



DIGITAL PLAYGROUND: FRIEND OR FOE TO THE CHILDREN?

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Abstract:

For the central entertainment industry of the 21st century - online gaming, children are undoubtedly the key consumer group. Although research on the impact of the gaming industry on children mainly deals with adverse effects such as addiction, violent content, inappropriate conduct and monetisation of personal data, there are also many positive effects – family fun, virtual socialising, improving cognitive skills and using games as a teaching tool. Therefore, all participants' task in the gaming industry value chain is to maximise the positive and minimise the negative impacts on children. A survey conducted among 893 young gamers in Serbia exposed their habits in consuming online games and indicated whether their rights are protected during the gameplay. The conclusion provides recommendations for key stakeholders in the gaming industry's ecosystem on making the digital playground inclusive, safe, and responsible for respecting children's rights.

Article info:

Received: November 19, 2020
Correction: January 8, 2021
Accepted: March 3, 2021

Keywords:

child rights,
gaming,
gaming industry,
Covid-19,
Serbia.

INTRODUCTION

The available data show that in 2019 games earned \$120 billion globally – i.e., \$64.4 billion on mobile devices, \$29.6 billion on desktop computers (PC) and \$15.4 billion on consoles (Superdata, 2020), thus making the gaming industry exceed other entertainment sectors by far, generating three times box office revenues (\$43 billion) and twice music industry revenues (\$57 billion) (Hall, 2020). The industry's exponential growth is grounded on the massive expansion of information and communications technology (ICT). More precisely, the perfection of gaming hardware and broad accessibility of bandwidth and mobile internet accelerated a shift towards the delivery of online games via mobile and cloud-based platforms (ibid). In that respect, online gaming is defined as “playing any type of single or multiplayer commercial digital game via any internet-connected device” (UNICEF, 2019, p. 5).

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The proliferation of platforms and borderless access to various online games have also changed the way how gamers, or “individuals who play video games regularly” (Granic, Lobel and Engels, 2014, p. 68), play, buy and interact. Consequently, the business model of the gaming industry has evolved. Consumers today buy fewer games than before but spend more time in gaming (Hall, 2020), which is why “finding a balance between providing engaging experiences and generating revenue is key for online gaming companies” (UNICEF, 2020, p. 8). As a result, the industry has become entirely focused on increasing user engagement and monetising the game and the gaming experience through expansions, new features and tools (Pappas, Mikalef, Giannakos, and Kourouthanassis, 2019).

The today's gaming industry ecosystem is home to many stakeholders – designers, publishers, console and application (app) store distributors, streaming services, e-sports organisers and teams, sponsors and professional gamers with an abundance of followers. All of them impact the design and the way of game consumption, where children, as “a key consumer group for the gaming industry” (UNICEF, 2019, p. 5) should receive special consideration. Due to exponential growth and easier access to digital technology, children start to play online games at an ever-younger age, resulting in childhood development (Grimes, 2015; Lissak, 2018). Namely, increasing exposure to games and other gamification experiences has strongly influenced the generation of children and adolescents growing up as “digital natives” (Prensky, 2012). When it comes to online games' behaviour (Arı, Yılmaz and Elmasas Dikec, 2020), children tend to spend more time on free gaming sites than on subscription or pay-to-play games and play online games frequently but for short durations (Grimes, 2015). Online gameplay is second only to social media as the most common digital venue for adolescents to meet new friends (Lenhard, 2015). In terms of gender differences, boys spend substantially more time gaming than girls (Lemmens, Valkenburg & Peter, 2011), and show more severe online game addiction (Pawłowska, Potembska & Szymańska, 2018). Boys also play games with friends to a greater extent (Hastings, Karas, Winsler, Way, Madigan & Tyler, 2009) and are more likely to play age-inappropriate games (Coyne, Padilla-Walker, Stockdale and Day, 2011). When it comes to girls, those with lower levels of life satisfaction, coming mostly from urban areas, are more likely to engage in video gaming to a greater extent (Brooks, Chester, Smeeton & Spencer, 2016, p. 49; Pawłowska *et. al*, 2018). Consequently, previous academic research findings led to the structuring of the first research question (RQ1) that this article should answer: *How do children and youth in Serbia consume online games?*

