

Factors Effecting on Game Preferences of Children

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ÖZET

İnternet gittikçe daha çok popülerite kazanmıştır ve birçok insan için ana bir bilgi kaynağı haline gelmiştir. Bu sanal dünya sadece bilgi değil, insanlar, özellikle de çocuklar arasında çok ilgi çeken parçalarından biri olan oyunlar gibi eğlenceli temalardan da oluşmaktadır. Bu yüzden, bu tür oyunlar öğretimi daha etkili yapmak için kullanılmaya başlanmıştır. Bu çalışmanın amacı web ortamında olan oyunları “*oyunun dizaynı*”, “*karakter özellikleri*”, “*kullanım*” ve “*karmaşıklık*” açılarından neyin onları bu kadar çekici yaptığını daha iyi anlamak için incelemektir. 7-13 yaş arasındaki yaz okulu öğrencileri arasında en popüler oyunlar olan “*Sonic*” ve “*Babbie*” bu nitel çalışmada incelenmek için seçilmiştir.

Anahtar Kelimeler

Bilgisayar oyunları, eğitimsel oyunları, öğrencilerin oyun tercihleri.

SUMMARY

İnternet is getting more and more popularity that for many people it becomes the main information source. It includes not only information but also enjoyable themes such as electronic games that are one of the most attractive components of the virtual world among people, especially for the children. Therefore, such games have started to be used in educational settings to make learning more effective. The purpose of this study is to investigate the web-based games in terms of their “*game design*”, “*character features*”, “*usability*” and “*complexity*” to better understand what makes them so attractive. The most popular games, ‘*Sonic*’ and ‘*Babbie*’ among the summer school children between 7-13 ages were chosen for this qualitative study.

Keywords

Computer games, educational games, children’s game preferences.

INTRODUCTION

Literature Review

Computer games are the vehicles, which have a growing audience day by day because of their attractive features such as realistic environment, character roles, sounds, colors etc [1]. However, not only its features but also Internet causes growing its popularity. As a result, web sites having computer games became one of the most popular web sites. Computer games’ being so popular brings the idea that they can be used as a learning material as Chen at al. said “...since the children likes to play a game, the children may have more motivation to learn and because of this reason they can be integrated learning materials” [2] (pp.1). According to Prensky, six structural components characterize games. They are; “*rules*”, which organize the games, “*goals and objectives*”, which are strived to achieve by the players, “*outcome and feedback*”, which measure the progress against the goals, “*conflict*”, “*competition, challenge and opposition*” which lead to players’ excitement, “*interaction*”, which is the social aspect in the game and the representation or story exaggerating interesting aspects of reality [6]. It is known that children enjoy playing games according to given rules, they also continuously modify rules and inventing their own.

Educators learned facilitates about designing engaging environments, most of which have become incorporated into student centered learning environments [3]. Game like learning environments is one of them. Electronic gaming technology has improved remarkably, however, very little has been done to study how these developments may be integrated within learning environments. Many educators have begun using commercially available “*edutainment*” products, but there has been limited research into how these environments work.

Because of the potentials of computer games, some educators and instructors have started to use them in educational settings in order to enhance children’s learning. They want to use computer games’ some characteristics while creating better learning environments. For example, keeping children’s motivation high in a lecture is very hard and educators suffer to draw their attention to the related context. However, games may

accomplish this mission easily. There are some studies in the literature related to this context. For example, Malone and Lepper present a relationship between learning and intrinsic motivation [5]. Their research is based on an investigation of children who played computer games. They identify seven key elements for creating an intrinsically motivating instructional environment: *challenge*, *curiosity*, *control*, *fantasy*, *cooperation*, *competition*, and *recognition*. Some researchers have stated that computer games are at least as effective as other methods for teaching knowledge about facts, concepts and application of knowledge [8]. They believe that computer games have positive impact on participant's attitudes.

Gender difference is an important factor that should be taken into account while designing a game. Proportion of the game sales are affected by the gender differences in the market area in terms of the stories, characters, and worlds created [4]. Boys' games are much more commercially available than the girls' ones and they generally include violent elements, which are one of the most prominent features in commercial computer games [7].

While educational games have gained wide acceptance and a certain degree of respect those produced for entertainment are generally believed to be devoid of educational value. Educational games could not be as attractive as commercial games for children. The reasons behind this may be related with their content design, characteristics, features, usability and complexity. Many educators complain that educational games can not compete with entertainment only games. Children prefer playing such games rather than educational ones. In order to explore what makes them so attractive for children, this study was designed to investigate entertainment only web based games in terms of their "*game design*", "*character features*", "*usability*" and "*complexity*".

