

A Comprehensive Perspective on Psychosocial Impacts of Video Games

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ABSTRACT

Games are happiness and fun activities which psychological attributes make them useful and efficient in societies. However, video games are developed for entertain, fun and pleasure, but how the game is designed and what the aim of game is, need much care in term of both psychological attributes and physical actions. This paper reviews the main advantages and shortcomings of successful video games to find out the outcome of them in term of all considered parameters. Through this review I am going to reveal, not only the parameters that would be taken into account to make the video games successful but also to highlight some tips that families and societies are suffering from them or get benefit of them if have already been taken into account porously. I hope these suggestions help game developers design their games to save energy of children in an appropriate manner with a high impact to societies. The main contributions of this paper is to keep maintain the trade-off between having successful games for game developers and improving the video games; quality for children to enhance their abilities while they are involved with this part of life.

Keywords: *Gamification, Psychology Aspects On Gaming, Video Games*

The media is full of examples of new entertainments which are spreading and becoming popular due to their great attraction for many people but have raised public concern. Video games are not out of this norm too^{[1][2]}.

There is no doubt that there are defective cycles in technology use including sleep deprivation and increased body mass index (BMI), according to the agency's cybercrime group.

Games are happiness and fun activities which include one or more players. Players are doing some efforts to achieve the aim but they must obey the rules that game developers are assigned. Of course games are developed for fun and pleasure, but this is not all aspect to be considered while designing and developing a game.

While some studies show that computer games led to increase levels of aggression and hostile behaviour^[3], some other believe that video games have many advantages^{[4][13][15][16]}.

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The Gaming word has two different audiences but in many common properties. The main side is game developers that some times do not care about what they are producing as long as it is attractive while the other side is the people who play games and it is important for them or their societies what they are playing with.

This new kind of knowledge that almost influences on all aspects of human life has two sides like any other human events ^[14]. Appropriate use of this part of knowledge is not hidden by anyone, meanwhile game developers who are stand in the main part of these correspondence are usually worried about their commercialization without promoting human prosperity.

Professor David Kelly ^{[5][6]} presented an conceptual definition of gaming. He mentioned that game is a concept of lawful entertainment which takes the achievement of the goal into consideration. However this definition covers the most concepts of gaming but it does not cover muttered aspects. For example sport games and action games are not only be used to fulfill the free times and enjoyments. Many kids are engaging with these types of games to compete with others and show them his/her abilities and advancements in these games (my own experience as a mad game player).

Stephen Linhart ^[7] said people believe that they must choose either real world or virtual one not both together in term of game selection, but I believe that this not correct. A simple example is our not appropriate friend's attitude in schools when we have no idea about even a widely used game. Their attitudes reveal that we are very old fashion and somehow far from the current era. Currently a new technology of Augmented Reality ^{[14][17]} tries to combine these two would to make the games much interactive.

The present era is the era of technologies that result from innovation and creative thinking human beings. Computer games have a great impact on the creativity of human beings, especially children. Numerous studies on the effects of computer games on children's creativity and the results showed an increase in the "originality" and the "flexibility" of children's creativity. There for, the process of education and children's activities in this era will have a significant impact with appropriate game designs.

The impact of computer games in modern society, more than ever, convinces us that computer games are a new modern media that by the use of "immersion" and "interactivity," transfer the game players to a new world. Once the game has been started the "distance" between players and media is collapsed instead of being outsourced to the media, players will be in a new space created through the interaction of the media. Currently, with the massive



interactivity have been added to the games compare with the past, it becomes an active relationship to a significant extent (Fig 1). This is a space created in computer games that inflicts gamers on their own and affects them significantly especially there are not enough compensate when they do something wrong on the virtual environments.

Fig 1: A Sample reaction of kids while paying video games

Many studies have revealed the association of mental health problems such as depression, suicidal tendencies and lack of concentration are some of the serious issues we are facing to, with aggressive video games.

LITERATURE REVIEW

The first video game refers to the early cathode ray tube based in 1940s. It was extended and developed for simple games in 1950s. The decade of 1960s can be known as the first decade that computer games were started to be commercialized. Following this period, game developers tried to explore video games into different platforms like arcade, mainframe, console, personal computer and later handheld games ^[10]. Game advancements can be categorized in three different eras, in general.