The direct and indirect impact of gaming on children can be both positive and negative. Social and collaborative play in online games has been identified as key to learning (Ventura, Shute & Zhao, 2013; Schaaf & Mohan, 2014) and fun (Kaye & Bryce, 2012), boosting creativity (Jackson, Witt, Games, Fitzgerald, von Eye & Zhao, 2012), improving cognitive abilities (Przybylski, 2014), strategic thinking and digital skills (Hygen, Belsky, Stenseng, Skalicka, Kvande, Zahl-Thanem & Wichstrom, 2020), all of which lead to a sense of well-being of children (Amerijckx & Humblet, 2014). However, as with many other online activities involving children, gameplay can have some negative aspects. In addition to concerns about age-inappropriate content (Charmaraman, Richer & Moreno, 2020), online games can lead to cyberbullying (Huang, Yang & Hsieh, 2019), hate speech in multiplayer games (Geraniols, 2010), foster gender and race stereotypes (Lynch, Tompkins, van Driel & Fritz, 2016; Malkowski & Russworm, 2017), depression and anxiety (Mannikko, Billieux & Kaariainen, 2015) and screen addiction (Lissak, 2018). Moreover, through the collection and monetisation of personal data of young gamers, “advergames, specifically created to incorporate and promote advertisers' products into games and immersive online environments” (UNICEF, 2019, p. 25), can strongly influence children's consumer habits (Folkvord & van 't Riet, 2018; Agante & Pascoal, 2019).



In some cases, the monetisation of games has inspired governments and industry associations to introduce new regulations aimed at protecting the rights of underage players from unwanted content and classified ads, such as the Pan-European Game Information (PEGI), the Entertainment Software Rating Board (ESRB) and International Age Rating Coalition (IARC), which all deal with age and content ratings of online games.

Consequently, companies that produce, sell and promote online games “have a great responsibility to shape their platforms in ways that maximise positive and minimise negative impacts on children” (UNICEF, 2020, p. 3), which was especially evident during the Coronavirus Disease 2019 (COVID-19) outbreak (López-Cabarcos, Ribeiro-Soriano & Piñero-Chousa, 2020). Lockdown and curfews around the globe have forced millions of people to spend more time at home, where the online entertainment industry, driven by online games and esports, has sprung into action to capture their attention (Hall, 2020). The analysis from the leading website about the global video games industry - GamesIndustry.biz, showed that sales across 50 key markets during the virus outbreak rose by 63% (Dring, 2020). Prolonged periods of social isolation that divert time to technology-based activities pose a risk of perpetuating unhealthy lifestyle patterns, which can lead to difficulties in re-adaptation once the COVID-19 crisis has passed (King, Delfabbro, Billieux and Potenza, 2020), where children are particularly vulnerable (World Health Organisation, 2020). Consequently, during the virus outbreak, the United Nations Children’s Fund brought to the fore the issues of “healthy game time, ensuring inclusion, avoiding toxic environments, considerations around age-limits and verification, combatting grooming and sexual abuse, and managing commercial influence” (2020, p. 3) for all the participants in the gaming ecosystem. With this in mind, the second research question (RQ2) to which the article should respond is formulated as follows: *Are the rights of young gamers in Serbia protected during the online gameplay?*

Accordingly, the paper aims to gain insight into the gaming habits and attitudes of young Serbian gamers, so that based on the survey results, recommendations for the key stakeholders can be suggested. In this regard, the objectives of the research are (a) to examine the habits of young gamers in Serbia in terms of the age at which they started gaming, the frequency of play, motives and social interactions; and (b) scrutinise their exposure to unwanted content, advert-games and negative gaming experiences.

Finally, the article is structured as follows. The introductory part outlines the exponential growth and advancement of the gaming industry and its value chain, with a focus on the core target group - children from the earliest age. The positive and negative impact of gaming on children based on previous academic research is highlighted and the recommendations for the gaming industry regarding the opportunities for protection and promotion of children's rights on the digital playground given by United Nations Children Fund (UNICEF) during the COVID-19 outbreak. The section on methodology explains the applied methods of the conducted quantitative research involving children and youth. The obtained survey results are divided into two subsections based on the stipulated research questions; the first part deals with young gamers' habits in Serbia, while the second part deals with the protection of their rights during gameplay. In conclusion, answers are given to the research questions, which provide further recommendations for the gaming industry ecosystem on improving children’s rights in the digital playground.



