

The Effect of Online Game Addiction on the Quality of Student Education During the COVID-19 Pandemic

Bernadetha Nadeak^{1*} 🕩

¹Universitas Kristen Indonesia, Jakarta, Indonesia *Corresponding author: bernadetha.nadeak@uki.ac.id

Abstract

The ongoing COVID-19 pandemic has had a severe impact on the quality of education in Indonesia. This causes many students to become addicted to online games which will have an impact on children's knowledge, skills, and attitudes. This study aims to describe addiction's effect on the quality of student education during the COVID-19 pandemic in Indonesia. This research is a literature study with a qualitative approach. The results show that during the COVID-19 outbreak, game data usage is reported to have increased worldwide, and download volume games have reached highs record in Asia, including Indonesia. This is caused by games used to cope with the psychological stress caused by the outbreak. Traditional games that were once popular have been replaced by new games such as online video games. Stakeholders should be aware of how addiction increases to online games, especially during a pandemic, and can contribute to the risk of disruption to the quality of student learning, especially if the pandemic continues. The government must formulate alternative ways to avoid online game addiction during the COVID-19 pandemic for people, especially teenagers, which can interfere with the quality of their education.

Keywords: addiction; COVID-19; online games; teenagers

History:	
Received	: June 15, 2021
Revised	: June 20, 2021
Accepted	: September 23, 2021
Published	: October 25, 2021

Publisher: Undiksha Press
Licensed: This work is licensed under
a <u>Creative Commons Attribution 3.0 License</u>

1. INTRODUCTION

The ongoing COVID-19 pandemic has caused severe problems in human life (Selvaraj et al., 2021; Shirish et al., 2021; Yuzulia, 2021). The implementation of distance learning impacts the psychosocial aspects of society. Research shows that the Covid 19 pandemic has had several impacts on students' mental conditions, including time spent on online classes and self-study, medium used for learning, sleeping habits, daily fitness routine, and the subsequent effects on weight, social life, and mental health (Abumalloh et al., 2021; Chaturvedi et al., 2021; Selvaraj et al., 2021). Alarming information about the COVID-19 outbreak in the media is likely to have profound psychosocial effects on society, a situation similar to that which occurred during the 2003 severe acute respiratory syndrome outbreak (Abumalloh et al., 2021; Ko et al., 2010; Susilo et al., 2020).

School closures and event cancellations have limited social interaction among teens during this pandemic (Aji, 2020; Mansyur, 2020; Yulia, 2020). Without following the routine of school and other activities, teens can become isolated playing video games in their rooms (Grewenig et al., 2021; Saha et al., 2021). In addition, teenagers tend to play video games because their other hobbies become impractical. Parents may also be so busy with COVID-19 prevention, work, and chores around the house that they do not pay attention to excessive play in their teens. Teens can also stay up late playing video games because they do not have to go to school the next day. Therefore, the risk of online game addiction may increase during this pandemic due to increased opportunities to play at any time and decreased access to alternative social activities (Rohayani, 2020).

The rise of the game online game has attracted the attention of researchers in recent years. On the one hand, it must be recognized that technological developments online game has opened new possibilities in human life, especially in the world of entertainment (Gandolfi et al., 2021; Hwang et al., 2012). The online game has even become one of the major industries that bring in large economic benefits (Chan et al., 2021; Gong & Hassink, 2019). However, on the other hand, online games also have an unfavorable impact, especially for school-age children. Many studies that discuss the influence of online games on the psychological development of children have been carried out with mixed results. These various kinds of research seek to analyze or find out the impact of the online game on individual and social life.

Game addiction behavior among children and adolescents actually shows a serious problem (Abbasi et al., 2021; Chan et al., 2021). Addicted games This arises because teenagers and children experience difficulties in their lives. They find it difficult to interact with their friends, with their social environment, which in the end tries to treat this difficult feeling by playing games. Played online games In other words, it is an escape or entertainment for various problems faced in their lives (Kowert & Oldmeadow, 2013; Kusumawati et al., 2017). In one sense, the role of online games as an escape may not be a serious problem if this behavior does not cause adolescents to ignore other things (Wiguna et al., 2020; You et al., 2017). Online addiction games affect social adjustment skills among adolescents and children (Ryu et al., 2021; Tan & Chen, 2021). Teens addicted to the online game will focus more on things that are individual and tend to ignore social adjustment skills.

