Journal of Proceedings Series No. 2 (2024)
The 2nd International Conference of Islamic Education
June 27th 2024, Institut Islam Mamba'ul 'Ulum Surakarta, Kota Surakarta, Indonesia

Can Online Games Motivate Students' Learning? (Study on Elementary School Students)

Basri[1*], Muh. Asharif Suleman[1], Zulfi Idayanti[1]

[1]UIN Sunan Kalijaga, Yogyakarta, Indonesia
*Co-email: basribasyir862@gmail.com asharifmuhammad2000@gmail.com zulfidayanti1502@gmail.com

ARTICLE INFO

Article History:
Recieved : 30-May-2024
Revised : 06-July-2024
Accepted: 22-Aug-2024
Available online: 30-Sep-2024

Keywords:
Motivation to Learn;
Online Game;
Digital Learning.

ABSTRACT

This research aims to analyze the impact of using online games on SD 2 Kendari students. This type of research is quantitative, and data collection is done through a questionnaire designed to measure the impact of using online games on student learning motivation. The population in the study was 150 students in classes IV and V, and we used purposive sampling techniques. The results of the research show that the level of online game use among SD 2 Kendari students reached 53%. Meanwhile, students' learning motivation is in the medium category, with a percentage of 57%. Meanwhile, the results of hypothesis testing show a significant negative influence between the level of online game use and learning motivation, with a probability value of 0.00 <0.05 and T-count (-4.263) > T-table (2.010), with a contribution of online games to learning motivation of 27.1%. Therefore, this research shows that the level of online game use almost has the same value for learning motivation. Thus, the importance of increasing elementary school students' learning motivation is integral. The use of online games is basically able to motivate, but it still needs to be controlled and accommodate more study hours. Research provides an important understanding that the use of online games must be controlled more consistently so that students study more hours and use online games less.

INTRODUCTION

In an increasingly advanced digital era, online games have become an inseparable part of the lives of children and teenagers. The influence of online games is not only visible from the entertainment aspect but is also starting to spread to the world of education. This phenomenon raises an important question: whether online games can be used as a tool to motivate students' learning or whether they are detrimental to the younger generation as the spearhead of the nation's progress and civilization (Grimes, 2021). Several empirical studies reveal that online games have the potential to develop critical thinking, problem solving, and collaboration skills between students Chen & Chuang, (2021), Duncan, (2020), and (Mao et al., 2022). However, there is still a lot that needs to be learned about what happens to the younger generation due to the use of online games and whether they can be effectively integrated into the educational curriculum to increase student motivation and learning outcomes (Jääskä & Aaltonen, 2022). This certainly invites critical debate from education observers. Therefore, this crucial issue is increasingly showing interest in being discussed or explored in the form of research studies.

In the educational context, learning motivation is one of the key factors that influences students' academic success (Filgona et al., 2020). Strong motivation can increase student involvement in the learning process and encourage them to achieve higher achievements (Asvio, 2022). Therefore, exploring the potential of online games as a learning tool is a relevant and important step. This fact is increasingly receiving serious attention, along with various empirical facts revealed through extensive research Anak Yunus & Hua, (2021), Alam, (2022), and (Xu et al., 2023). The results of this study can essentially be interpreted as meaning that there are views that must be considered regarding the impact of using online games. Most would certainly consider that the use of online games as a medium to increase children's learning motivation still needs to be considered. The era of disruption accompanied by digitalization makes it very important to explore whether this phenomenon still has the same impact as the previous era (Rapaccini et al., 2020).

Many studies have discussed how educational games can improve students' motivation and learning outcomes in various subjects, such as mathematics, science, and language Bai et al., (2020), Zeng et al., (2020), and (Shi et al., 2022). The results of this research suggest that game-based learning or online games will increase self-efficacy or motivate students to study harder. Therefore, there is an important correlation: online games do not always have to be seen as something negative, but parents must be able to balance students' habits in using their free time (Clark & Dumas, 2020)CC. X. Chen et al., (2022) also confirm that student performance will experience a massive increase when learning is integrated with competition-based and digital-based learning. This phenomenon is an important adaptation for educators to adjust to the challenges of the times, which lead to human life being spent more in the digital world. One theory that can explain human life patterns that can accommodate their behavior to do something is a description of motivation theory, such as self-determination theory (SDT) and flow theory, which are often used to explain how and why games can motivate students (Xia et al., 2022).