METHODOLOGY

The opinion pool entitled “How do online games affect children and youth in Serbia?” was active during August 2020 for one month, via an electronic survey on the U-Report platform [1]. The U-Report represents youth's voices and promotes their participation in creating positive social changes on topics that concern them. The involvement of young U-reporters on the platform is voluntary and anonymous. The data processing was performed by UNICEF, which preserved the concept of ethics in research involving children (Kiili & Moilanen, 2019). In the context of the conducted study, we defined a child, based on the Convention on the Rights of the Child, as every human being below the age of eighteen (United Nations, 1989), and youth according to the National Strategy for Youth as persons from 15 to 30 years of age (Serbian Ministry of Youth and Sports, 2015).

The survey consisted of 16 questions with predefined single-choice answers, two of which related to the sample. Of the 7,300 registered U-Reporters, 893 decided to take part in the survey, finding themselves close to the topic of gaming. The survey was slightly dominated by girls (52%) and mostly youth aged 15-19 (71%), reflecting the structure of registered U-Reporters. The rest of the survey questions focused on understanding the gaming patterns of youth in Serbia - the age at which they started gaming, the frequency of play, motives and social interactions, and their potential exposure to inappropriate content, unwanted ads and negative gaming experiences. In some findings, the gender difference in the responses between girls and boys was additionally emphasised. Finally, the young survey respondents made recommendations to the gaming industry to make its digital playgrounds relevant, useful and safe for young gamers.

For additional insights, the quantitative data collected through the survey with children and youth have been uploaded on the Mendeley repository [2].

GAMING HABITS OF THE SERBIAN YOUTH

The first question in the survey was about the age when youth started to play games. In this regard, half of the respondents pointed out that they had started playing online games before the age of ten (50%), and a quarter of them between the ages of 10-12 (26%). In other words, Generation Z from the survey (15-19 years) mainly played games before the age of ten, while the surveyed Millennials (26-30 years old) started a couple of years later - between 10 and 12 years, which indicates a gradual but inevitable shift in the age limit.

When it comes to the frequency of playing, one-third of the young survey respondents confirmed playing games every day or several times a week (34%), which proves that gaming has become an integral part of children and youth's lives in Serbia. Interestingly, almost a third of the surveyed girls play games only when they have free time (30%), while over a fourth of boys do so daily (27%). Despite the global trends of accelerated gaming during the lockdown, the survey results revealed that COVID-19 has not significantly changed Serbian youth's playing habits, as less than half of the respondents confirmed that they play online games the same amount of time as before (42%). However, that this finding should not be particularly encouraging is indicated by the fact that more than a third of the young respondents (36%) have been spending more time on games in recent months compared to the time before the virus outbreak, which requires special attention from the industry and parents.



Among the main reasons for which children and youth play online games, one-quarter of the respondents highlighted fun (29%), followed by boredom and relaxation (12% each), all belonging to emotional motives for online gameplay (Olson, 2020). Bearing in mind that virtual socialising was chosen as a gaming motive by only 8% of young respondents and that more than half gameplay alone (57%), online gaming in Serbia among children and youth cannot be characterised as a social activity. However, it is encouraging to have found that less than a third of young survey participants gameplay online with friends (29%) or in their presence (14%), and that the vast majority have never replaced seeing friends with gaming (64%), in which respect the girls lead.

Table 1. Gaming habits of the Serbian youth (U-Report survey, n=893)

Gaming habits	Behavioural patterns
The age at which youth start playing games	Pushing the boundaries of starting gaming at an early age: Generation Z started gaming two years earlier than the Millennials
Frequency of gameplay	One-third of the youth play games daily or several times a week
Gender differences and gaming frequency	Girls play games in their free time; boys daily
COVID-19 and online gameplay	So far, the youth play online games at the same time as before
Main reasons for online gameplay	Emotional motives: fun, boredom, relaxation
Individual or social gaming	Over half of the youth play games alone
Gaming versus seeing friends	Most of the youth do not need gameplay at the expense of seeing friends, especially girls