However, it is important to recognize that significant increases in play may not always be beneficial and may pose risks for vulnerable individuals, including minors and those who are exposed to and at risk of developing a gaming disorder (Akbari et al., 2021; Liao et al., 2021). The purported negative effects of excessive play, including harm to mental health, sleep patterns, or physical health, maybe difficult to distinguish due to the adoption of work/homeschool practices (Shoshani et al., 2021; Shoshani & Krauskopf, 2021). Prolonged periods of isolation, technology-based activities, and limited face-to-face interactions have the danger of reinforcing unhealthy lifestyle patterns, intensifying technology-related disruptions, and making it difficult to readjust once the COVID-19 crisis has passed.

Various kinds of research on the impact of addiction online game for the behavior of children and adolescents is one indication that the phenomenon of playing games among adolescents and children, or especially in school-age children, it is indeed a serious concern (Adžić et al., 2021; Chow et al., 2020). During the COVID-19 pandemic, things got even worse. The emergence of the COVID-19 pandemic, which has an impact on the increasing pattern of interaction of school-age children with cell phones, has caused the intensity of children playing games to be higher (Al-zahrani et al., 2021; Oliveira et al., 2021). Online video game developers create various instruments, rules, and game modes. This gives the impression to students that they do not need to imagine when exercising. Online video games often require players to spend a lot of time sitting in front of a computer screen. As a result of this exercise, students' physical health and social skills can decline because they never pay attention to their physical and mental development (Fauzi, 2019; Hwang et al., 2012; Novrialdy, 2019).

Closely related to this non-phenomenal phenomenon, it is urgent to study the causes and effects of video game consumption among the students. This is due to the anxiety of many parties about online video games having an impact on decreasing student creativity, fitness, and other forms of social skills. This research is, therefore, an urgent matter or urgent to do because distance learning patterns are still ongoing during the COVID-19 pandemic. This research is expected to provide recommendations for the distance learning process during the pandemic.

2. METHODS

Research on online game addiction and its effect on students' personal achievement during the COVID-19 pandemic is a literature study that uses a qualitative approach. The data in this study were obtained from literature studies or literature studies that discuss the existence of online games during the COVID-19 pandemic. Qualitative analysis is a natural inquiry method that comprehensively interprets social phenomena in their natural context. It reflects the "why" of social events rather than the "what," and it is based on the direct human experience as meaning-making actors in their daily lives. Instead of logical and mathematical methods, qualitative experts analyze human phenomena using various structures of inquiry such as biographies, case studies, historical analysis, discourse analysis, ethnography, fundamental theory, and phenomenology experts (Moleong, 2018).

Qualitative analysis is a practice that places observers in their environment. It consists of a series of interpretive and material activities that make the universe recognizable. These activities have an impact on the environment. They reflect the world through field notes, interviews, self-recorded images, videos, and memos. Qualitative studies at this stage require an interpretive and naturalistic approach to the environment. This suggests that qualitative scholars investigate events in their natural context, trying to understand or explain them in terms of the meanings people give them (Denzin & Lincoln, 2018).

3. RESULTS AND DISCUSSION

Results

In the era of globalization, science and technology are developing rapidly. Along with the development of science and technology, there are also types of products based on advanced technology. Of course, these technological products exist to meet human needs in the fields of science, health, agriculture, economy, entertainment, and many more. Not only in urban areas but also in rural areas. The rapid development of technology has changed the form of youth games. Through the help of technology, teenagers can carry out game activities without having to meet face-to-face with their opponents. This form of game is better known as online game. Online games are computer games played through some form of internet connection or other telecommunication media. Online games are liked by many people from children and teenagers to adults (Vollmer et al., 2014).

The phenomenon of online games is very quickly endemic among the public and students. At the time before the Covid 19 pandemic, many internet cafes (internet cafes) facilitated playing games in the community, there was even an internet cafe that provided food stalls so that players no longer needed to go home to just eat to play online games. The research stated that 60% of respondents indicated they play online games every day, and 33% of respondents spent more than 3 hours in each session (Lu & Wang, 2008). The Game Addiction Survey shows that 14% of Elementary School students, 22% of Middle School students, and 18% of High School students in South Korea play online video games for more than 2 hours each day (You et al., 2017). A survey in Indonesia states that 35% of teenagers who use the internet play online games and 55% of online game users are male teenagers (Goesvlog, 2013). Data on active internet users in 2014, it is estimated that online game players in Indonesia are around 10.7 million people or about 10% of the total users (Kusumawati et al., 2017). This shows the possibility of an increase in the number of teenagers playing video games in Indonesia, so it is feared that it can have a negative impact if it is not controlled. When the Covid-19 pandemic hit Indonesia, the government decided that people should work from home, including students who study from home.