Early Years

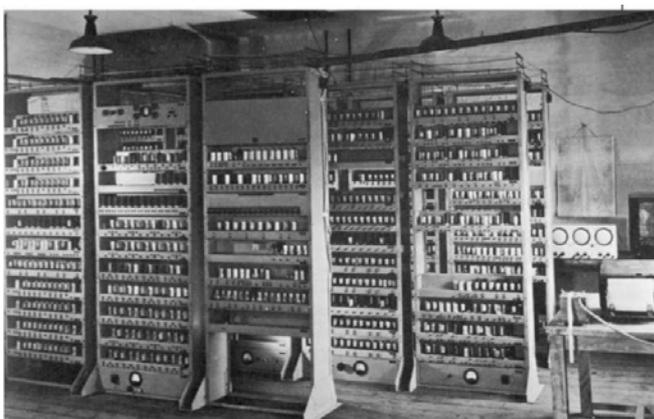
In 1952 Douglas wrote a version of Tic- Tac-Toe as part of his doctoral thesis in Cambridge Noughts and Crosses was written for the EDSAC emulator (Electronic Delay Storage Automatic Computer) which Memory contained 512 words of 17 bits. Figure 2 shows the computer of EDSAC, developed by Bushnell sells in the first of Golden era means 1971. Complexity of this game in the time was the only reason that it was not well received and did not make money. This is a big point that any game developer should take it into account. Game developers must evaluate the current era and compare with other existing games design their coming video games. This was the first arcade video games faced to a financial failure. Bushnell and Al Alcorn ^[9] been lectured from the failure of Computer Space and they developed Pong which was simple and not intimidating. This video game could be installed on an Arcade.

In 1972, Will Crowther developed a video game named Adventure which became a template for all other textbased games. Adventure was the first game which was coded in Fortran.

The home version of Pong was introduced in 1976 by the Atari. They also developed a driving game that can be used for getting experience fro deriving even sitting at home.

In 1980 Namco developed Pacman and released it for Arcades. Super Mario which was one of the success project was introduced by Nintendo but only for Arcade.

In 1981 Namco extended the previous Pacman and release it for female users which called Ms Pacman. At the same time River Raid was produced which is one of the memorable game



in computer graphic even until now (Figure 3 right). River Raid designed and developed by Carol Shaw, and published by Activision in 1982 for the Atari 2600 video game console (Figure 3 left). In 1995 the game was ported to Windows and published as part of Activision's Atari 2600 Action Pack. The Atari 2600 version of River Raid was republished via Microsoft's Game Room service in May 2010; River Raid II followed in June 2010.

Fig. 2. EDSAC emulator (Electronic Delay Storage Automatic Computer)

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Tennis For Two is the oldest electronic game in the history of video games. It was developed by American physicist William Higginbotham^[8] in 1958. This game which was a simulating of ping pong or tennis was developed for Donner Model 30 analog computer. This game is known as a first game which used screen to display by using an oscilloscope.

Space War can be known as the first digital computer games which was a widely used game in the category of Two-Player games. This game was developed by Steve Russell et al. in 1961 on a DEC PDP-1. In this game each player attempts to destroy the other by taking control of a starship. The sense of destroying each other was appeared in this game!

Golden Years

This era which was started from 1971 and ended in 1983 is called Golden Era. In this era video games were able to be access in peoples's home. At the first of this era video games began to enter to culture and society. Some of the widely used video games are: "Computer Space" which was



Fig. 3. Left: Atari 2600 video game console, Right: Screenshot of the original Atari 2600 version of River Raid

End of Golden era was faced with not good products. Markets were flooded with bad games but PCs were becoming more and more popular. People were looking for a new generation. Sony's and SEGA's leading positions here and smoothly move away from the Arcades.

Modern Age

Modern age was started with "I, Robot" by Atari in 1984. Nintendo released the NES in US in 1986. The enhancement on graphics was started in 1987 more and more. Atari pioneers the market again by releasing the first color display handheld - Lynx.

In 1989 SEGA releases its Megadrive and when Mortal Combat hits 16-bit consoles. The first games which released on multi platform was SimCity. In this year when Atari failed with Lynx, Nintendo succeeds with its Gameboy.

Modern age was ended with new coming device, which was Sony. PlayStation becomes popular quickly since it was easy to be programmed and its 3D capabilities.

VIDEO GAMES IN THE DIRECTIONS OF SOCIETIES

The word of children in computer games is full of surprises. Where children are brought up to their dreams, in a world of excitement and adventure. Step into a world, which can be under their control, is more enjoyable than any other activities. According to some physicians, computer games help children get less expensive medications and they coordinate the eyes and deliver the player's delicate muscles.