RESPONSIBLE GAMEPLAY

Developers and game creators have vast opportunities to establish rules for responsible gaming that protect children and youth's rights on the digital playground. One of the most common control mechanisms for suppressing screen addiction is limiting the game's duration and encouraging players to take breaks. Coming back to our research, almost half of the young survey participants (42%) confirm the possibility of independent decision-making on the duration of the games they play. Still, nearly a quarter of them point out that the games they play have no time limits (23%). Other types of restrictions that are less frequently offered to young gamers in Serbia relate to limiting the number of sessions or levels (13%), time per session or level (9%), encouraging players to take a break (4%), while only 2% of the young gamers stated the existence of an age limit, the setting of which is required for games sold through app stores and consoles.

Exposure to uncontrolled monetisation in games consumed by Serbian children and youth is indicated by the finding that only a third of the respondents do not leave personal data during registration (34%). Namely, one-fifth of the young players who participated in the research leave several pieces of personal data during gameplay (19%), where e-mail (23%) and social media accounts (10%) prevail.



From the gender perspective, boys tend to leave more personal data to the game distributors, as every third male gamer does so (30%) instead of girls who are more responsible in personal data revealing during gaming (50%). Based on the previous findings, it does not surprise that most of the surveyed young gamers confirmed that they notice advertisements while playing, such as commercials and sponsorships (59%). In this regard, of particular concern is the finding that more than a quarter of them (28%) confirmed seeing unwanted advertisements that could not be disabled, thus endangering young gamers' privacy.

Furthermore, it is positive that half of the surveyed young gamers did not encounter inappropriate content (50%). Though over a third of the surveyed youth did notice some type of disturbing or potentially harmful content that upset them, with violence prevailing (25%), and gender stereotypes and sexualised content appearing sporadically (4% each). Moreover, most young, surveyed gamers believe that the games they consume are equally adequate for both genders in terms of their content (69%). Still, almost a third of them consider games they play as primarily intended for boys (30%).

A positive finding is that most young respondents feel safe on the digital playground and state that they have not had any unpleasant experiences (63%) in improper contact and conduct. It does happen sporadically, though, as every sixth young gamer noticed other players' inappropriate behaviour in multiplayer games (17%). A small number of them confirmed that they had insomnia as a result of gaming (7%), experienced bullying in an online chat (6%) or witnessed the mockery of other players (5%).

Consequently, game developers and creators can safeguard children and youth's rights in the digital playground through options such as clearly defined and child-friendly terms of service, privacy policies, community standards, and codes of conduct (UNICEF, 2019). In practice, conditions and instructions that encourage responsible gameplay are often barely noticeable or written in legal language that children and youth do not understand. Therefore, it is not surprising that the young survey respondents generally do not notice conditions for players (42%). Just over a third of them pay attention only to certain conditions (35%), while less than a quarter pay attention to all the requirements listed for players (23%), where girls aged 20-25 dominate.

Finally, Serbia's young gamers believe that the industry could be more responsible for children and protect their rights if a mandatory age limit was set in all games for minors (27%), along with a mechanism to reduce the risk of screen addiction (21%). Other recommendations relate to the game design, so that they are more in line with the interest of young gamers (17%), enhanced policies for the protection of personal data (17%) and the removal of inappropriate content (13%).

**Table 2.** Situation regarding responsible gameplay of young Serbian gamers (U-Report survey, n=893)

Mechanisms for responsible gaming	Research findings
Time or age limits	Half of the surveyed gamers independently decide on the duration of the game. Nearly a quarter confirm that games they play have no time limit while having age limits is rare.
Personal data exposure	Only a third of the respondents, predominantly girls, do not leave personal data during registration. Among the provided personal data, e-mail, and social media accounts prevail.
In-games monetisation	Most young gamers spot advergAMES, and more than a quarter of them cannot disable unwanted ads.
Inappropriate content	Half of the young gamers did not encounter inappropriate content, but more than a third of them noticed potentially harmful content that disturbs them, where violence prevails. Close to a third of the respondents believe that the games are primarily intended for boys.
Inappropriate conduct	Most of the young gamers feel safe on the digital playground. However, every sixth gamer noticed inappropriate behaviour in multiplayer games, while some of them had insomnia or experienced bullying in a chat.
Protection of children's rights	Young gamers mainly do not notice conditions for players, predominantly boys.
Recommendations to the gaming industry	The setting of the age limit and the mechanism for reducing the risk of screen addiction prevails.