By learning from home, the school regulates the hours of study. When children study at school, they usually spend 6-8 hours a day, when children study from home, the study time

is reduced to 5 hours. This results in a lot of free time for children. When children cannot play with their friends directly, the child's main choice is to play games. If there is no supervision from parents, it will gradually lead to addiction or addiction. Online game addiction can be seen from the use of time for (on average) 20-25 hours a week (Kusumawati et al., 2017). Online game addiction can cause time distortion, inattention, hyperactivity, violent actions, negative emotions, and aggressive behavior (Vollmer et al., 2014; You et al., 2017). Violence in online video games may have a stronger effect on causing aggression towards teenagers because online games are very interesting and interactive games, online games have games that some of them have patterns of violent behavior, teenagers will behave violently repeatedly because they are playing in the media (Ardi et al., 2017).

Online game addiction can cause time distortion, inattention, hyperactivity, violent actions, negative emotions, and aggressive behavior (Vollmer et al., 2014; You et al., 2017). Violence in online video games may have a stronger effect on causing aggression towards teenagers because online games are very interesting and interactive games, online games have games that some of them have patterns of violent behavior, teenagers will behave violently repeatedly because they are playing in the media. games (Ardi et al., 2017; Kusumawati et al., 2017). Online game addiction can cause time distortion, inattention, hyperactivity, violent actions, negative emotions, and aggressive behavior Violence in online video games may have a stronger effect on causing aggression towards teenagers because online games are very interesting and interactive games, online games have games that some of them have patterns of violent behavior, teenagers will behave violently repeatedly because they are playing in the games have games that some of them have patterns of violent behavior, teenagers will behave violently repeatedly because they are playing in the media games and aggressive behavior (Ardi et al., 2017).

Online games are game applications that consist of several genres that have certain rules and levels. Playing online games provides a sense of curiosity and psychological satisfaction so that it makes players more interested in playing them. The influence of the games that they play continuously, gradually the teenagers will record whatever they play in their subconscious memory and currently the games that are favored by many teenagers are games that are killing, fighting and war games that will cause mental and emotional problems. emotional in adolescents. The aspect of online game addiction is actually almost the same as other types of addiction, but online game addiction is included in the category of psychological addiction and not physical addiction. There are 7 aspects or criteria for online game addiction, namely saliance, tolerance, mood modification, withdrawal, relapse, conflict, and problems. The influence of online game addiction on the behavior of teenagers who like to play online games in game centers (Ulfa, 2017).

Online game addiction can cause time distortion, inattention, hyperactivity, violent actions, negative emotions, and aggressive behavior. Addiction to playing online games will also have a negative impact, especially psychologically, academically and socially. Psychologically, the mind is constantly thinking about the game being played so that students find it difficult to concentrate on lessons and often skip class. Internet addiction to online games can affect social aspects of daily life, starting from the quality of interacting with the closest people, self-image to changes in individual behavior. Some research results show that students prefer to play online games rather than studying or anything else, the higher or more time spent on online games, the lower students' interest in learning. In this case, the average time students spend playing online games ranges from two to three hours with the package system available at the game center. The study time used by students to study at home is relatively only as necessary when approaching exams or tests. -- the role of teachers and parents is very influential on controlling these problems, parents are more to regulate children's habits, children are taught more positive things, to learn or play music.

Discussion

The outbreak of the COVID-19 outbreak has disrupted the teaching-learning process (Satyawan et al., 2021; Srifuengfung et al., 2021). The restrictions on outdoor activities and the prohibition on crowding made schools closed and the learning and teaching process carried out online (Muthuprasad et al., 2021; Shirish et al., 2021). Students learn from home by using the internet as a learning medium by using various meeting applications available on the internet (Almaiah et al., 2020; Choi et al., 2021). This certainly causes boredom to the students and makes them look for means to release the boredom. Because they cannot get together and play outside the house, they look for alternatives and play online games as one of these alternatives.

