.

### 1. 3. Purpose of the Study

Motivation is described as “ the reasons that explain or justify actions.” (Denis & Jouvelot, p. 1, 2005). Since motivation is a key element in education, and in the case of game generation students' needs are different, there is need to understand how computer games effects students'

motivation towards courses. 4 Aim of this study was to investigate whether motivational effects of computer games are related with gender, computer use and game play or not. Therefore, research question of the study was such:

- Is learner motivation in computer game based learning related to students' gender, computer use and game playing?

Sub-research questions are as the following:

- In terms of ARCS scores, is there a significant mean difference between girls and boys?

- In terms of ARCS scores, is there a significant mean difference between the three groups of students divided according to their weekly computer use? -

In terms of ARCS scores, is there a significant mean difference between the three groups of students divided according to their weekly game playing? 1.

#### 4. Significance of the Study

Although many educators discuss the motivational effects of the computer games, there is little empirical study on this issue (Gabrielle, 2003; Klein, & Freitag, 1991). This study seeks motivational effects of an educational computer game on elementary students.

The key element of an individual's engagement in an activity is motivation (Asgari, 2005). The best educational software will not make sense if the students are not ready to learn. In other words, it is necessary to motivate students to learn in order for making best use of an educational software.

This study aims to explain motivational value of educational computer

games and the effects of gender, weekly computer use and weekly game playing on motivation. 5 1. 5. Definitions of Terms

**Motivation:**

In this study, motivation is defined as the students' interest to the content of the lesson and and willingness to make use of the materials used in this study which are measured by Instructional Materials Motivation Survey (IMMS). Educational Game:

Educational game is a sub-category of games and it aims to create a change in players' knowledge. In this study game or educational game terms refer to games in the computer environment. Gameplay:

In computer or video games, all the experiences of the a player during the interaction with the game system is called the gameplay. In this study, the “gameplay” terms is used for that purpose. However “ game playing” represents students playing the games