As part of the digital generation, today's students grow up in an environment full of visual and interactive stimulation (Haleem et al., 2022). They are more interested in dynamic and interactive media compared to static, traditional learning methods. Online games, with the interactive elements, challenges, and rewards they offer, seem to suit their preferences and learning needs (Bakhanova et al., 2020). However, although many studies show that educational games can increase student engagement in the short term, there are still doubts regarding their long-term effectiveness and how the skills gained from these games can be applied in conventional learning contexts (Bouchrika et al., 2021). Additionally, there are concerns that reliance on online games may distract students from core subject matter and reduce time spent on traditional learning (Checa et al., 2023). Therefore, it is important to explore whether online games can serve as an effective bridge between entertainment and education or whether they are simply additional tools without a significant impact on students' learning motivation.

Through consideration of the literature facts and empirical studies above, the author is interested in exploring further the impact of using online games on learning motivation in elementary school students, specifically in Kendari. Most research focuses on the short-term results of using online games for learning. There is a need for longitudinal studies that evaluate the long-term effects of online game use on student motivation and learning outcomes. Therefore, this study will investigate students' subjective experiences in using online games for learning, including the challenges they face, so that the results of this research are able to empirically reveal patterns of online game use, whether they are still able to motivate students or actually reduce their study hours, resulting in ineffective student education. Ultimately, this research not only seeks to answer questions about the effectiveness of online games in motivating learning but also wants to provide practical guidance for educators in implementing games as an effective learning tool. Thus, it is hoped that this research can contribute significantly to improving the quality of education in the digital era.

LITERATURE REVIEW

Motivation to Learn

Learning motivation is a complex and important psychological phenomenon in the educational context. Learning motivation can be explained as an individual's internal tendency to initiate, maintain, and complete learning activities effectively, which is influenced by various internal and external factors (Filgona et al., 2020; Ulfah et al., 2024). These factors include intrinsic drives, such as the desire to learn out of curiosity or personal achievement, as well as extrinsic drives, such as gifts or praise from others (Edu et al., 2021; Ulfah et al., 2024). Apart from that, learning motivation can also be seen in an individual's level of determination or perseverance in facing learning challenges, as well as the satisfaction or happiness they feel when achieving their learning goals (Roberson, 2020).

In the educational context, learning motivation is often measured through several indicators, including the level of participation in class, the level of persistence in doing assignments, and the level of academic achievement (Mohamed Mohamed

Bayoumy & Alsayed, 2021). Other indicators include the level of interest in the subject matter, the level of involvement in class discussions, and the perception of the importance of education in achieving individual life goals. Thus, learning motivation not only includes the drive to achieve high academic achievement but also includes emotional and cognitive aspects of the learning process (Chang & Tsai, 2022).

Online Game

Online gaming, also known as online gaming, has become a significant cultural phenomenon in modern society (Khanmurzina et al., 2020). Games include games played over an internet connection, either individually or in the form of online multiplayer games (Raith et al., 2021). Types of online games include browser-based online games, client-based online games, and social media games. In recent decades, online gaming has become one of the most popular forms of entertainment worldwide. Millions of people from all backgrounds and ages engage in online gaming every day. Individual motivations for playing online games vary widely, including for entertainment, social development, intellectual challenge, and as a means of escape from everyday reality (Cheah et al., 2022).

Research on online gaming has revealed the complex impact of these games on individuals and society (Muriel & Crawford, 2020). On the one hand, online games can be an effective learning tool, promoting cognitive skills such as problem solving, teamwork, and strategy (Bakhsh et al., 2022). However, on the other hand, excessive use or addiction to online games has been linked to negative impacts, including sleep disturbances, decreased academic performance, and mental health problems (Purwaningsih & Nurmala, 2021). Apart from that, ethical issues also arise along with the development of online games. Therefore, there is a need for appropriate supervision and regulation to protect players, especially children and teenagers, from the potential negative impacts of online gaming (Faraz et al., 2022). In the context of psychology and sociology, online games have also become an interesting research subject.

Research on player behavior, community dynamics in games, and interactions between players has provided valuable insights into how online gaming shapes digital culture and identity in modern society (Richardson et al., 2021). Overall, online gaming is a complex phenomenon that has a significant impact on individuals and society as a whole. With a deep understanding of gaming motivations, positive and negative impacts, and associated ethical issues, research on online gaming can help inform public policy, clinical practice, and the development of more sustainable and inclusive technologies (Shultz et al., 2022).