Research questions of the study are;

- * Which characteristics of the games attract children in terms of "*game design*", "*character features*", "*usability*" and "*complexity*"?
- * What are the deficiencies of educational games compared to entertainment only ones?
- * What are the children's expectations from educational games?

METHOD

The approach used in this study is case study and includes qualitative content analysis of two games called "*Sonic*" and "*Babbie*" which were played by children in a summer school course.

Subjects and Procedure of the Study

This study was conducted in a summer school course in 2005 by two researchers. 56 children among 7-13 ages participated to the study. There were two groups, which formed according to ages. One group consisted of 26 children among 7-9 year-old and the other group consisted of 30 children among 10-13 year-old. The children were from different schools in Ankara even a couple of them were from different cities.

At the beginning of the course children were asked to play any game from any web site on the Internet. The researchers observed that most of them selected "*www.kraloyun.com*" game web site which contains hundreds of games under 10 categories like Adventure, Target, Sport, Competition, Fight, Competency, Children and 2 Player as well as The Mostly Preferred Games and the Game of the Week. However, we did not examine all of these games in the study. We preferred to investigate the most popular games, '*Sonic*' and '*Babbie*', of this web site. Criteria for selecting this web site and these games were based on our observations and interviews conducted with children of whom majority played these two games.

It should be also noted that as indicated in the literature, gender differences emerged as an important factor which influence the game selection. In this study almost all boys played "*Sonic*" and most girls played "*Babbie*" during their game hours in the summer school. "*Sonic*" is one of the most popular games of this web site. Similarly, "*Babbie*" is at the high ranks in the most played games list.

Data Collection and Analysis

The main data collection method of this study was semi-structured interviews that were conducted with each group. Additionally, the children's preferences were observed and analyzed by taking field notes.

The main method of the data analysis was content analysis. The categories of the analysis were referenced from literature and interview results. Actually, the categories used to analyze selected games were stemmed from current studies but children's opinions that were reflected in semi-structured interviews were also benefited to create new categories, for example although *complexity* were placed as a usage challenge about instruction in the literature, it means one of the game features in our study. Because literature covers it as the instruction feature not game usage. Then according to "*game design*", "*character features*", "*usability*" and "*complexity*" categories

sonic and “Babbie” were analyzed. Content analysis consisted of three phrases: analysis of literature and interview notes, developing categories and analysis of games according to these categories. Moreover, observations were conducted to provide triangulation in addition to demographic data collected because the genders, economic were thought to be effective in selecting a game.

RESULTS

We analyzed the data with regard to latent content analysis. We began with four general findings and explained all of them under the titles, which separated as “*game design*”, “*character features*”, “*usability*” and “*complexity*” to give detailed information. These headings are named according to categories developed before. Then we have combined the findings with a holistic approach.

Game Design

“Game Design” is one of the most important issues in creating a game, not only for the educational game but also entertainment games. According to our interview result as well as literature indicators, there are some issues that should be taken consideration by the game designers to make the game popular among children. Interview results showed that children like to control and arrange the game components easily. They also want to change characters’ roles as well their features.

Children’s opinions related to the game do not have much educational aspects as well. Moreover, children’s opinions related to the game revealed they do not sit in front of games explicitly learn something from the games. Their expectations about the game are mainly having enjoyable time and being successful. It may be argued that in a game like learning environment didactic features must be minimized.

Interface design of “Babbie” has more features than “Sonic” in terms of children’s control. They can dress their characters whatever they want by using trousers, shoes, clothe given within the game. Girls reported that they like to have more components. Besides, many children pointed out that although they had learned the game from their peers, they did not want to learn everything about the game from their peers. In other words, they wanted to explore the games.

Character Features

One of the most effective aspects of the games is “Character Features” that they include. According to our interviews, children stated that the main reason why they select and play these games is too much is related with the game characters. The character in “*Sonic*” has many specific features in order to accomplish the levels and finish the game. For example, it can jump, round, go fast, pick marks etc. Moreover, it was observed that while they are playing the game, they trust their character extremely. They sometimes talk to it when they face with a difficult level.

Although many children select *Sonic* in terms of its character, this situation is one of the main drawback for game designers due to the children high expectation about game and characters in it. Similar to boys, girls also stated that they like characters of the “Babbie”. However, they prefer many characters in game unlike boys as well. Game includes plenty of characters having different appearances and characteristics.

Usability

“*Usability*” issues are much more connected with the interface design, such as functionality as well as consistent navigation and non-standard interaction. Our study also supports usability by indicating that most children did not like much explanation; only want to start the adventure. So, the game has to be self explanatory. The learning curve should not be steeped and if possible they should start to play a new game immediately.