However, playing online games continuously without knowing the time and circumstances can also have an impact on students (Fauzi, 2019; You et al., 2017). Research shows that video games have a negative impact on the performance of some students (Kowert & Oldmeadow, 2013; Wiguna et al., 2020). Research shows that some children as young as six have become addicted. Parents and educators are genuinely concerned. Video game addiction is thought to contribute to the mental health and social anxiety that even young children face today (Gong & Hassink, 2019; Kusumawati et al., 2017). There appears to be a relationship between depression, self-esteem, and the amount of time a person devotes to playing video games. Studies show that 94 percent of video game addicts are male and only six percent female. Of the men surveyed, many were dissatisfied with their social life and had lower self-esteem. Understandably, these two traits can affect student performance in school.

Second, the inability to concentrate is caused by the habit of playing online games, which constantly stimulates the brain (Ryu et al., 2021; Tan & Chen, 2021). When you play video games, your brain is constantly stimulated. When you quit playing the game, this stimulus stops as well. As a result of the lack of stimulation, it becomes difficult for the brain to concentrate. When a person isn't playing games, they become extremely sedentary. Other than playing games, it appears that other activities are uninteresting.

Third, hyperactive behavior and emotional and physical manifestations of aggressiveness are further side effects of online game addiction (Al-zahrani et al., 2021; Anjasari et al., 2020). Children and teenagers adopt the impressions included in the games they are playing, resulting in these three undesirable behaviors. It is evident that there are many undesirable behaviors that should not be emulated by children and teenagers in the games that are played. This undesirable conduct includes actions that lead to violence, such as beating, molesting, or even killing opponents in the game (Adiningtiyas, 2017; Chan et al., 2021). The more often this harmful behavior is observed by children and teenagers, the more likely it is to be accepted as normal.

Unfortunately, many children who are addicted to video games report that they have been looking for people to talk to but cannot find anyone. They see video games as a stress reliever; they feel in their lives by letting them escape through virtual reality (Fauzi, 2019; You et al., 2017). Video game addiction in children does not occur in complete isolation. The negative effects of video game addiction are clearly visible to responsive individuals. Both parents and teachers may notice a decline in performance in school coupled with lower grades and failing classes. Due to long hours of playing video games, video game addicts show fatigue and often sleep during learning. They may not complete assignments or may not turn in assignments on time. Video game addiction causes a loss of interest in learning activities. Video game addicts may isolate themselves from family members and friends to play video games.

The third thing that the government can do is prepare a new method that combines all the opinions of the public and experts about appropriate online games so that correct and appropriate information is obtained that is useful as a basis for the government in making policies. With this, the community has a role and a share in making policies about which online games are allowed and which are not. It is hoped that the synergy between the government and the community will be able to make the right policy formula in dealing with the problem of addiction to online games.

4. CONCLUSION

The high level of use of online games because of social restrictions creates a risk of addiction to online games. This online game addiction negatively affects students who are still in elementary and middle school, where their learning achievement decreases due to loss of interest and fatigue in playing online games. Besides declining learning achievement, online game addiction also impacts children's physical and mental health.

