

REGIONALNI CENTAR ZA TALENTE U VRANJU

**TO GAME OR NOT TO GAME
IGRATI ILI NE IGRATI**

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Abstract

The technology has been developing and expanding in every possible way. The question of whether technological advances are good for a society has always been and continues to be a very thorny one. Video games, the highest achievement of today's technology, are a ubiquitous part of almost all children and adolescents' lives. But there is one question still remaining, are the video games good for us? There is certainly a good reason to ask this question. Collectively, as a planet, we now spend more than one billion hours every single day playing videogames – a total that is up more than 50% from just three years ago. Meanwhile, the average young person racks up 10,000 hours playing video games by the age of twenty-one. (By comparison, they will spend just 10,084 hours in the classroom throughout all of elementary school and high school combined.) The more we play, the more we reasonably want to know: Do we spend our time wisely, or do we waste it? Are games a “good” use of our lives?

Key words: technology, video games, children, adolescents

Технологија се развија и шири на сваки могући начин. Питање да ли је технолошки напредак добар за друштво је увек било и увек ће бити трновито. Видео игре, највеће достигнуће данашње технологије су свеприсутан део живота скоро све деце и свих адолесцената. Али постоји још једно питање, да ли су видео игре добре за нас? Нема сумње да је добар разлог да се постави ово питање. Колективно, као планета, ми трошимо више од једног билиона сата сваког дана играјући видео игре – што је укупно 50 % више од само пре 3 године. У међувремену, просечна млада особа троши 10 000 сати играјући видео игре до своје двадесет и прве године. (Поређења ради, они ће потрошити само 10 084 сата у својим учионицама током читавог школовања у основним и средњим школама.) Што више играмо, то више желимо да знамо: Да ли наше време трошимо корисно, или га само трошимо? Да ли су видео игре 'добра' употреба наших живота?

Кључне речи: технологија, видео игре, деца, адолесценти

DEFINING VIDEO GAMES

Before we go further, it is essential to specify what we mean by the term video games and how they differ from other media (ex. books, television, movies). The most essential distinguishing feature of video games is that they are interactive and players cannot passively surrender to a game's storyline. Instead, video games are designed for players to actively engage with their systems and for these systems to, in turn, react to players' agentic behaviors. There are millions of video games, with vastly different themes and goals. These games can be played cooperatively or competitively, alone, with other physically present players, or with thousands of other online players, and they are played on various devices from consoles (Nintendo, Wii, Playstation) and computers to cell phones. In World of Warcraft, 12 million players regularly log on to customize their fantasy personae, explore complex and ever-changing vistas, and collaboratively battle human and computer opponents. In Starcraft 2, millions worldwide play a complex chess-like strategy game that demands, perpetual multitasking between procuring resources, amusing an army, and penetrating opponents' defenses. In The Sims 3, players cultivate a virtual existence where their character(s) socialize, learn new skills, work steady jobs, and develop complex relationships. In Halo 4, players take on the first-person perspective of a highly equipped supersoldier, violently killing their alien races. Finally, in Minecraft, millions of players use Lego-like elements to construct their own unique structures and mechanisms, sharing their creations with others in immense virtual worlds.

Given this vast diversity in video games, a single definition may not be useful. In fact the importance of this information is that we are able to see how different types of genres of video games can affect our lives.



**Examples of games logos mentioned in the text above.*

1. Do videogames make us measurably better at anything? Do they improve our skills and abilities?

Firstly, we will discuss the questions asked and try to give the right answers. Here we can turn to scientific research for answers.

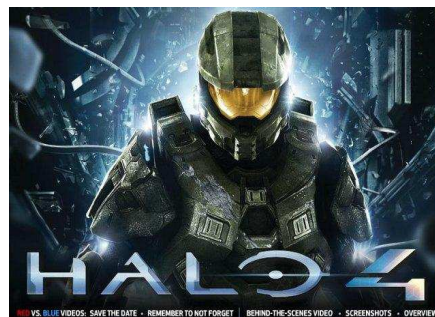
What do scientists say?

The research here is increasingly persuasive. Scientists have found a wide variety of cognitive, emotional and social benefits to gaming in recent years.