Digital Learning

Digital learning, also known as e-learning, refers to a learning process that uses digital technology as the main medium to deliver, support, and facilitate learning (Koh & Kan, 2021). Digital learning includes various digital platforms, applications, and tools used to provide learning materials, facilitate interaction between students and

instructors, and support learning evaluation and assessment (Bujang et al., 2020). Digital learning has become a significant phenomenon in the world of education, driven by advances in information and communication technology. In various literature, digital learning is often seen as a tool that can increase accessibility, flexibility, and effectiveness of learning (Aljawarneh, 2020). Several studies have been conducted to explore the benefits and challenges of digital learning in various educational contexts. Such as Tejedor et al., (2021) students and teachers perceive solutions in two different contexts: educational solutions mainly deal with communication from university departments and teachers to students, whereas digitalization of subjects focuses on learning in new ways and even redefining domains. Basically, digital learning usage patterns cannot be separated from the COVID-19 phenomenon, which forces every individual to adapt behavior patterns that connect remotely (Latifah & Supena, 2021). Meanwhile, Taglietti et al., (2021) revealed that 2020 marked an era of massive digitalization, with a short time forcing academic activities to be moved from campuses to online classrooms, with the main approach being to rethink the learning process, which is made possible by technology.

METHOD

First, The research method used in this study is quantitative, which allows for a systematic and measurable analysis (Syamsul et al., 2023) of the impact of using online games on SD 2 Kendari students. Data collection was carried out through a questionnaire specifically designed to measure students' learning motivations who were affected by interaction with online games. This questionnaire includes various questions carefully designed to explore students' perceptions and experiences of the use of online games in learning contexts. The population that was the research subject was 150 students from grades IV and V, selected using a purposive sampling technique that ensured an appropriate representation of various grade levels and student characteristics. Based on this understanding, the population in this study is students in grades 4 and 5 at SD Negeri 2 Kendari, each in grades 4 and 5, consisting of 4 parallel classes totaling 150 children.

Second, Then, the collected data will be analyzed statistically to identify patterns and trends in the impact of online game use on student learning motivation. Comprehensive statistical analysis will help understand the extent to which the use of online games can influence student learning motivation at SD 2 Kendari. It is hoped that the results of this research will provide a deeper understanding of the dynamics between interaction with online games and student learning motivation, thereby providing valuable guidance in the development of more effective and sustainable learning approaches in the future.

FINDINGS

The data contained in this research reflects data that is relevant to the formulation of the problem. This data was obtained by respondents, who were students who were sampled in the research. A total of 51 students filled out a

questionnaire consisting of 24 questions regarding student perceptions of online games and 26 questions regarding learning motivation. The data from the questionnaire is then processed and analyzed to produce accurate information regarding objective situations related to the use of online games and student learning motivation at SD Negeri 2 Kendari. The results of the research are then described in detail.

Descriptive Statistics of Online Game Usage

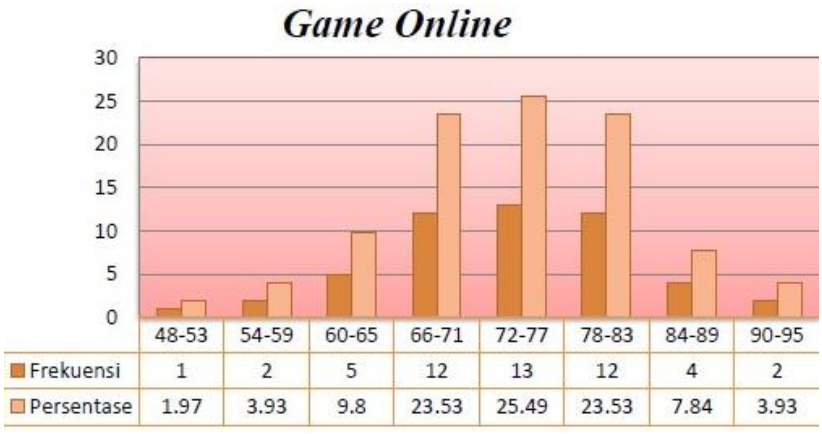
Picture 1. Descriptive statistics of online game usage

Online Game (X)	
Instrumen	51
Mean	73.5686
Median	74
Mode	70
Std. Deviation	8.886624
Variance	78.61
Range	42
Minimum	48
Maximum	90
Sum	37252

Based on the table above, it is known that the scores obtained from the instruments distributed are as follows: average 73.56, median 74, mode 70, standard deviation 8.866, variance 78.610, range 42, minimum value 48, maximum value 90, and the number is 3752. Apart from the descriptive data, the data can also be presented in the form of a frequency distribution using Sturgess' rules, as follows: Range = Largest Data - Smallest Data = 90 - 48 = 42 Number of Classes = 1 + 3.3 log n = 1 + 3.3 log 51 = 7.63 = 8 Class Length = Span / Number of Classes = 42 / 7 = 6