One way to develop the creativity and innovation in addressing children's activities is playing

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computers and computer games, which is the result of the creativity of the human brain. Buman Verter in 1999 found that the effects of computer games on children's creativity is important because they have the necessary flexibility.

Computer games are designed somehow that children are not afraid of mistakes and will not be evaluated by others. In most of the cases they feel not competing with others then they make decision in a relax mood.

Children are born creatively but they lose their creativity in 10 years old ^[20]. Creativity and innovation are the something that everybody needs in adulthood which can be explored in early childhood education. Video games can help us to make this property strength by using purposeful video games. Due to the world of children which is mixture of real and virtual world, one of the most important tools to grow up these creativity and innovation should be educated in childhood era through video games. Some of the advantages of using video games in childhood can be summaries as follow:

- It is easy to attract the attention of children's during learning of them
- Possibility to browse the latest iteration in learning
- Ability to create a painting and story
- Interests in history or geography
- Children can change the paint color out of messy painting
- Easy to learn foundations of mathematics concepts using figures for children
- Ill children need less painkiller medication (for fun to play)
- Eye-hand coordination and exercising delicate muscles of children
- Training aids for disabled people and their leisure time

Nowadays, there are quite number of parents who believe that it is much better to keep kids at home rather spending time with others who have different inconvenient attitudes. However, how will affect on kinds at the end? Alongside of many other issues with video games even the silence of kids and teens against the computer may cause some irreparable results. In next section, some issues of incorrect used of video games will be discussed.

VIDEO GAMES AGAINST THE DIRECTIONS OF SOCIETIES

This new phenomenon of human knowledge has come about in almost every aspect of human life, and is not apart from other man-made manifestations, which has two sides. One is to use it correctly in the work and to help human growth and prosperity. On the other hand, it is a false use, which is commonly used in non-scientific and professional fields. However, children and adolescents are enamored with video games day by day. There are different aspects that can be discussed in details. I will reveal some that sensed them in person.

Negative impact on family relationships

Aggression and isolation of children are the main parameter that video games have brought to the families.

Considering the fact that life is moving towards mechanization with a very heavy workload, parents are employed for long working hours and tiredness afterward, the emotional and family relationships are diminished in their own right. After existence if TV, now computer and video games have created a magic box with the most magical attraction, decreased family relationships.

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Most of the families are not happy of this invention. However, the direction of this magic box can be controlled and get much benefit or at least prevent families of this cold relationship.

Physical injuries

As the eyes are constantly staring at a computer screen, the light affect on the eyes then face them to problems. Studies show that young people are wallowing in games that do not pay attention to how visually and mentally push it. Moreover, as children sit in a fixed position for hours, they grip the spine and bones. The tingling and tighten the neck, shoulders and wrists relatively stable and long-term effects of other computers.

Strengthening the sense of aggression

The most important feature of computer games is the state of war. Unfortunately, violence is the most prominent feature in the design of the latest and most exciting computer games. In most cases, player must fight to go to the next stage of the game with the so-called "enemy". This attribute of video games makes kids in the sense of fighters, which continuation of such games will make the kids aggressive and militant. Various studies have been done to show that playing video games has increased aggressive, aggression, especially among children.

Many psychologists ^{[18][19]} believe that internet games can be considered as one of the causes of social problems. Worries about video games have long been a disadvantage of academic failure as well as the devastating effects of computer games that have led legislators in many countries to ban some of the games. Psychologists have previously stated that addiction to video games is a serious disorder in the behavior of individuals, which can have a damaging effect on their social relationships. A large-scale investigation has shown that this uncontrollable violence in children who use a lot of computer games is not due to violence in the content of the game, but because of the damage to the brain's cells which prevents development their brain.

Isolation

Children who are constantly involved with these games are introverted, community, social isolation and to communicate with others are incapable. Isolationism makes sense that a kid be separated from that of its peer group is beginning to develop other abnormalities.

The idle mind

As the children play with other's products, they cannot manipulate resulting losing of confidence in the building and development. Moreover, due to attractiveness of these games, kids spend time and energy playing and receiving not acceptable results in their studies. Even some of the children in the morning wake up earlier than usual to play a bit before going to school, which makes them tired during the school.

Due to the fact that players have less power to interact with other players or even the so-call "enemy", their self-esteem shrinks against the build and progress of others. Some people believe that in the video games the players have a constant mental intervention, but this is not intellectual intervention and mislead the brain cells and move only a few fingers of the players. Going on this direction with no control of kids will deliver people to society that are disillusioned, depressed, non-movable and non-constructive.