CONCLUSIONS

The gaming industry is one of the fastest-growing industries globally, as it is based on the synergy of an exponential development of digital technology, online connectivity and entertainment. Its key consumers and target group are children from the earliest age, so the positive and negative impact of the gaming industry ecosystem on children and their rights is a frequent academic research topic.

When it comes to Serbia, this is the first research involving children and youth about their gaming habits and the gaming industry's impact on their rights. The responses related to the first research question showed that the age limit in starting gaming is slowly but surely moving towards the earliest childhood, considering the finding that Generation Z began to gameplay two years earlier than Millennials. Furthermore, gaming has become a part of everyday life of youth in Serbia, especially for boys, as one-third of the young survey respondents confirmed playing games every day or several times a week. The Serbian youth gameplay for fun, relaxation and out of boredom, mainly alone. Despite that, close to half of the survey respondents game online with friends or in their presence. Additionally, girls are at the forefront of not being inclined to miss seeing friends because of gaming. Although gaming in Serbia is not a social activity, it can be concluded that the paradigm of sociability is shifting from the real to the virtual environment in the new generations. The global pandemic has not yet led to an increase in gameplay, as less than half of the respondents confirmed that they play online games the same as before.



Since the research was conducted during summer, it is questionable how it will affect children and youth in the winter months. Since children and youth start gaming at an early age, parents and educators should look at it as an inalienable part of their childhood and adolescence. Online gameplay is impossible to limit, but parents can encourage children to game with friends, which would motivate their socialisation and reduce addiction, all critical during COVID-19. Game creators should keep in mind parental concern about excessive gameplay and the primary role that online games play in children's lives as they grow up, treating them as key stakeholders to be informed, educated and listened to. In addition to game creators, gaming industry associations such as the Serbian Gaming Association can play a positive role towards parents, encouraging its members to treat them as stakeholders, and providing them with information and channels through which they will better understand their children's gaming habits. On the other hand, educators, due to the reduced attention span in children (Schaaf and Mohan, 2014) and the receptivity of digital environments to informing digital natives, should actively use gamification in the new context by the pandemic - online teaching. The education of teachers in primary schools, and the creation of stimulating and educational gaming solutions should be in the mission of the domestic gaming industry, but also of the Ministry of Education, especially in subjects that have proven to be more difficult to master in the online environment, as well as for younger pupils attending primary school.

When it comes to the second research question concerning the protection of young gamers' rights on the digital playground, the research showed that children and youth in Serbia feel safe on the digital playground stating not having any unpleasant experiences, but are also feeling relatively unprotected. Limits such as time per session, in-game duration or the number of levels, and encouraging players to take a break do not exist in most of the children's games. Setting the age limit is exceedingly rare, which is reflected in young gamers' recommendations for the game developers. The surveyed children and youth are also not fully aware that the personal data they leave during the registration is exploited to monetise free games, so they are exposed to unwanted advertising that cannot be disabled. In this regard, the gaming industry should consider versions of their games adapted to children without collecting data, which at the same time would protect their rights to play and comply with the regulations on the privacy of data of underage users. Although some games, especially those offered through the app stores and consoles, have a mandatory set age limit, it should always be assumed that children will be present in adult game users' database if there are no robust age verification systems.

Surveyed young Serbian gamers confirm that violence and stereotypes sometimes permeate games' content and report occasional inappropriate behaviour in multiplayer environments and chats. Game creators believe that setting codes of conduct, rules for players and respecting regulatory requirements are sufficient, not considering that the legalised slang and used forms are often inconspicuous and unclear not only for children but also for adult players on the platform. Educating young gamers on protecting their rights on the digital playground should become an embedded part of the game, which should be passed within the gaming. Furthermore, popular online gamers can play an important role, actively engaging in underage players' education about their rights and calling for the additional responsibility of the gaming industry. Besides, the psychology of gaming and its impact on children should be in the gaming industry's focus, which should commit to having a team psychologist. The person in this working position could perform impact and due diligence analysis of the online game on children, with the pre-set performance indicators to minimise children's adverse effects. To reduce or neutralise violent content, racial and gender stereotypes embedded in the finding that a third of the surveyed young gamers consider games they play as primarily intended for boys, the gaming industry should establish a balanced and diverse work environment, with adequate representation of female game designers and developers, besides different races.