5. REFERENCES

- Abbasi, A. Z., Rehman, U., Hussain, A., Ting, D. H., & Islam, J. U. (2021). The impact of advertising value of in-game pop-up ads in online gaming on gamers' inspiration: An empirical investigation. *Telematics and Informatics*, 62. https://doi.org/10.1016/j.tele.2021.101630.
- Abumalloh, R. A., Asadi, S., Nilashi, M., Minaei-Bidgoli, B., Nayer, F. K., Samad, S., Mohd, S., & Ibrahim, O. (2021). The impact of coronavirus pandemic (COVID-19) on education: The role of virtual and remote laboratories in education. *Technology in Society*, 67(September 2020), 101728. https://doi.org/10.1016/j.techsoc.2021.101728.
- Adiningtiyas, S. W. (2017). Peran Guru dalam Mengatasi Kecanduan Game Online (Teacher's Role in Overcoming Online Game Addiction). KOPASTA: Jurnal Program Studi Bimbingan Konseling, 4(1), 28–40. https://doi.org/10.33373/kop.v4i1.1121.
- Adžić, S., Al-Mansour, J., Naqvi, H., & Stambolić, S. (2021). The impact of video games on Students' educational outcomes. *Entertainment Computing*, 38. https://doi.org/10.1016/j.entcom.2021.100412.
- Aji, R. H. S. (2020). Dampak Covid-19 pada Pendidikan di Indonesia: Sekolah, Keterampilan, dan Proses Pembelajaran□ Dampak Covid-19 pada Pendidikan di Indonesia: Sekolah, Keterampilan, dan Proses Pembelajaran. Jurnal Sosial & Budaya Syar-I, 5(1), 395– 402. https://doi.org/10.15408/sjsbs.v7i5.15314.
- Akbari, M., Bahadori, M. H., Milan, B. B., Caselli, G., & Spada, M. M. (2021). Metacognitions as a predictor of online gaming in adolescents: Psychometric properties of the metacognitions about online gaming scale among Iranian adolescents. *Addictive Behaviors*, 118. https://doi.org/10.1016/j.addbeh.2021.106904.
- Al-zahrani, S., Althumairi, A., Aljaffary, A., Alfayez, A., Alsalman, D., & Alanezi, F. (2021). Opinion of mental healthcare providers on the impact of electronic games on psychiatric patients in Saudi Arabia. *Informatics in Medicine Unlocked*, 25. https://doi.org/10.1016/j.imu.2021.100647.
- Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies*, 25(6), 5261–5280. https://doi.org/10.1007/s10639-020-10219-y.
- Anjasari, E. A., Srinandi, I. G. A. M., & Nilakumawati, D. P. E. (2020). Hubungan Kecanduan Bermain Game Online Terhadap Interaksi Sosial Pada Remaja (The Relationship between Online Game Addiction and Social Interaction in Adolescents). *E-Jurnal Matematika*, 9(Agustus), 177–181. https://doi.org/10.24843/MTK.2020.v09.i03.p296.
- Ardi, Z., Putra, M. R. M., & Ifdil, I. (2017). Ethics And Legal Issues In Online Counseling

Services: Counseling Principles Analysis. Jurnal Psikologi Pendidikan Dan Konseling: Jurnal Kajian Psikologi Pendidikan Dan Bimbingan Konseling, 3(0), 15. https://doi.org/10.26858/jpkk.v0i0.3657.

- Chan, G., Huo, Y., Kelly, S., Leung, J., & Tisdale, C. (2021). The impact of eSports and online video gaming on lifestyle behaviours in youth: A systematic review. *Computers in Human Behavior*. https://doi.org/10.1016/j.chb.2021.106974.
- Chaturvedi, K., Vishwakarma, D. K., & Singh, N. (2021). COVID-19 and its impact on education, social life and mental health of students: A survey. *Children and Youth Services Review*, *121*, 105866. https://doi.org/10.1016/j.childyouth.2020.105866.
- Choi, J. J., Robb, C. A., Mifli, M., & Zainuddin, Z. (2021). University students' perception to online class delivery methods during the COVID-19 pandemic: A focus on hospitality education in Korea and Malaysia. *Journal of Hospitality, Leisure, Sport and Tourism Education, 29*(August), 100336. https://doi.org/10.1016/j.jhlste.2021.100336.
- Chow, C. Y., Riantiningtyas, R. R., Kanstrup, M. B., Papavasileiou, M., Liem, G. D., & Olsen, A. (2020). Can games change children's eating behaviour? A review of gamification and serious games. *Food Quality and Preference*, 80. https://doi.org/10.1016/j.foodqual.2019.103823.
- Denzin, N. K., & Lincoln, Y. S. (2018). The SAGE Handbook of Qualitative Research Fifth Edition. In *Synthese* (Vol. 195, Issue 5).
- Fauzi, A. (2019). Pengaruh Game Online (Player Unknown's Battle Ground) Terhadap Prestasi Belajar Peserta Didik (The Effect of Online Games (Player Unknown's Battle Ground) on Students' Learning Achievements). ScienceEdu, 2(1), 61. https://doi.org/10.19184/se.v2i1.11793.
- Gandolfi, E., Soyturk, I., & Ferdig, R. E. (2021). Evaluating U.S. gamers' metacognitions about digital entertainment: Validation of Metacognition about Online Gaming Scale in the U.S. context. *Journal of Affective Disorders*, 259. https://doi.org/10.1016/j.jad.2021.08.133.
- Goesvlog. (2013). Tips Mengatasi Kecanduan Game Online Pada Anak.
- Gong, H., & Hassink, R. (2019). Developing the Shanghai online games industry: A multiscalar institutional perspective. *Growth and Change*, 50(3), 1006–1025. https://doi.org/10.1111/grow.12306.
- Grewenig, E., Lergetporer, P., Werner, K., & Woessmann, L. (2021). COVID-19 and educational inequality: How school closures affect low- and high-achieving students. *European Economic Review*, 140. https://doi.org/10.1016/j.euroecorev.2021.103920.
- Hwang, G. J., Wu, P. H., & Chen, C. C. (2012). An online game approach for improving students' learning performance in web-based problem-solving activities. *Computers and Education*, 59(4), 1246–1256. https://doi.org/10.1016/j.compedu.2012.05.009.
- Ko, C. H., Hsiao, S., Liu, G. C., Yen, J. Y., Yang, M. J., & Yen, C. F. (2010). The characteristics of decision making, potential to take risks, and personality of college students with Internet addiction. *Psychiatry Research*, 175(1–2), 121–125. https://doi.org/10.1016/j.psychres.2008.10.004.
- Kowert, R., & Oldmeadow, J. A. (2013). (A)Social reputation: Exploring the relationship between online video game involvement and social competence. *Computers in Human Behavior*, 29(4), 1872–1878. https://doi.org/10.1016/j.chb.2013.03.003.
- Kusumawati, R., Aviani, Y. I., & Molina, Y. (2017). Perbedaan Tingkat Kecanduan (Adiksi) Games Online Pada Remaja Ditinjau dari Gaya Pengasuhan (Differences in Online Game Addiction (Addiction) Levels in Teenagers in terms of Parenting Style Gaya). *Jurnal RAP (Riset Aktual Psikologi Universitas Negeri Padang)*, 8(1). https://doi.org/10.24036/RAPUN.V8I1.7955.
- Liao, G.-Y., Cheng, T. C. E., Shiau, W.-L., & Teng, C.-I. (2021). Impact of online gamers'