Online Game Data Normality Test

Figures 2 Alocation data online game



Based on the histogram image, it can be seen that the peak of the curve is in the middle, which shows that the highest online game scores are in the interval 72–77 with

a percentage of 25.49%, or as many as 13 students. The fewest rows of curves are in the 48–53 interval, with a percentage of 1.97%, or 1 student. The frequency distribution is as follows: Interval 48-53: frequency 1 (1.97%), interval 54-59: frequency 2 (3.93%), interval 60-65: frequency 5 (9.8%), interval 66-71: frequency 12 (23.53%), interval 72-77: frequency 13 (25.49%), interval 78-83: frequency 12 (23.53%), interval 84-89: frequency 4 (7.84%), and interval 90-95: frequency 2 (3.93%).

Determining the trend of students' online game variables shows that the maximum value is 90 and the minimum value is 48. The average value is 73.56, with a standard deviation of 8.866.

Descriptive Statistics of Learning Motivation Data

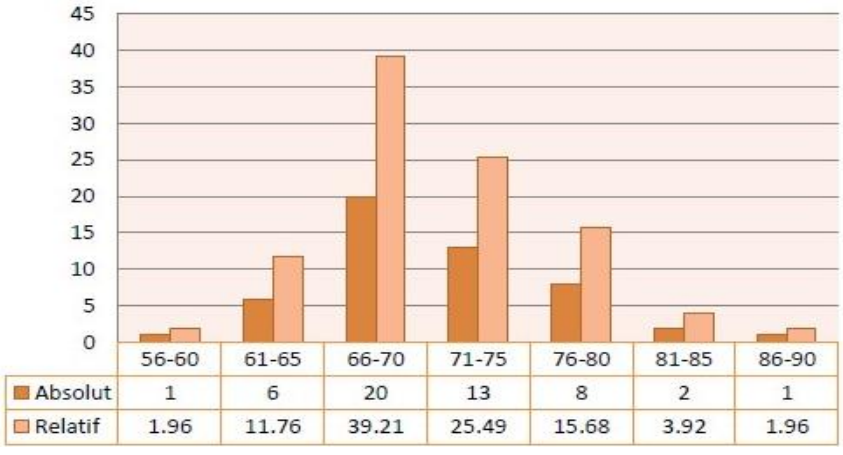
Figures 3 Learning motivation descriptive

Motivasi Belajar (Y)	
Instrumen	51
Mean	71.098
Median	70
Mode	70
Std. Deviation	6.17497
Variance	38.13
Range	34
Minimum	56
Maximum	90
Sum	3626

Based on the table above, it is known that the scores obtained from the instruments distributed are: the mean is 71.09, the median 70, the mode 70, the standard deviation is 6.1749, the variance 38.130, the range 34, the minimum value is 56, the maximum value is 72, and the total 3626.

Normality Test of Learning Motivation Data

Picture 4 Histogram Normality



Based on the histogram image above, it can be seen that the peak of the curve is at the highest part, which means that the students' learning motivation scores are in the highest group in the 66–70 interval with a percentage of 39.21% for 20 students, and there is a row of curves. There are a few intervals (56–60 and 86–90), each with a percentage of 1.96%, and each has 1 student per interval.

Normality Test Results of Online Game Data and Learning Motivation

Figures 5 Normality Test

Variable	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig	Statistic	Df	Sig
Game Online	0.108	51	0.190	0.974	51	0.333
Motivasi Belajar	0.109	51	0.188	0.974	51	0.330

In the SPSS 23 output results in Table 4.7 above, it can be seen that for all independent and dependent variables tested, the significance value is greater than alpha, or α = 0.05. The significance value for the online game variable (X) is 0.190 and for learning motivation (Y) is 0.188. This shows that the significance value of these two variables is greater than alpha 0.05. Therefore, H0 is accepted, which means that all independent and dependent variable data used in this research and tested using Kolmogorov-Smirnov have a normal distribution of data.

Linearity Test

Figures 6 ANOVA Table

Indicators	Sum of Square	Df	Mean	F	Sig.
Motivation Learn	878.343	18	48.852	1.522	0.146
Online Game	515.793	1	515.79	16.069	0.000
Between Group	363.55	17	21.385	0.666	0.811
Linearity	1027.167	32	32.099		
Total	1906.51	50			

The results of the linearity test of this research data, as presented in Figure 6 above, show that the significance value of deviation from linearity in the online game variable on learning motivation is 0.811. Thus, the significance value of the variables studied is greater than α = 0.05. Therefore, it can be concluded that the regression line for this variable is linear, so it can be used.