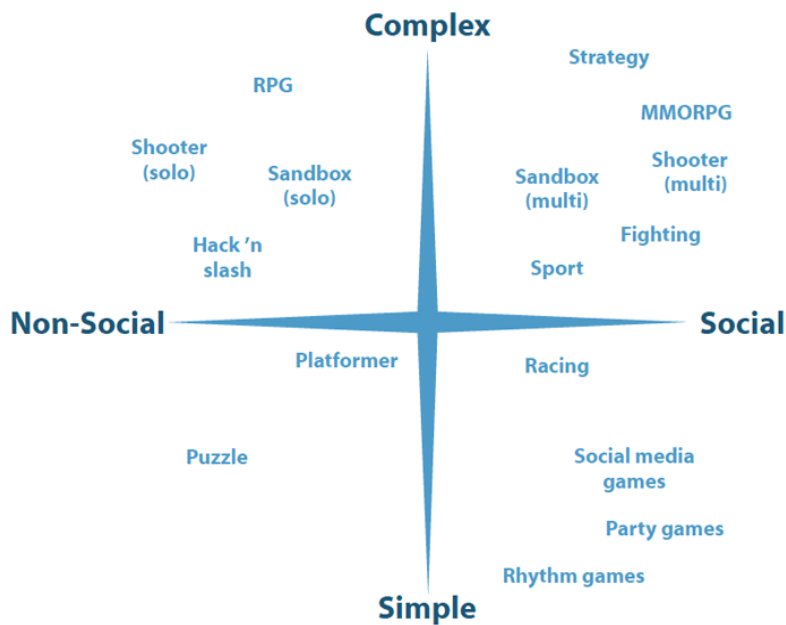
Cognitive Benefits of Gaming

Contrary to conventional beliefs that playing video games is intellectually lazy and sedating, it turns out that playing these games promotes a wide range of cognitive skills. This is particularly true for shooter video games (often called “action” game by researchers), many of which are violent in nature (e.g., Halo 4, Grand Theft Auto IV). The most convincing evidence comes from the numerous training studies that recruit naive gamers (those who have hardly or never played shooter video games) and randomly assign them to play either a shooter video game or another type of video game for the same period of time. Compared to control participants, those in the shooter video games condition show faster and more accurate attention allocation, higher spatial resolution in visual processing, and enhanced mental rotation abilities. It is important to stress that enhanced cognitive performance is not documented for all video game genres. The robust effects on cognitive performance come from playing shooter video games and not from, for example, puzzle or role-playing games. These cognitive enhancements are likely product of the visually rich three-dimensional navigational spaces and the fast-paced demands that require split-second decision making and accurate attention to unpredictable changes in context. In addition to spatial skills, scholars have also speculated that video games are an excellent means for developing problem-solving skills.

Finally, video games seem to be associated with an additional cognitive benefit: enhanced creativity. Critically, children`s use of other forms of technology (ex. computer, internet, cell phone) did not relate to enhanced creativity. However, this study`s cross-sectional design made it unclear whether playing video games develops creative skills or creative people prefer video games.



- *Conceptual Map of the Main Genres of Video Games (With Examples) Organized According to Two Important Dimensions: Level of Complexity and the Extent of Social Interaction Required*



**Note. The figure is not empirical but conceptual and is intended to demonstrate the variety of ways video games engage their users. Some genres have been necessarily excluded.*

Motivational Benefits of Gaming

By setting specific tasks and allowing young people to work through obstacles to achieve those tasks, video games can help boost self-esteem and help children learn the value of persistence. By providing immediate feedback as video game players solve problems and achieve greater expertise, players can learn to see themselves as having skills and intelligence they might not otherwise realize they possess. Gaming helps young people realize that intelligence is *incremental*, i.e., something that can increase with time and effort rather than being fixed. Immediate feedback also keeps players in the "zone of proximal development" which allows them to solve problems on their own while working towards specific goals. Since difficulty level rises as players advance, the skills they gain from gaming continue to improve with time. Games also provide intermittent reinforcement to encourage players not to give up despite growing challenges. Again, there is little evidence showing that the motivational benefits from playing video games necessarily carries over into the real world. Still, many of the problem-solving skills learned in games can be applied to real-life problems. The motivational benefits from video games likely varies depending on the personality and individual circumstances of the player



Theory of Gaming Motivation

By Shoshannah Tekofsky



The 11 basic needs that can be fulfilled by gaming grouped by the sense of reward they offer