THE MAIN TIPS FOR GAME DEVELOPERS

There is no doubt that video games are to be used. Then it is better to take creative video games that kids have to solve puzzles through them, more than other games. These types of games make them creative rather than aggressive. However, these types of games and even group games which many people believe in them, will be still problematic, when kids play for long hours. Based on the studies^[21] Europeans and North American adolescents they spend two or more hours daily which exceeding to four hours for most on video games.

Most adolescents in Europe and North America spend two or more hours daily on computer-games and two or more hours on surfing and chatting via the internet. Time use exceeding four hours per day is common (unpublished analyses of HBSC international data 2010)^[2]

In this section, I am going to reveal some main tips that would be useful for game developers to take into consideration. These tips that have been obtained is based on what families and society required.

Audiences

The main point is the audience of the video games. However, this point is very common but the age range of users is significantly important. Do some research on the psychological needs for the audiences would make the game interesting and acceptable for the parents as well, results increasing the audiences' numbers.

Team Players

Team player games are in order not only for kids but also for adults. Team play games for children with visual tools are less problematic. Video games are usually destroyer when the child is alone for long hours focusing on the screen.

Our overview on video games shows that most the teamwork video games are success in both side of the coin. In one side, game developers can achieve their aims and on the other side the effect of these games are usually not bad and somehow suitable for educating kids to work in a team.

Parents should accompany their children to the mountains, clubs and sports arenas go to their favorite games but as these days, playing video games are the favorite part of life for the kids family video game can be taken into account. A new idea is to produce video games in teamwork of a family. There are many ideas that can produce family games. For example traveling a family in moon or in a jangle. These types of games not only create strong family relationships but also the parents can control the time, which is the crucial drawback of video games.

Healthy Games

It is essential for children to take a rest during playing video games on a regular time which can be designed in the game by the game developers. As the players often lose control of the game the rest time can be consider into the game by for example reloading or counting the money or any other things that they have achieved so far.

Natural Interaction Games

Natural interaction games are the other category of video games that force players to do some vibrations, locomotion and jumps^[12]. These categories of video games are currently in order due to low mobility of children not only practically, but also psychologically.

Damaging Games

The most damaging video games are the games that have so many characters or pictures that frequently appear on the screen and the child must look at all and fire. It is strongly recommended to game developers to replace these types of games with calm and quiet games that the children should be aware of each side not watching so many characters. Although these types of games are usually attractive for children, they are not in a good condition of healthy. Parent usually avoid their children to play these types of games. Smart games are in order to be replace by these kinds of games. One of the reason to make children aggressive and foreful, is to attack to too many enemies rather than focusing on a single enemy.

Ethical and immoral

Teens may have usually some immoral works; convenient video games keep it enough leisure and remove impatience part of their life. Many parents prefer their teens to play video games compare to going out with their friends. In this period of age, the children attitude is different. If game developers take this criteria into account and try to make the games attractive it may effect of absorbing teens. Teamwork games are one of the suggested ideas in this case.

Parents must spend more time on their child and adolescents. The more time and the right communication between parents and children, the less problem arise when playing video games. Otherwise, the main culprits are the parents who spend their children on long hours playing video games. I personally, believe and found it very interesting and beneficial playing games with parents. They can control the action and reaction of kids while they are deep in the virtual environments.

Parents should be familiar with video games in some extent and know which games are suitable for any age, and help the relevant experts in this regard. Then, they can guide their children in purchasing such games and, of course, prohibit the use of some games and talk to them about their malicious damage.

Moreover, there is no doubt that it is much better for parents to go along with their children for some days and to play their favorite games in nature in order to disengage their nervous and psychological energy, and their attention to computer games is discouraged.

CONCLUSION

Based on the discussion above, it is clear that computer games can be categorized such as all other new technologies. It can be used to improve efficiently of our life and can be harmful if we use it in the incorrect ways. Due to the fact that computer games can be designed to be used in teaching^[11], visualizing the concepts and creating culture and many others, it cannot be viewed as a threat to the mental and physical health of individuals directly if the necessary pathologies have been taken into consideration.

Video games and impact of them is a fascinating topic for psychology and game developers. Although, video games have many disadvantages, advantages of them should be taken into account while discussing this matter. There are some paramours that can create video games successful with positive impacts on families and societies. I have suggested some criteria that game developers should take them into consideration to improve the impact of them on our children I hope this research is beneficial for both society and game developers.

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Conflict of Interest

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