conscientiousness on team function engagement and loyalty. *Decision Support Systems*, 142. https://doi.org/10.1016/j.dss.2020.113468.

- Lu, H. P., & Wang, S. M. (2008). The role of Internet addiction in online game loyalty: An exploratory study. *Internet Research*, 18(5), 499–519. https://doi.org/10.1108/10662240810912756.
- Mansyur, A. R. (2020). Dampak COVID-19 Terhadap Dinamika Pembelajaran Di Indonesia. *Education and Learning Journal*, 1(2), 113. https://doi.org/10.33096/eljour.v1i2.55.
- Moleong, L. J. (2018). Metodologi Penelitian Kualitatif. Remaja Rosdakarya.
- Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open*, *3*(1). https://doi.org/10.1016/j.ssaho.2020.100101.
- Novrialdy, E. (2019). Online Game Addiction in Adolescents: Impacts and its Preventions. *Buletin Psikologi*, 27(2), 148–158. https://doi.org/10.22146/buletinpsikologi.47402.
- Oliveira, T. D. O., Costa, D. S., Alvim-Soares, A., Paula, J. J. de, Kestelman, I., & Silva, A. G. (2021). Children's behavioral problems, screen time, and sleep problems' association with negative and positive parenting strategies during the COVID-19 outbreak in Brazil. *Child Abuse & Neglect*, 6. https://doi.org/10.1016/j.chiabu.2021.105345.
- Rohayani, F. (2020). Menjawab Problematika yang Dihadapi Anak Usia Dini di Masa Pandemi COVID-19 (Answering the Problems Facing Early Childhood During the COVID-19 Pandemic). *Qawwam: Journal For Gender Mainstreaming*, 14(1), 29–50. https://doi.org/10.20414/Qawwam.v14i1.2310.
- Ryu, K., Kim, Y., & Woo, M. (2021). False accusation of online games: Internet gaming can enhance the cognitive flexibility of adolescents. *Asian Journal of Sport and Exercise Psychology*, 1(2). https://doi.org/10.1016/j.ajsep.2021.09.006.
- Saha, A., Dutta, A., & Sifat, R. I. (2021). The mental impact of digital divide due to COVID-19 pandemic induced emergency online learning at undergraduate level: Evidence from undergraduate students from Dhaka City. *Journal of Affective Disorders*, 294(June), 170–179. https://doi.org/10.1016/j.jad.2021.07.045.
- Satyawan, I. M., Wahjoedi, W., & Swadesi, I. K. I. (2021). The Effectiveness of Online Learning Through Undiksha E-Learning During the Covid-19 Pandemic. *Journal Education Technology*, 5(2). https://doi.org/10.23887/jet.v5i2.32364.
- Selvaraj, A., Radhin, V., KA, N., Benson, N., & Mathew, A. J. (2021). Effect of pandemic based online education on teaching and learning system. *International Journal of Educational Development*, 85(May), 102444. https://doi.org/10.1016/j.ijedudev.2021.102444.
- Shirish, A., Chandra, S., & Srivastava, S. C. (2021). Switching to online learning during COVID-19: Theorizing the role of IT mindfulness and techno eustress for facilitating productivity and creativity in student learning. *International Journal of Information Management*, 61(January), 102394. https://doi.org/10.1016/j.ijinfomgt.2021.102394
- Shoshani, A., Braverman, S., & Meirow, G. (2021). Video games and close relations: Attachment and empathy as predictors of children's and adolescents' video game social play and socio-emotional functioning. *Computers in Human Behavior*, 114. https://doi.org/10.1016/j.chb.2020.106578.
- Shoshani, A., & Krauskopf, M. (2021). The Fortnite social paradox: The effects of violentcooperative multi-player video games on children's basic psychological needs and prosocial behavior. *Computers in Human Behavior*, 116. https://doi.org/10.1016/j.chb.2020.106641.
- Srifuengfung, M., Thana-udom, K., Ratta-apha, W., Chulakadabba, S., Sanguanpanich, N., & Viravan, N. (2021). Impact of the COVID-19 pandemic on older adults living in longterm care centers in Thailand, and risk factors for post-traumatic stress, depression, and