Besides, interface design refers a esthetics issue such as button design, colors used in the games, environment. The study shows that age is an important factor for the usability. Instructors helped young children to play the games. Moreover, the young children want to get much more instruction rather than elder children.

Complexity

Although the “*Complexity*” placed in the literature, this category has another meaning in our study. In the literature this category refers to instructions arranging from simple to complex in educational games. However, in this study it means that the games being easy to be used. In other words, it refers to simplicity of the games while they are being played.

DISCUSSION and CONCLUSION

Today, most of the games preferred by the children are not educational games. In order to develop more appealing educational games, research studies, which aim to give clues to game designers and educators about designing games, should be conducted. Although there are many studies about the children's game preferences, limited number of them searches the issue in terms of the game contents. Therefore, this study aimed to fill this gap by investigating two of the most popular games, "*Sonic*" and "*Babbie*" in terms of their content.

The results of the study may guide educational designers to reflect expectations and preferences of children to electronic games. In other words, educational designers may benefit from this study in game design. For example, children's expectations about desire to control the games or to explore the game on their own have to be implemented educational games.

According to the results of the study, we may conclude that characters (avatars) in games are one of the most effective factors for children who want to play a game. Children emphasized features of the characters they like in the game too much. They compare their most favorite characters while they are playing with each other. Although all characters have the same features in the game, children think that when they achieve given task in the game or level, they success this by getting help from their characters. Also, children want to have some supernatural characteristics when they play computer games. Especially boys prefer these kinds of characters in the games rather than girls. So, different fantastic elements in games have to be provided for children.

Moreover, related factors such as game interface, control mechanism in the games are important reasons to select a game. Children want to have more control while playing a game such as choosing their own characters or changing some aspects of the games. Usability and complexity are other issues affect the children's preferences. In fact, children want the game environment and games' being simple.

Achieving given tasks or levels is the main playing rule of computer games. Children want to deal with levels of the game. However, "*Babbie*" does not have such kind of characteristics. Some of the girls stated that they get bored after playing long times. We might infer that levels of the games are one of the most important factors that children's motivation and retention are influenced. Girls stated that when they play games without levels, they get bored as well. On the other hand, boys like their favorite game because it has many levels. Complexity is an important issue in computer games. According to children's opinions, we might conclude that most of the children prefer to stop playing the game when they cannot pass a level for a long time. On the other hand, if the game is very easy, they get bored and due to insufficient motivation of the children, they try to play another computer game.

Children want to enjoy while they are playing computer games. Because of this reason, both computer game designers and educators should provide entertainment factors to the children. Some children criticized educational games because they have many educational factors than enjoyable ones. They stated that when they play these kinds of the games, they get bored after some times, and they get rid of playing the games.

At the end of the study, we might conclude that commercial games have more enjoyable characteristics in terms of play structure characters and interface design than their educational counterparts. At this point, game developers and educators may some lessons. They should balance educational and entertaining features while designing educational games. Educational context should also be embedded within games transparently. To conclude we can say that educational game designers should consider children's expectations while designing and using educational games. Well-designed educational games may attract children more and help them better learn.

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ÖZGEÇMİŞ

Kürşat Çağiltay. ODTÜ Matematik bölümünden 1988 yılında mezun olmuş, 1993 yılında ODTÜ Bilgisayar Mühendisliği'nden Yüksek Lisans derecesini almış, 1988-1997 yılları arasında ODTÜ Bilgi İşlem Merkezinde Bilgisayar ağları grup yöneticiliği ve bilgisayar işlem merkezi başkan yardımcılıkları görevlerinde bulunmuştur. 1990 yılında ODTÜ-TÜBİTAK tarafından başlatılan İnternet projesinde teknik grup yöneticiliği yapmıştır. 1997-2002 yılları arasında ABD'nin Indiana Üniversitesi Öğretim Teknolojileri ve Bilişsel Bilimler Bölümleri'nde çift dalda doktorasını almış ve halen ODTÜ Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nde yardımcı doçent olarak çalışmalarına devam etmektedir.



Hatice Sancar. 2003 yılında Çukurova Üniversitesi Eğitim Fakültesinin Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nden mezun olmuş ve 2004 yılında araştırma görevlisi olarak ODTÜ Bilgisayar Öğretim Teknolojileri Bölümünde göreve başlamıştır ve halen bu bölümde görevini sürdürmektedir



Yavuz İnal. 2003 yılında Gazi Üniversitesi Endüstriyel Sanatlar Eğitim Fakültesi'nin Bilgisayar Eğitimi Bölümü'nden mezun olmuş ve 2004 yılında araştırma görevlisi olarak ODTÜ Bilgisayar Öğretim Teknolojileri Bölümünde göreve başlamıştır ve halen bu bölümde görevini sürdürmektedir.