Hypothesis testing

Figures 7 Regresi XY

Model	Unstandardized		Standardized		
	Beta	Std.Error	Beta	T	Sig.
Constant	97.749	6.296	-0.52	15.526	0.000
Online Game	-0.362	0.085	-0.52	-4.263	0.000

The constant value of the unstandardized coefficients in this case is 97.749. This number is a constant, which means that if there are no online games (X), then the learning motivation value (Y) is 97.749. The regression coefficient value is -0.362. This figure means that for every 1% increase in the level of online gaming (X), learning motivation (Y) will decrease by 0.362. Because the regression coefficient value is negative (-), it can be said that online games (X) have a negative effect on learning motivation (Y). So, the regression equation is Y = 97.749 - 0.362X.

Significance Test

Figures 8 Significance Test Results

Model	R	R-Square	Adjusted R Square	Std. Error
1	0.52	0.271	0.256	5.327

Based on the results of the calculations above, it can be concluded that there is an influence between variable X and variable Y of 0.271%. This means that the intensity of playing online games influences the learning motivation of class IV and V students at SD Negeri 2 Kendari in 2021 by 27.1%, while the remaining 72.9% is influenced by other factors not examined in this research.

The Impact Of Students' Use Of Online Games

The research results show that the online game variable is in the high category, with the number of students being 27, or around 53%. This is in line with the theory that addiction to online games can cause children to become less motivated to learn because they are more interested in games than lessons. This research also supports the findings Sun et al., (2023) that show that the intensity of playing online games has a negative and significant relationship with students' learning motivation. This, of course, must be an evaluation for fifth grade students regarding the intensity of using online games and their impact on learning motivation.

The negative impact of the intensity of playing online games on students' learning motivation, especially observed in fifth grade students, emphasizes the need for more attention to time management and the use of technology in educational environments. This research provides a deeper understanding of how interaction with online games can disrupt students' concentration in learning activities and emphasizes the important role of parents and teachers in supervising and directing their children's online activities. Appropriate preventive and intervention measures need to be implemented to reduce the negative impact of online game use on student learning motivation (Saletti et al., 2021). This includes educating students about healthy time management, developing awareness of the negative impacts of gaming addiction, and promoting more educationally beneficial activities outside of the online gaming environment. Awareness of the risks and benefits of technology, if instilled early, can help create a more balanced and productive learning environment for students (Kamalov et al., 2023).

Student's Motivation To Study

After the descriptive analysis of online games is completed, the next step is to carry out another descriptive analysis for the learning motivation variable, with the aim of assessing the level of student learning motivation at SD Negeri 2 Kendari. The number of respondents involved in measuring learning motivation was 51, where each variable had a maximum, minimum, mean, variance, and standard deviation value. The learning motivation variable shows a maximum value of 90 and a minimum value of 56, with a mean of 71.09, a variance of 38.130, and a standard deviation of 6.174.

In this analysis, data from 51 respondents was used, where each variable related to learning motivation had various descriptive statistics, including maximum, minimum, mean (average), variance, and standard deviation values. The maximum value shows the highest value achieved by the respondent in measuring learning motivation, while the minimum value is the lowest value. The mean is the average value of all the measured data, while the variance and standard deviation provide information about how far the data is spread from the average. Thus, this descriptive analysis provides a deeper understanding of how students' learning motivation at the school varies and is spread across the range of grades given. According to Winkel (2004) , motivation is an active impulse at certain times, which encourages a person to carry out activities to achieve certain goals. In the context of learning, motivation can be interpreted as an internal force that encourages students to be involved in learning activities, ensures the continuity of the learning process, and provides direction to learning activities so that the desired goals can be achieved.

This fact shows that learning motivation is a dynamic process that arises naturally in response to internal and external stimuli to carry out activities to achieve learning goals (Dörnyei, 2000). The interaction between the individual and the environment creates a series of efforts to regulate certain conditions that support continuity and provide direction to the learning process (Kondratenko et al., 2021). Internal and external drives in students encourage them to engage in learning activities that enhance skills and experience. The impact can be seen in the number of students who do not reach the set standard scores due to the influence of online games, which are popular and often played by many children.

