Social and Cultural Impacts of Video Games, How Are We Affected by Video Games?

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Abstract

This paper is devoted to the research of the social and cultural impacts of video games. Video games are represented as the product of digital culture that substantially affects a modern person, alters traditional social practices, and transforms cultural space. Reviewing scientific researches related to video games influence on people we have educed positive and negative outcomes. The bottom line is that modern studies of video games have turned to researching positive effects of gaming technology and its potential in other cultural fields' development. We have shown that video games and gaming industry strongly influence economy and society playing an important role in social changes. We have come to the conclusion that the gaming industry is creative and has solid potential, it is changing the space of modern culture forming new artistic images, new cultural identities, new forms of art, new cultural phenomena.

Keywords: digital culture, ICT, game studies, video game, game industry, impact

Introduction

Information and communication digital technology has changed all spheres of a modern person's life. It has drastically changed the environment, specifically, the way we get, store and transfer information, the way we communicate and present ourselves, our financial institutions and government, our traditional management practices, marketing, labor, cooperation, etc. A modern person interacts with virtual objects, number and nature of which are constantly changing [Shaev, 2015]. Digital technology transforms the space of modern culture in such a way that today it is not just modern culture, but it is digital culture we're talking about [Gere, 2002].

Technology development has become the key factor of social and cultural space transformation or the technological process was triggered by realization of certain cultural settings – this is a matter of scientific discussions now. However, the fact that the culture of XX-XXI centuries has dramatically changed is out of question. New media (Internet services, social media), new interactive teaching technologies (simulators, virtual classes and laboratories, MOOCs, serious games), new trends and forms of art (digital art, virtual museums), new kinds entertainment (multimedia, video games, virtual reality, interactive movies) are appearing.

One of the most rapidly developing phenomena of digital culture is video games. Video games are a complex and multisided phenomenon that has become an object of research in various sciences: philosophy, culture studies, media and literary studies, semiotics, anthropology, ethics, aesthetics, history, sociology, psychology, neuroscience, economics, computer science, etc. All that illustrates the significance of video games in different spheres of our life.

Video games are popular not only with kids and youth, but also with representatives of all ages and social strata. The industry itself is quite young; however, it is rapidly developing. It is becoming the driver of the entertainment business on the whole being ahead of cinematography in terms of sales.

Moreover, the gaming industry is going beyond the borders of its initial entertaining purposes. According to A. Shaw, "video game permeate education, mobile technologies, museum displays, social functions, family interactions, and workplaces" [Shaw, 2010]. Indeed, video games and gaming technologies are actively applied in education, business trainings, science, medicine, military, management and marketing, art, museums, architecture, sports, etc. As R. Smith notes, "however, the current explosion in both

computer and game technologies has allowed them to move so swiftly into so many different industries, that it appears that game are taking over all industries" [Smith, 2017]. Once being just toys for kids video games and gaming technology have turned into a powerful force, a serious means of affecting mass consciousness, society and culture.

The potential of video games is enormous, as well as their impact on the environment of a modern person. The purpose of this paper is to find out, how they influence culture, society, and us.

Video Games and Personality

Video games penetrate the world that is traditionally studied by social psychology; it is the world of a person and its communication with other people. The issue of video games influence on human psychological and physical health and psycho-emotional state, brain activity, communication skills and so on is rather frequently mentioned in scientific researches.

Video games influence on children and young people is of the most concern, for games are an important factor of forming personality and socialization. According to P.J.C. Adachi and T. Willoughby, most of the studies of video games impact on youth are focused on negative outcomes (aggression, risky behavior, video game addiction), a positive outcomes of video game play have rarely been a subject of research [Adachi & Willoughby, 2012]. However, today we are facing a certain increase of attempts to investigate positive effects of video games [Granic, et al., 2014].

Negative Effects of Video Games

Video games are frequently blamed for provoking violence. It is stated that video games with violent content may teach kids how to be violent, aggressive, hostile, unsympathetic, and tolerant to breaking social norms. Video games may teach false norms of behavior that are demonstrated by individuals in the course of play online.

No doubt, the cases of aggressive behavior among gamers are real and well known. Though, scientists failed to verify that video games with violent content (such as Mortal Combat, GTA) increase gamers' aggressiveness. For instance, C.J. Ferguson and C.K. Olson didn't find such impact even in the case of mentally vulnerable children: "our results suggest that the association between violent video games and aggression related outcomes in children, even those with clinically elevated mental health symptoms, may be minimal" [Ferguson & Olson, 2014]. The results of the research carried out by J.M. Jerabeck and C.J. Ferguson have shown that "violent content in video games had no influence on prosocial behavior, aggressive behavior, or self-perceptions of empathy" [Jerabeck & Ferguson, 2013]. So, no research has found that video games are a primary factor of youth aggression [Jenkins].