To this end, the development and popularisation of educational profiles for the gaming industry, not only in technical occupations but also among related ones, such as architecture, design, arts, digital marketing and psychology, along with diversity scholarships, can have an impact on curbing stereotypes and supplying skilled personnel for the gaming industry in the medium term.

The limitation of the research is that the sample of the surveyed children and youth is not nationally representative, which is why the findings cannot be generalised to all underage players in Serbia but only indicate the habits of young gamers and their attitudes regarding the protection of their rights on the digital playground. Further, how the U-Report platform, which was used to survey children and youth, is configured, was a limiting factor in structuring the questions that would lead to a more advanced statistical exploration of the findings. Recommendations for future academic research are to reconsider the habits of young gamers after the end of the pandemic, as well as to cross-reference the views of the gaming industry on children-gamers with the views of children and their parents, to identify the gaps and opportunities for improving children's rights on the digital playground.

ENDNOTES

[1] <https://serbia.ureport.in/>

[2] <https://data.mendeley.com/datasets/4tfx3gp9sr/1>

ACKNOWLEDGEMENTS

The research is part of the project funded by UNICEF Serbia: "Implementation of the Business for Results (B4R) Initiative 2020".



REFERENCES

- Agante, L., & Pascoal, A. (2019). How much is “too much” for a brand to use an advergame with children? *Journal of Product Brand Management*, 28(2), 287–299. <https://doi.org/10.1108/JPBM-08-2017-1554>.
- Amerijckx, G., & Humblet, P. C. (2014). Child Well-Being: What Does It Mean? *Children and Society*, 5, 404–415. DOI:10.1111/chso.12003.
- Ari, E., Yilmaz, V., & Elmastas Dikec, B. (2020). An extensive structural model proposal to explain online gaming behaviors. *Entertainment Computing*, 34, 100340. <https://doi.org/10.1016/j.entcom.2020.100340>.
- Brooks, F. M., Chester, K. L., Smeeton, N. C., & Spencer, N. H. (2016). Video gaming in adolescence: factors associated with leisure time use. *Journal of Youth Studies*, 19(1), 36–54. <https://doi.org/10.1080/13676261.2015.1048200>.
- Charmaraman, L., Richer, A. M., & Moreno, M. A. (2020). Social and Behavioral Health Factors Associated with Violent and Mature Gaming in Early Adolescence. *International Journal of Environmental Research & Public Health*, 17(14), 4996. <https://doi.org/10.3390/ijerph17144996>.
- Coyne, S. M., Padilla-Walker, L. M., Stockdale, L., & Day, R. D. (2011). Game On... Girls: Associations Between Co-playing Video Games and Adolescent Behavioral and Family Outcomes. *Journal of Adolescent Health*, 49(2), 160–165. <https://doi.org/10.1016/j.jadohealth.2010.11.249>.
- Dring, Ch. (2020, March). *What is happening with video game sales during coronavirus?* GamesIndustry.biz. Retrieved October 8, 2020, <https://www.gamesindustry.biz/articles/2020-03-28-what-is-happening-with-video-game-sales-during-coronavirus>
- Entertainment Software Rating Board (n.d.). *ESRB Game Ratings*. Retrieved October 15, 2020, from <https://www.esrb.org/>
- Folkvord, F., & Riet, J. V. T. (2018). The persuasive effect of advergames promoting unhealthy foods among children: A meta-analysis. *Appetite*, 129, 245–251. <https://doi.org/10.1016/j.appet.2018.07.020>.
- Geraniols, N. K. (2010). *Hate speech corrodes online games*. Games on NBCNews.com. Retrieved October 10, 2020, from http://www.nbcnews.com/id/36572021/ns/technology_and_science-games/t/hate-speech-corrodes-online-games/
- Granic, I., Lobel, A., & Engels, R. C. M. E. (2014). The benefits of playing video games. *American Psychologist*, 69(1), 66–78. <https://doi.org/10.1037/a0034857>
- Grimes, S.M. (2015). Online Games and Children. In *The International Encyclopedia of Digital Communication and Society* (Eds P.H. Ang and R. Mansell). New York, USA: John Wiley & Sons. DOI:10.1002/9781118767771.wbiedcs108
- Hall, S. (2020, May). *How COVID-19 is taking gaming and esports to the next level*. World Economic Forum. Retrieved October 8, from <https://www.weforum.org/agenda/2020/05/covid-19-taking-gaming-and-esports-next-level/>
- Hastings, E. C., Karas, T. L., Winsler, A., Way, E., Madigan, A., & Tyler, S. (2009). Young children’s video/ computer game use: Relations with school performance and behaviour. *Issues in Mental Health Nursing*, 30, 638–649. <https://doi.org/10.1080/01612840903050414>.
- Huang, C. L., Yang, S. C., & Hsieh, L. S. (2019). The cyberbullying behavior of Taiwanese adolescents in an online gaming environment, *Children and Youth Services Review*, 106, 104461. <https://doi.org/10.1016/j.childyouth.2019.104461>.
- Hygen, B. W., Belsky, J., Stenseng, F., Skalicka, V., Kvande, M. N., Zahl-Thanem, T., & Wichstrom, L. (2020). Time Spent Gaming and Social Competence in Children: Reciprocal Effects Across Childhood. *Child Development*, 91(3), 861–875. <https://doi.org/10.1111/cdev.13243>.
- International Age Rating Coalition (n.d.). *About IARC*. Retrieved October 27, 2020, from <https://www.globalratings.com/about.aspx>