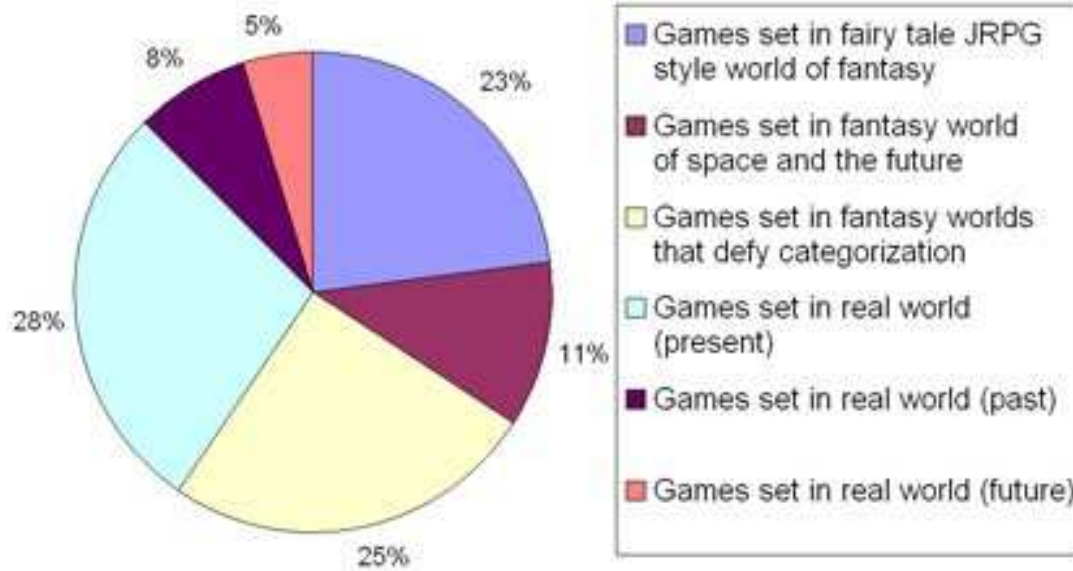
Emotional Benefits of Gaming

For most gamers, video games are played for enjoyment and to help improve their mood. Along with distracting them from real-world problems (a special concern for young people looking for escape from bullying or other negative life situations), succeeding in video games can lead to positive feelings, reduced anxiety, and becoming more relaxed. Many gamers report intense emotions of pride and achievement by immersing themselves in games that allow a high sense of control that “takes them out of themselves.” The positive emotions that can result from becoming immersed in video games on a regular basis may also increase awareness and encourage a more novel outlook on life.

Social benefits of gaming

Perhaps more than ever before, video games have become an intensely social activity. Instead of the stereotypical ‘gaming nerd’ who uses video games to shun social contact, over 70 percent of gamers play with friends, whether as part of a team or in direct competition. Games such as World of Warcraft and Farmville boast millions of users, with online social communities and regular interactions with fellow gamers. Social and prosocial activities are an intrinsic part of the gaming experience with gamers rapidly learning social skills that could generalize to social relationships in the real world.

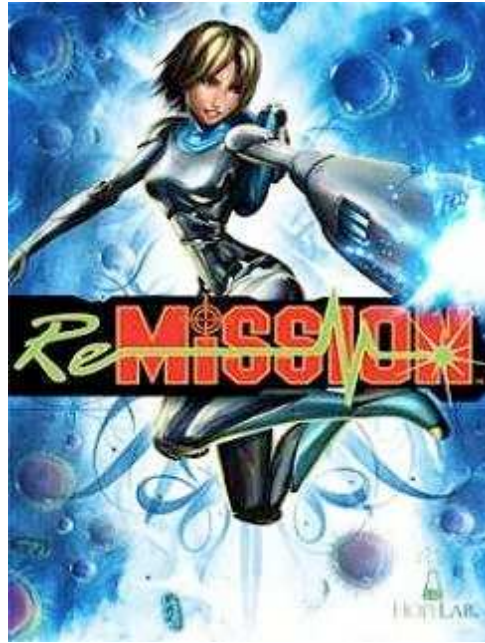
Game environments



Though many games have a violent content, they still provide players with an opportunity to learn social skills by focusing on cooperation with team members. Research has shown that playing violent video games in groups reduces feelings of hostility better than playing such games alone. More research is definitely needed, but there seems to be a strong potential value of cooperative play in developing social behaviour and curbing antisocial thoughts and behaviours.

Although video games are largely seen as pure entertainment, their popularity has inspired new initiatives to "gamify" medical interventions to motivate patients and keep them informed about treatment options.