A widely spread misconception is that video games contribute to getting away from reality, escapism, psychological and social isolation of an individual. Video games lead to the situation when an individual prefers virtual worlds to reality and spends all the free time in them becoming socially isolated. However, at the same time we see that most video games imply multiplayer (with friends, family, etc.). Moreover, popularity of MMORPG gets bigger ever year. Those bring gamers social contacts and interaction, and outside the virtual world, too.

It is stated that video games, as well as using a computer on the whole, negatively affect human health. For example, they can cause physical inactivity and obesity, musculoskeletal disorders. As the researches show, using a computer for more than two hours a day increases the risk for pain at most anatomic sites [Hakala, et al., 2012]. Such negative effect of video games for the most part has to do with using a computer for longer periods. If we are talking about active video games (Wii games, exergames, fitness games), the impact will be quite the opposite [Biddiss & Irwin, 2010]. Such video games involve physical activity, can help to replace sedentary screen-time activities improving overall physical state [Krause & Benavidez, 2014].

It is traditionally considered that video games cause problems with eyesight because of the strain and focus they imply. However the studies have shown that video games increase human abilities to differentiate colors and "action video game playing also enhanced contrast sensitivity, providing a complementary route to eyesight improvement" [Li, et al., 2009].

In many cases negative impacts of video games on people is connected with various factors, such as personal psychic peculiarities, age, physical and social activity, social environment, relationships with the family, etc.

Positive Effects of Video Games

In accordance with the research by M. Palaus et al., "video games use has an effect in a variety of brain functions and, ultimately, in behavioral changes and in cognitive performance" [Palaus, et al., 2017]. Video games positively affect cognitive abilities: they improve memory, concentration, visuospatial skills, etc.

Action games improve such cognitive abilities as visual focus, short-term memory, reaction speed, learnability. According to the studies of D. Bavelier et al., "action video game play may actually foster brain plasticity and learning" [Bavelier, et al., 2012]. Today such video games are recommended to people of all ages for brain training. Besides, such aggressive teach players how to keep their emotions under control. Negative emotions in video games teach how to cope with them in real life.

However, video games affect human hippocampus differently. It is a part of the brain responsible for information consolidation for the further transfer from short-term memory to the long-term one, for storing and processing the space-related information. The results of study by L. West et al. show that "video games can be beneficial or detrimental to the hippocampal system depending on the navigation strategy that a person employs and the genre of the game" [West, et al., 2017]. So, video games can both increase and decrease the amount of grey matter in the hippocampus of different people depending on what kind of space orientation an individual uses.

We can distinguish between the following positive effect of video games: improve focus, observancy, ability to make quick decisions, develop memory, logical thinking, encourage problem solving skills and learning new skills, develop the ability to process big arrays of information, improve visual-spatial skills, increase motor skills, hand-eye coordination, better reading comprehension and inductive reasoning, etc.

What is more, according to P.J.C. Adachi and T. Willoughby, positive effect of video games can relate to well-being. Playing video games can satisfy basic psychological needs (needs of competence, autonomy and relatedness), which in turn leads to intrinsic motivation and well-being [Adachi & Willoughby, 2017]. When we play, we do it not because of the pressure of the world around, but for experiencing intrinsic motivation. It is based on three basic psychological needs, satisfying which we move towards psychological well-being. Those needs are satisfied through playing video games. The competence need is satisfied when a person feels the ability to deal with game's challenges. As a rule, a videogame gives an opportunity to try to solve a problem more than one time only, which leads to the competence increase without experiencing fatal mistakes. The need in autonomy is satisfied if a person is free to make independent decisions. And relatedness need satisfaction is provided by the tight interconnection with other players, it is expressed in collective actions, cooperation, communication, etc.

So, if video games contribute to satisfying basic psychological needs, they also contribute to the following: firstly, understanding personal abilities, teach how to overcome challenges and difficulties, to try over and over again, to be proactive, they stimulate the ambition for competition, struggle and victory, they teach to see new opportunities, to improve skills and abilities; secondly, they contribute to understanding responsibility, they teach to make decisions and solve complex problems, develop strategic thinking; thirdly, they teach how to cooperate, how to work in a team, they contribute to developing social skills and prosocial behavior.

If we look at video games as a means of communication, we will see that they imply communication

between developers and players (open communication space in which players and developers interact); between players (video games give an opportunity to communicate building relationships, joining in teams and communities). Lots of MMORPGs allow the players interact being in different parts of the globe. From that point of view, video games can be seen as a means of intercultural communication, for the crowd here is global, international. Cooperation and social interconnection of players from all over the world may lead to leveling national prejudices and stereotypes and, consequently, to more efficient communication between representatives of different cultures and ethnic groups.