The Impact Of Using Online Games On Student Learning Motivation

Based on the results of research data analysis with students at SD Negeri 2 Kendari, The results of the Pearson Product Moment Correlation Test analysis in Table 4.8 prove that there is an influence between online game variables and learning motivation. It is explained that the significance value is 0.000<0.05, so if the two variables, namely variable X and variable Y, have a relationship or correlation with a degree of relationship of -0.520, then the direction of the relationship is negative. So it can be said that the higher the negative influence variable X (online games) will be followed by the lower variable Y (learning motivation). Analysis of research data shows that there is an influence between the variable use of online games and student

learning motivation at SD Negeri 2 Kendari. This is confirmed by the results of the Pearson Product Moment Correlation Test, which show a significance value of 0.000, which is smaller than the alpha value that is generally used (0.05). This shows that the relationship between the two variables, namely variable X (online game use) and variable Y (learning motivation), has statistical significance.

In addition, the Pearson correlation coefficient obtained was -0.520, indicating a negative relationship between the online game variable and learning motivation. This means that the higher the use of online games (variable X), the lower the level of student learning motivation (variable Y). This illustrates that students who are more frequently involved in using online games tend to have lower learning motivation.

This analysis provides important insight for educators and parents about the importance of managing children's online time and activities, as well as paying attention to the impact on their learning motivation (Drever et al., 2015). Efforts to reduce excessive use of online games and replace them with activities that are more educationally useful can help increase student learning motivation (Papastergiou, 2009).

CONCLUSION

Based on research conducted at SD 2 Kendari, the main finding is that the majority of students use online games, with a usage rate reaching 53%. On the other hand, student learning motivation is in the medium category with a percentage of 57%. However, further analysis showed a significant negative influence between the level of online game use and learning motivation. The low probability value (0.00 < 0.05) and the significant difference between T-count and T-table (-4.263 > 2.010) indicate that the use of online games significantly contributes to decreased learning motivation. More specifically, the contribution of online games to learning motivation was recorded at 27.1%.

Research on Can Online Games Motivate Student Learning" has important implications in the educational context. Although online games have great potential as a tool that can motivate students to learn, the findings of this research highlight that the use of online games does not always produce a positive impact on learning motivation. This This shows the need for a deeper understanding of how the use of online games can influence students' learning motivation. Teachers and curriculum developers need to design more effective learning strategies that take into account the thoughtful integration of online games. In addition, appropriate management of students' use of online games is also important because too much exposure can interfere with their learning motivation and academic performance. Involving parents and schools in directing students' online game use can be key to supporting their learning motivation. Further research is also needed to better understand the factors that influence the relationship between the use online games and learning motivation, as well as to identify effective strategies for optimizing the use of online games in education.

Therefore, the author provides research suggestions that this study requires a more comprehensive methodology with a more representative sample selection, a stronger research design, and more valid and reliable measurement instruments. Second, the variables studied need to be formulated more specifically, such as the type of online game used and specific aspects of learning motivation. Data analysis also needs to be deepened with more complex statistical techniques to evaluate the relationship between online game use and student learning motivation in more detail. Third, the research could be expanded by adopting a longitudinal approach that would allow monitoring of changes in learning motivation and online game use over time. In addition, broader contexts, such as environmental and psychological factors, also need to be considered. By improving these aspects, research can provide a deeper understanding of online game use and students' learning motivation, as well as provide more effective guidance for educational practitioners in designing relevant and meaningful learning strategies.

REFERENCES

Alam, A. (2022). A digital game based learning approach for effective curriculum transaction for teaching-learning of artificial intelligence and machine learning. *2022 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)*, 69–74.

Aljawarneh, S. A. (2020). Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of Computing in Higher Education*, *32*(1), 57–73.

Anak Yunus, C. C., & Hua, T. K. (2021). Exploring a gamified learning tool in the ESL classroom: The case of Quizizz. *Journal of Education and E-Learning Research*, *8*(1), 103–108.

Asvio, N. (2022). *The influence of learning motivation and learning environment on undergraduate students' learning achievement of management of Islamic education, study program of IAIN Batusangkar In 2016*.

Bai, S., Hew, K. F., & Huang, B. (2020). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. *Educational Research Review*, *30*, 100322.

Bakhanova, E., Garcia, J. A., Raffe, W. L., & Voinov, A. (2020). Targeting social learning and engagement: what serious games and gamification can offer to participatory modeling. *Environmental Modelling & Software*, *134*, 104846.

Bakhsh, K., Hafeez, M., Shahzad, S., Naureen, B., & Faisal Farid, M. (2022). Effectiveness of digital game based learning strategy in Higher Educational Perspectives. *Journal of Education and E-Learning Research*, *9*(4), 258–268.