One particular success story involves the Re-Mission video games, designed for young cancer patients. Conceived by [Pam Omidyar](#) and developed by the [HopeLab Foundation](#), the shooter game allows players to control a nanobot injected into the human body to shoot cancer cells and monitor patient health. Children playing the game learn about their own illness, side-effects of cancer treatment, and the importance of treatment adherence. Research studies have already demonstrated that patients playing Re-Mission become better educated about cancer and develop greater treatment self-efficacy. Already played by more than 200,000 patients, Re-Mission is widely recognized as a valuable tool for cancer treatment.

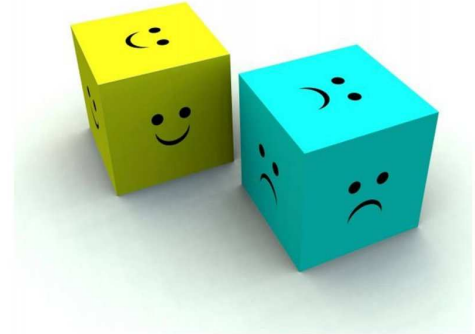


2. Are videogames worthwhile, compared to other activities, when it comes to our happiness and well-being? Will we feel better and enjoy life more if we play them?

A gaming industry did a research that we find interesting, so we are going to present it here.

They asked gamers themselves about their subjective experience of videogames:

- 1) What makes us happy – and can games play an important role in achieving that happiness?
- 2) What are the most popular emotions of playing videogames?



Based on the 1,040 responses to the survey, we have ranked the top 10 emotions with their average score out of 5 to get a rough-and-ready estimate of the popularity of various emotions. This is not a strict scientific measure, as such, but the highest scoring emotions are those for which the majority of people not only recognized having that emotion while playing games, but recognized it enhanced their enjoyment.

(For reference, the top answer that could be given in each case was “Yes, [I recognize this emotion in my play] and I seek out games that give me this feeling” and the next highest was “Yes [I recognize this emotion in my play] and it enhances my enjoyment of a game”. The bottom answer in each case was “No, I never feel this way when playing games.”)

We have included our hypothetical deductions concerning the underlying neuro-biological mechanisms where we have some idea of what is involved.

10. Bliss (3.26)

At the bottom of our Top 10, the feeling of utter joyfulness, which is probably the experience of highly elevated levels of the neurotransmitter serotonin. While 27.7% of respondents said no videogame had given them this feeling, 59.9% of people gave this emotion one of the top two responses (with 22.1% actively seeking out games which give them this feeling). We are actually quite doubtful that so many people have experienced bliss in the sense intended by emotions-expert Paul Ekman (although a study could easily determine this), and we find it more likely that people are taking the description “utter joy and bliss” to mean fiero (the emotion of triumph over adversity), which we will come to below.

9. Relief (3.28)

Relief, which may be the experiential analogue of the hormone cortisol, has already been acknowledged as an important emotion of play. Despite this, 21.5% of respondents said no videogame had ever given them this feeling. However, 43% said it enhanced their enjoyment of games, and 14.4% said they sought out games that gave them this feeling.

8. Naches (3.57)

Here is a curious one – the emotion of pride in the accomplishments of one’s students or children, referred to by emotion researcher Ekman by the Yiddish term naches. Players seem to really enjoy training their friends and family to play games, with a whopping 53.4% saying

it enhances their enjoyment, and another 12.9% saying they seek out games that give them this feeling. (We do not have the data yet, but we wonder if such people play mostly MMORPGs?) Only 10.9% had never had the experience in the context of videogames.

7. Surprise (3.59)

Another emotion we have seen in the context of rushgames, surprise is closely related to fear and thus probably relates to the hormone and neurotransmitter epinephrine (adrenalin). Few people (8.1%) had never been surprised by videogames, while more than half the respondents (51.9%) said it added to their enjoyment, and another 14.4% saying they sought out games that gave them this experience.

6. Fiero (3.89)

Yes, arguably the most prominent of the videogame emotions, fiero (the feeling of triumph over adversity – probably a cocktail of norepinephrine, epinephrine, and dopamine) did not even make it half way up the top ten! It was not because it was not highly rated – in fact about three quarters of respondents (77.1%) gave it the top two marks, with about a third (32.7%) saying they seek out games that give them this feeling.

5. Curiosity (3.92)

We were not surprised to see curiosity in the Top Five, but to see it edge out fiero was unexpected! Curiosity, which is an expression of what some psychologists refer to as interest (and could be seen as behaviour rather than an emotion), seems to relate to the beta-endorphin neurotransmitter, which is involved in a mechanism encouraging animals to explore and seek new stimulus. Nicole Lazzaro was the first person to relate it to videogame play, and with good cause! It pulled in big numbers, with once again about three quarters rating it highly (78.8%) and of these about a quarter (24.3%) seeking out games that give them this feeling. Just 5.4% had never had the experience in videogames.