Thus, as we see it, along with the negative effects of video games there is a great potential of positive influence that can be socially useful with the help of game designers, teachers, doctors, and researches working together.

Video Games and Society

So, we have reviewed how video games influence people. Now, we will try to reveal their influence on changes in society. Video games have really become a part of our lives, they change patterns of behavior, social communication and leisure entertainment. Presently, when the flow of information and experience is constantly growing, video games are becoming an essential element of that flow, a subject for discussion and social interaction.

Besides, video games are a huge industry that has become a significant part of modern economy throughout the last decades. It has brought vast changes to our society: new markets, new companies and corporations, new business models, new workplaces, new software technology (3D Engine, networking, Artificial Intelligence), etc. Let's take a look at the social transformations that modern information and communication technology and video games are bringing to life.

Many video games broadcast and strengthen the values of capitalism in minds of people. In fact, virtual worlds of video games are prototypes for the real world with its system of capitalistic economical relationships and property inequality. In our society we see the organic bond between real and virtual worlds. Virtual worlds help achieve the goals of capitalism (profit maximization, propaganda beneficial for the ruling class), the real world contributes to the development of the gaming industry [Dyer-Witheford & Peuter, 2009].

In the virtual worlds of video games the new economic relationships are being formed. They are based on not material virtual benefits. Those simulative economic relationships based on the distribution of virtual resources, producing and consuming virtual benefits are becoming a part of our real social and economic system. Video games encourage producers and consumers of virtual goods that are purchased by players for real money. And vice versa, players have an opportunity to convert their income, earned in electronic money into real currency. Virtual spaces are becoming interesting for real business, big companies and corporations involved in promoting real goods and services in them. Thus, we see that video games and gaming industry are developing modern capitalistic system not only in reality, but in virtual spaces, too.

If we take a look at video games as a sort of medium, we will be able to see their influence on society that is related to other means of communication and mass media. As I. Bogost notes, books, cinematography, art, theater, music, video games are media that influence and change us [Bogost, 2007]. However, from his point of view, video games are a unique medium that has its own persuasive power. The message conveyed by an author is passed not only through verbal and visual means, but also through procedures: game mechanics, gameplay, rules. He called that capability of video games "procedural rhetoric". I. Bogost calls us to recognize the persuasive and expressive power of procedurality and to look at video games as a serious means of affecting us and society on the whole.

So, video games have been influencing economic relationships and social norms of several generations. Today they are able to affect us quite strongly, persuade us, uphold the existing order and play an important role in future social transformations.

Some game designers don't see video games as entertainment at all, they treat them as a powerful tool for social changes. With the technology at hand (VR, AR) we can alter the public perception of many social issues. For example, the video game *Blue Cat* forms empathy to mentally ill people. *We Are Chicago* touches upon the problems of gang violence, economic insecurity, immigration, etc. [Conditt, 2016].

Video Games and Culture

No doubt, video games are strongly affecting modern culture. Its contribution was studied by T. Donovan. He described the history of video games as the history of human creativity supported by technological development [Donovan, 2010]. The gaming industry is creative, it has strong potential, it changes the cultural space.

Video games create their own images (e.g., Pokémon, Mario, Sonic) and the whole universes (World of Warcraft, The Witcher, The Elder Scrolls, Assassin's Creed) that become cultural phenomena known by the whole generation (not gamers only). Video games also have to do with new forms of art, such as digital art, chiptune, pixel-art, glitch-art. They create new phenomena of modern culture (fanfiction, fandom, role-playing games, cosplay, etc.) [Samoylova, 2014].

As a commercial entertainment product video games influence various spheres of culture: cinematography, television, literature, media, comics, music, etc. Visual images, names, stories and ideas of commercially successful projects (Spiderman, Marvel characters) appear in movies, comics and video games forming one entertainment product that affects the mass consciousness and culture dramatically.

According to J. Raessens, video games, as well as television and music, have become the phenomena of great cultural importance. We need to see them as aesthetic, social and cultural phenomenon. In the culture of postmodern various types of video games being media change the structure of personal and cultural identities [Raessens, 2006].

Video games belong to the system of mass cultural production, they are a phenomenon of popular culture, and as a part of culture video games are a mechanism of socialization and adoption of cultural norms. They contain rich cultural material (values, history, images, symbols, myths, art forms, etc.) consuming which we adopt cultural norms and values.

Video games are unthinkable without cultural content. They create certain images of reality, but a player can see all the virtual conventions, too. That world needs to be meaningful to a player, it should be filled with values, have artistic content and represent cultural experience in order to capture the mind, grasp it, to make a person believe in it. So, video games influence modern culture producing new cultural phenomena that are a representation of modern culture values.