Bouchrika, I., Harrati, N., Wanick, V., & Wills, G. (2021). Exploring the impact of gamification on student engagement and involvement with e-learning systems. *Interactive Learning Environments*, *29*(8), 1244–1257.

Bujang, S. D. A., Selamat, A., Krejcar, O., Maresova, P., & Nguyen, N. T. (2020). Digital learning demand for future education 4.0—Case studies at Malaysia education institutions. *Informatics*, *7*(2), 13.

Chang, Y.-C., & Tsai, Y.-T. (2022). The effect of university students' emotional intelligence, learning motivation and self-efficacy on their academic achievement—Online English courses. *Frontiers in Psychology*, *13*, 818929.

Cheah, I., Shimul, A. S., & Phau, I. (2022). Motivations of playing digital games: A review and research agenda. *Psychology & Marketing*, *39*(5), 937–950.

Checa, D., Miguel-Alonso, I., & Bustillo, A. (2023). Immersive virtual-reality computer-assembly serious game to enhance autonomous learning. *Virtual Reality*, *27*(4), 3301–3318.

Chen, H., & Chuang, Y. (2021). The effects of digital storytelling games on high school students' critical thinking skills. *Journal of Computer Assisted Learning*, *37*(1), 265–274.

Chen, X., Zou, D., Xie, H., Cheng, G., & Su, F. (2022). A bibliometric analysis of game-based collaborative learning between 2000 and 2019. *International Journal of Mobile Learning and Organisation*, *16*(1), 20–51.

Clark, E., & Dumas, A. (2020). Children's active outdoor play:'good'mothering and the organisation of children's free time. *Sociology of Health & Illness*, *42*(6), 1229–1242.

Dörnyei, Z. (2000). Motivation in action: Towards a process-oriented conceptualisation of student motivation. *British Journal of Educational Psychology*, *70*(4), 519–538.

Drever, A. I., Odders-White, E., Kalish, C. W., Else-Quest, N. M., Hoagland, E. M., & Nelms, E. N. (2015). Foundations of financial well-being: Insights into the role of executive function, financial socialization, and experience-based learning in childhood and youth. *Journal of Consumer Affairs*, *49*(1), 13–38.

Duncan, K. J. (2020). Examining the effects of immersive game-based learning on student engagement and the development of collaboration, communication, creativity and critical thinking. *TechTrends*, *64*(3), 514–524.

Edu, A. L., Jaya, P. R. P., & Ni, L. (2021). The Phenomenon of Learning Motivation of Elementary School Students. *International Journal of Elementary Education*, *5*(2), 337–342.

Faraz, A., Mounsef, J., Raza, A., & Willis, S. (2022). Child safety and protection in the online gaming ecosystem. *IEEE Access*, *10*, 115895–115913.

Filgona, J., Sakiyo, J., Gwany, D. M., & Okoronka, A. U. (2020). Motivation in learning. *Asian Journal of Education and Social Studies*, *10*(4), 16–37.

Grimes, S. M. (2021). *Digital playgrounds: The hidden politics of children's online play spaces, virtual worlds, and connected games*. University of Toronto Press.

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275–285.

Jääskä, E., & Aaltonen, K. (2022). Teachers' experiences of using game-based learning methods in project management higher education. *Project Leadership and Society*, *3*, 100041.

Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New era of artificial intelligence in education: Towards a sustainable multifaceted revolution. *Sustainability*, *15*(16), 12451.

Khanmurzina, R. R., Cherdymova, E. I., Guryanova, T. Y., Toriia, R. A., Sukhodolova, E. M., & Tararina, L. I. (2020). Computer games influence on everyday social practices of students-gamers. *Contemporary Educational Technology*, *11*(1), 11–19.

Koh, J. H. L., & Kan, R. Y. P. (2021). Students' use of learning management systems and desired e-learning experiences: Are they ready for next generation digital learning environments? *Higher Education Research & Development*, *40*(5), 995–1010.

Kondratenko, L. O., Samoylenko, H. T., Selivanova, A. V, Pursky, O. I., Filimonova, T. O., & Buchatska, I. O. (2021). *Computer simulation of processes that influence adolescent learning motivation*.

Latifah, N., & Supena, A. (2021). Analisis Attention Siswa Sekolah Dasar Dalam Pembelajaran Jarak Jauh di Masa Pandemi Covid-19. *Jurnal Basicedu*, *5*(3), 1175–1182.

Mao, W., Cui, Y., Chiu, M. M., & Lei, H. (2022). Effects of game-based learning on students' critical thinking: A meta-analysis. *Journal of Educational Computing Research*, *59*(8), 1682–1708.