- Jackson, L. A., Witt, E. A., Games, A. I., Fitzgerald, H. E., von Eye, A., & Zhao, Y. (2012). Information Technology Use and Creativity: Findings from the Children and Technology Project. *Computers in Human Behavior*, 28, 370–376. DOI:10.1016/j.chb.2011.10.006.
- Kaye, L. K., & Bryce, J. (2012). Putting The “Fun Factor” Into Gaming: The Influence of Social Contexts on Experiences of Playing Videogames. *International Journal of Internet Science*, 7(1), 23–36.
- Kiili, J. & Moilanen, J. (2019). Participation as a Methodological and Ethical Issue in Child Protection Research. *Journal of Children's Services*. 14(3), 143–161. DOI: 10.1108/JCS-02-2019-0009.
- King, D. L., Delfabbro, P. H., Billieux, J., & Potenza, M. N. (2020). Problematic online gaming and the COVID-19 pandemic. *Journal of Behavioral Addictions*, 9(2), 184–186. <https://doi.org/10.1556/2006.2020.00016>.
- Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2011). The effects of pathological gaming on aggressive behavior. *Journal of Youth and Adolescence*, 40(1), 38–47. <https://doi.org/10.1007/s10964-010-9558-x>
- Lenhard, A. (2015, August). *Teens, Technology and Friendships*. PewResearch Center. Retrieved October 12, 2020, from <https://www.pewresearch.org/internet/2015/08/06/teens-technology-and-friendships/>
- Lissak, G. (2018). Adverse physiological and psychological effects of screen time on children and adolescents: literature review and case study. *Environmental Research*, 164, 149–157. DOI:10.1016/j.envres.2018.01.015.
- López-Cabarcos, M. Á., Ribeiro-Soriano, D., & Piñero-Chousa, J. (2020). All that glitters is not gold. The rise of gaming in the COVID-19 pandemic. *Journal of Innovation & Knowledge*, 5(4), 289–296. <https://doi.org/10.1016/j.jik.2020.10.004>.
- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, Strong, and Secondary: A Content Analysis of Female Characters in Video Games across 31 Years. *Journal of Communication*, 66(4), 564–584. <https://doi.org/10.1111/jcom.12237>.
- Malkowski, j. & Russworm, T.M. (2017). *Gaming Representation: Race, Gender, and Sexuality in Video Games*. Indiana University Press.
- Mannikko, N., Billieux, J., & Kaariainen, M. (2015). Problematic digital gaming behaviour and its relation to the psychological, social and physical health of Finnish adolescents and young adults. *Journal of Behavioral Addictions*, 4, 282–288. <https://doi.org/10.1556/2006.4.2015.040>.
- Ministry of Youth and Sports of the Republic of Serbia. (2015). *National Youth Strategy for the period from 2015 to 2025*. Retrieved October 6, 2020 from https://www.mos.gov.rs/wp-content/uploads/download-manager-files/nacionalna_strategija_zamlade0101_cyr.pdf
- Olson, C. K. (2010). Children's Motivations for Video Game Play in the Context of Normal Development. *Review of General Psychology*, 14(2), 180–187. <https://doi.org/10.1037/a0018984>.
- Pappas, I.O., Mikalef, P., Giannakos, M.N. & Kourouthanassis, P.E. (2019). Explaining user experience in mobile gaming applications: an fsQCA approach. *Internet Research*, 29(2), 293–314. <https://doi.org/10.1108/IntR-12-2017-0479>.
- Pawłowska, B., Potembska, E., & Szymańska, J. (2018). Demographic and family-related predictors of online gaming addiction in adolescents, *Polish Journal of Public Health*, 128(1), 9-13. DOI: <https://doi.org/10.2478/pjph-2018-0002>.
- Pan European Game Information (n.d.). *About PEGI*. Retrieved October 13, 2020, from <https://pegi.info/what-do-the-labels-mean>
- Prensky, M. (2012). *From digital natives to digital wisdom: Hopeful essays for 21st century learning*. Thousand Oaks, California, USA: Corwin Press.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134, 716–722. <https://doi.org/10.1542/peds.2013-4021>.
- Schaaf, R. & Mohan, N. (2014). *Making School a Game Worth Playing: Digital Games in the Classroom*. Thousand Oaks, California, USA: Corwin.
- SuperData. (2020). *2019 Year in Review: Digital games and interactive media*, SuperData Research Holdings Inc. Retrieved October 8, 2020, from <https://www.superdataresearch.com/reports/p/2019-year-in-review>