anxiety. Journal of Affective Disorders, 295(August), 353–365. https://doi.org/10.1016/j.jad.2021.08.044.

- Susilo, Rumende, Pitoyo, Santoso, Yulianti, Herikurniawan, & Sinto. (2020). Coronavirus Disease 2019: Tinjauan Literatur Terkini Coronavirus Disease 2019: Review of Current Literatures. *Jurnal Penyakit Dalam Indonesia*, 7(1). https://doi.org/10.7454/jpdi.v7i1.415.
- Tan, W.-K., & Chen, L.-M. (2021). That's not my fault: Excuses given by players exhibiting in-game intra-team aggressive behavior in online games. *Computers in Human Behavior*, 127. https://doi.org/10.1016/j.chb.2021.107045.
- Ulfa, M. (2017). Effect Of Addiction Online Game On Adolescent Behavior In Mabes Game Center Road Hr. Subrantas In Pekanbaru. In *JOM. FISIP* (Vol. 4, Issue 1).
- Vollmer, C., Randler, C., Horzum, M. B., & Ayas, T. (2014). Computer game addiction in adolescents and its relationship to chronotype and personality. *SAGE Open*, 4(1). https://doi.org/10.1177/2158244013518054.
- Wiguna, R. I., Menap, H., Alandari, D. A., & Asmawariza, L. H. (2020). Hubungan Kecanduan Bermain Game Online dengan Motivasi Belajar Pada Anak Usia 10-12 Tahun (The Relationship between Online Game Addiction and Learning Motivation in Children aged 10-12 Years). Jurnal Surya Muda, 2(1), 18–26. https://doi.org/10.38102/jsm.v2i1.48.
- You, S., Kim, E., & Lee, D. (2017). Virtually Real: Exploring AvatarIdentification in Game Addiction among Massively Multiplayer Online Role-Playing Games (MMORPG) Players Sukkyung. *Games and Culture*, 12(1), 56–71. https://doi.org/10.1177/1555412015581087.
- Yulia, H. (2020). Online Learning to Prevent the Spread of Pandemic Corona Virus in Indonesia. *ETERNAL* (*English Teaching Journal*), 11(1). https://doi.org/10.26877/eternal.v11i1.6068.
- Yuzulia, I. (2021). The Challenges of Online Learning during Pandemic: Students' Voice. *Wanastra: Jurnal Bahasa Dan Sastra*, 13(1), 08–12. https://doi.org/10.31294/w.v13i1.9759.