Conclusions

Video games and the gaming industry are changing us, our technologies, economy, art, education, etc. They affect the way we feel ourselves in the world, how we communicate, how we play in the framework of post-non-classical culture. Video games are the technological, economic, social and cultural force that is worth considering, because, as J. McGonigal notes, those who understand the power and the potential of video games, will be the people who invent our future [McGonigal, 2011].

Funding

References

Adachi, P.J.C. and Willoughby, T. (2012), 'Do Video Games Promote Positive Youth Development?' *Journal of Adolescent Research*, 28(2), 155-165.

Adachi, P.J.C. and Willoughby, T. (2017), 'The link between playing video games and positive youth outcomes,' *Child Development Perspectives*, 11 (3), 202-206.

Bavelier, D. et al. (2012), 'Brain Plasticity Through the Life Span: Learning to Learn and Action Video Games,' *Annual Review of Neuroscience*, 35, 391-412.

Biddiss, E. and Irwin, J. (2010), 'Active Video Games to promote Physical Activity in Children and Youth: A Systematic Review,' *Arch Pediatr Adolesc Med,* 164 (7), 664-672.

Bogost, I. (2007) Persuasive games: The expressive power of video games. Cambridge, MA: The MIT Press, 450 p.

Conditt, J. (2016), 'Video games are more important than ever. IndieCade 2016 highlighted the power of video games to humanize critical social issues' [Online]. Available at: https://www.engadget.com/2016/10/26/indiecade-video-games-art-society/ [Accessed February 24, 2018].

Donovan, T. (2010) Replay: The History of Video Games. UK: Yellow Ant Media Ltd, 516 p.

Dyer-Witheford N. and Peuter G. de. (2009) Games of Empire: Global capitalism and video games. Minneapolis: University of Minnesota Press, 298 p.

Ferguson, C.J. and Olson, C.K. (2014), 'Video Game Violence Use Among ''Vulnerable'' Populations: The Impact of Violent Games on Delinquency and Bullying Among Children with Clinically Elevated Depression or Attention Deficit Symptoms,' *Journal of Youth and Adolescence,* 43(1), 127-136.

Gere, C. (2002) Digital Culture. London: Reaktion Books, 222 p.

Granic, I., Lobel, A., and Engels, R.C. (2014), 'The Benefits of Playing Video Games,' *American Psychologist*, 69, 66-78.

Hakala, P.T. et al. (2012), 'Musculoskeletal symptoms and computer use among Finnish adolescents - Pain intensity and inconvenience to everyday life: A cross-sectional study,' *BMC Musculoskelet Disorders*, 13 (1): 41, 1-7.

Jenkins, H. 'Reality Bytes: Eight Myths About Video Games Debunked' [Online]. Available at: http://www.pbs.org/kcts/videogamerevolution/impact/myths.html [Accessed February 24, 2018].

Jerabeck, J.M., and Ferguson, C.J. (2013), 'The influence of solitary and cooperative violent video game play on aggressive and prosocial behavior,' *Computers in Human Behavior,* 29(6), 2573-2578.

Krause, J.M. and Benavidez, E.A. (2014), 'Potential Influences of Exergaming on Self-Efficacy for Physical Activity and Sport,' *Journal of Physical Education, Recreation and Dance*, 85 (4), 15-20.

Li, R. et al. (2009), 'Enhancing the contrast sensitivity function through action video game training,' *Nature Neuroscience,* 12, 549-551.

McGonigal, J. (2011) Reality Is Broken. NY: The penguin press, 388 p.

Palaus, M. et al. (2017), 'Neural Basis of Video Gaming: A Systematic Review,' *Frontiers in Human Neuroscience,* 11, 1-40.

Raessens, J. (2006), 'Playful Identities, or the Ludification of Culture,' *Games and Culture*, 1(1), 52-57.

Samoylova, E. (2014), 'Virtual World of Computer Games: Reality or Illusion?' *Procedia - Social and Behavioral Sciences*, 149, 842-845.

Shaev, Y. (2015), 'To the Inner Sense of Things in the Era of Virtual Space,' *Proceedings of the 2nd International Multidisciplinary Scientific Conferences on Social Sciences and Arts, (SGEM 2015),* Book 3, 789-794.

Shaw, A. (2010), 'What is Video Game Culture? Cultural Studies and Game Studies,' *Games and Culture,* 5(4), 403-424.

Smith, R. (2017). 'Game Impact Theory: The Five Forces That Are Driving the Adoption of Game Technologies within Multiple Established Industries' [Online]. Available at: www.modelbenders.com/papers/Smith_Game_Impact_Theory.pdf [Accessed February 24, 2018].

West, L. et al. (2017), 'Impact of video games on plasticity of the hippocampus,' *Molecular Psychiatry,* 10.1038/mp.2017.155