- United Nations. (1989). *The Convention on the Rights of the Child*. General Assembly Resolution no. 44/25, c.1. Retrieved October 6, 2020 from <https://www.unicef.org/child-rights-convention>
- United Nations Children Fund. (2020). *Online Gaming and Children's Rights: Recommendations for the Online Gaming Industry on Assessing Impact on Children*, UNICEF.
- United Nations Children Fund. (2019). *Child Rights and Online Gaming: Opportunities & Challenges for Children and the Industry. Discussion Paper Series: Children's Rights and Business in a Digital World*. UNICEF.
- Ventura, M., Shute, V., & Zhao, W. (2013). The relationship between video game use and a performance-based measure of persistence. *Computers & Education*, 60, 52–58. DOI:10.1016/j.compedu.2012.07.003.
- World Health Organisation (2020). Excessive screen use and gaming considerations during #COVID19. WHO Regional Office for the Eastern Mediterranean. Retrieved October 13, 2020, from <http://www.emro.who.int/mnh/news/considerations-for-young-people-on-excessive-screen-use-during-covid19.html>



DIGITALNO IGRALIŠTE: PRIJATELJ ILI NEPRIJATELJ DECE?

Rezime:

Za centralnu industriju zabave 21. veka - onlajn igrice, deca su nesumnjivo ključna potrošačka grupa. Iako se istraživanje uticaja gejming industrije na decu uglavnom bavi negativnim efektima poput zavisnosti, nasilnog sadržaja, neprimerenog ponašanja i monetizacije ličnih podataka, postoje i mnogi pozitivni efekti - porodična zabava, virtuelno druženje, poboljšanje kognitivnih veština i korišćenje igara kao nastavno sredstvo. Stoga je zadatak svih učesnika u lancu vrednosti gejming industrije da maksimiziraju pozitivne i minimiziraju negativne uticaje na decu. Istraživanje sprovedeno među 893 mladih u Srbiji pokazalo je njihove navike u konzumiranju onlajn igara i ukazalo na to da li su njihova prava zaštićena tokom igranja. Zaključak daje preporuke ključnim zainteresovanim stranama u ekosistemu gejming industrije o tome kako digitalno igralište učiniti inkluzivnim, sigurnim i odgovornim kada je reč o poštovanju dečjih prava.

Ključne reči:

prava deteta,
gejming,
gejming industrija,
Kovid-19,
Srbija.