Mohamed Mohamed Bayoumy, H., & Alsayed, S. (2021). Investigating relationship of perceived learning engagement, motivation, and academic performance among nursing students: A multisite study. *Advances in Medical Education and Practice*, 351–369.

Muriel, D., & Crawford, G. (2020). Video games and agency in contemporary society. *Games and Culture*, *15*(2), 138–157.

Papastergiou, M. (2009). Digital game-based learning in high school computer science education: Impact on educational effectiveness and student motivation. *Computers & Education*, *52*(1), 1–12.

Purwaningsih, E., & Nurmala, I. (2021). The impact of online game addiction on adolescent mental health: A systematic review and meta-analysis. *Open Access Macedonian Journal of Medical Sciences (OAMJMS)*, *9*(F), 260–274.

Raith, L., Bignill, J., Stavropoulos, V., Millear, P., Allen, A., Stallman, H. M., Mason, J., De Regt, T., Wood, A., & Kannis-Dymand, L. (2021). Massively multiplayer online

games and well-being: A systematic literature review. *Frontiers in Psychology*, *12*, 698799.

Rapaccini, M., Saccani, N., Kowalkowski, C., Paiola, M., & Adrodegari, F. (2020). Navigating disruptive crises through service-led growth: The impact of COVID-19 on Italian manufacturing firms. *Industrial Marketing Management*, *88*, 225–237.

Richardson, I., Hjorth, L., & Davies, H. (2021). *Understanding games and game cultures*. Sage.

Roberson, S. A. M. (2020). Developing student success through persistence: teaching more than content. *Education*, *141*(2), 83–100.

Saletti, S. M. R., Van den Broucke, S., & Chau, C. (2021). The effectiveness of prevention programs for problematic Internet use in adolescents and youths: A systematic review and meta-analysis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *15*(2).

Shi, A., Wang, Y., & Ding, N. (2022). The effect of game–based immersive virtual reality learning environment on learning outcomes: designing an intrinsic integrated educational game for pre–class learning. *Interactive Learning Environments*, *30*(4), 721–734.

Shultz, C., Hoek, J., Lee, L., Leong, W. Y., Srinivasan, R., Viswanathan, M., & Wertenbroch, K. (2022). JPP&M's Global Perspective and Impact: An agenda for research on marketing and public policy. *Journal of Public Policy & Marketing*, *41*(1), 34–50.

Sun, R.-Q., Sun, G.-F., & Ye, J.-H. (2023). The effects of online game addiction on reduced academic achievement motivation among Chinese college students: the mediating role of learning engagement. *Frontiers in Psychology*, *14*, 1185353.

Syamsul, T. D., Guampe, F. A., Amzana, N., Alhasbi, F., Yusriani, Y., Yulianto, A., Ayu, J. D., Widakdo, G., Virgantari, F., Halim, H., & Naryati, N. (2023). METODE PENELITIAN KUANTITATIF: TEORI DAN PENERAPANNYA. In *Penerbit Tahta Media* (Issue SE-Katalog Buku). Tahta Media Group. http://tahtamedia.co.id/index.php/issj/article/view/526

Taglietti, D., Landri, P., & Grimaldi, E. (2021). The big acceleration in digital education in Italy: The COVID-19 pandemic and the blended-school form. *European Educational Research Journal*, *20*(4), 423–441.

Tejedor, S., Cervi, L., Pérez-Escoda, A., Tusa, F., & Parola, A. (2021). Higher education response in the time of coronavirus: perceptions of teachers and students, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 43.

Ulfah, Y. F., Alhasbi, F., & Bachtiar, F. (2024). The Language of Learning: Exploring How Family and Instructional Communication Drive English Education Context. *Utamax : Journal of Ultimate Research and Trends in Education*, *6*(1), 44–54. https://doi.org/10.31849/utamax.v6i1.19409

Xia, Q., Chiu, T. K. F., Lee, M., Sanusi, I. T., Dai, Y., & Chai, C. S. (2022). A self-determination theory (SDT) design approach for inclusive and diverse artificial intelligence (AI) education. *Computers & Education*, *189*, 104582.

Xu, M., Luo, Y., Zhang, Y., Xia, R., Qian, H., & Zou, X. (2023). Game-based learning in medical education. *Frontiers in Public Health*, *11*, 1113682.

Zeng, J., Parks, S., & Shang, J. (2020). To learn scientifically, effectively, and enjoyably: A review of educational games. *Human Behavior and Emerging Technologies*, *2*(2), 186–195.