4. Excitement (4.02)

Well, no surprise to see this one near the top! Excitement, as discussed previously, is an expression of epinephrine (adrenalin), and an extremely common experience – just 2.7% of respondents claimed they had never experienced it in the context of videogames. 8 out of 10 people (82.1%) gave it one of the top two responses, with about a quarter (26.3%) actively seeking it out. This emotion also produced the highest incidence of the second-to-highest response (55.8%) in the survey, that is, a strict majority of players recognise excitement as a major contribution to their enjoyment of play.

3. Wonderment (4.07)

Another expression of the interest mechanism mentioned under curiosity, wonderment is probably also related to beta-endorphin. Here, the feeling is more intense – and it seems players respond to the greater intensity. In fact, of all the emotions studied in this survey, this was the highest scorer in terms of respondents actively seeking it out, as even the top 2 emotions did not clear 40% in seeking out the emotion. It seems amazing players is one of the most effective techniques videogames can muster.

2. Contentment (4.09)

We said before the survey began that we suspected that the research community had underestimated the importance of contentment to videogames, and although this crude

ranking is far from definitive, it does seem we were correct! 82.7% gave this emotion one of the top two marks, with 38.2% seeking out games that would give them a sense of contentment.

1. Amusement (4.28)

But head and shoulders above every other emotion in the survey was amusement (for which we have no biological mechanism, although psychologists link it to the resolution of inconsistencies, and it will involve an endorphin of some kind as well as the pre-frontal cortex).

It seems that if we want to make better games for everyone, we should be looking at how to make our games funnier, not more challenging!

Bottom of the List

Finally, you might be interested to know what the bottom three emotions were. At number 20, it was Sadness (2.08), at number 21, Guilt (1.91) and bottom of the barrel at number 22 was Embarrassment (1.70). In all three cases, more than half the respondents said no game had made them feel this way. Oddly, 1.1% of respondents said they actively sought out games that made them feel embarrassed – even allowing for some fatuous respondents, this is still odd. We guess it truly is different strokes for different folks!

What is extraordinary about these ten positive emotions is that gamers have figured out how to spark and feel them whenever they want, no matter where they are, or what kind of day they are having. It doesn't matter if they are bored or stressed or lonely or frustrated or anxious – gamers can change how they feel, just by starting to play. We know that this is true even for gamers in incredibly difficult conditions. For example, children in hospitals prior to surgery are able to control their anxiety by playing a handheld videogame while soldiers in Afghanistan are able to reduce psychological stress by nearly 75% by playing videogames for three to four hours a day. In fact, recent clinical trials have demonstrated that online games can outperform pharmaceuticals for treating mild to moderate depression and anxiety.

3. Do videogames have any meaning or purpose in the very big picture, in the grand scheme of things?

What is Gaming?

Gaming is a way of entertaining yourself in your free time.



There is something *transcendent* about playing games that lifts us up and out of the tedium and pain of everyday life.

What is it about games that makes them transcendent? Perhaps it is the fact that games are optional, they are obstacles that we volunteer to overcome. Games are what we choose to do. They are what we are drawn to when we have a choice about how to spend our time and energy. Games are freedom. Perhaps it is the social and communal aspect of games, that we must all cooperate together to play by the same rules and respect the same values and stay with each other until the game is done, even if we are losing. Games bring us, and keep us, together – and the more people who know how to play a game, the bigger a community we become. Perhaps it is the architectural and mathematical elegance of games, the structure of their goals and rules and scoring that produce heightened ways of thinking and interacting that do not happen in our normal daily lives.

Conclusion

In conclusion, there are many advantages and disadvantages of playing video games. Games were made, primarily, for entertainment. Kids have been hooked on video games for years. And the release of mobile gaming systems has made them even more prevalent, making it easy for kids to play games in the car or the checkout line of the grocery store. With smart phones becoming more common, it is hard to find a kid who is not playing some kind of game on an electronic device.

Although video games get a lot of bad press, they **do** have their benefits. The trick is to find games that foster learning and are age appropriate, while helping your child learn to set limits. Video games should enhance our lives, not take them over.

Games are structure, carefully designed structure, and structure is art.

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Game

Over