



# Online Games' Effects On Business Administration Student Achievement At Nunukan State Polytechnic

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**Abstract.** The purpose of this study is to determine how internet gaming affects student performance. The research was conducted over a period of four months, from March to August 2021, at the Polytechnic of the State of Nunukan, which is situated in the J.Limau RT.03 Kelurahan Nunukan South District of the Nunukan Province of Northern Kalimantan. The population data used in this study were collected from 89 students who were administration of business administration students at Nunukan Polytechnic State. This research is quantitative and used the questionnaire (Angket) method of data collection. The SPSS tool version 20 is used in this study's data processing method. Results According to this study, playing online games helps state polytechnic business administration students do better academically. A partial test of the hypothesis (Variable X) establishes this. It is well recognized that the influence of has a considerable value for This is demonstrated by the coefficient of determination test (R<sup>2</sup>) results, which indicate that online games have a negligible impact on improving students' performance, with an impact of just 86.7%.

**Keywords:** Online Game, Student Achievement, SPSS

## 1. Introduction

The development of online games in Indonesia is also experiencing rapid development, along with the increase in the number of smartphone users in Indonesia, which has reached 177 people, and mobile gamer users, who have reached 6.5 million people.

According to (Novrialdy 2019) Novrialdi in his reaserch about Online Game Addiction in Teenagers: Its Impact and Prevention is The problem of online game addiction demands public attention. Currently, many studies tend to be focused on efforts to reduce the level of addiction. However, there are very limited studies centered on discussing efforts to prevent this occurrence. In addition, there have been reports of its impact on several aspects of life, including health, psychologically, academically, socially and financially. Therefore, there is a need for preventive approaches, due to the impacts that disrupt the life of adolescents, which this paper is expected to identify. Furthermore, future research ought to focus on in-depth examination of other alternatives to prevent online game addiction. (Rosendo-Rios, Trott et al. 2022) Online gaming addiction refers to a persistent and recurrent use of internet to engage in games leading to significant impairment or distress in a person's life. With the current pandemic, media reports suggest that the greater access of

online devices among children and young adults has intensified online gaming addiction. However, the domain of online gaming addiction is a relatively new phenomenon with disparate studies examining various facets of it.

The factors are factors that originate from within the student. physiological and psychological factors. Physiological factors, namely body health and the functioning of the five senses, especially vision, hearing, and mental health. Psychological factors are potential factors that include intellectual and talent factors as well as real-world everyday skill factors. Psychological factors include certain personality elements such as attitudes, habits, interests, needs, motivation, emotional intelligence, and adjustment. Factors that come from outside the student. External factors that affect individuals include the family environment, educational environment, community environment, group or community environment, and friends.

According to Suryabrata (2006: 297) Student Achievement is a value which is the final formulation that can be given by the teacher regarding student progress or achievement during a certain period.

According to Arifin (2012: 3), student achievement is the result of a person's abilities, skills and attitudes in completing various things. According to Surya (2004; 145) in Galih Ariwaseso (2011: 5), student achievement is the result of learning or changes in behavior involving science, skills and attitudes after a certain process, as a result of individual experiences in interacting with their environment.

As for the factors mentioned above, the researchers found them while carrying out educational studies at the Nunukan State Polytechnic campus in Nunukan Regency, North Kalimantan, which consisted of several majors, including those in Business Administration, Heavy Equipment Engineering, Urban Infrastructure Civil Engineering, Product Processing Technology, and Fishery. While carrying out his education at the Nunukan State Polytechnic Business Administration major, researchers analyzed problems related to student achievement that were influenced by online game play, including achievement that fell due to wasted time due to excessive use of online game play, lack of student achievement, minimal knowledge, character, shallow thought patterns, and so on. The aim of this research is to find out and analyze the influence of online games on the achievements of Nunukan State Business Administration students.

## **2. Literature Review**

### **a. Online Game**

Online games or often referred to as Online Games are games that are played on a network (both LAN and the Internet), these games are usually played simultaneously with an unlimited number of players. According to Januar and Turmuzi (2006:52) online games are computer games that can be played by multiple players via the internet.

In Samuel's opinion (2010: 7) online games are games with a network, where interactions between one person and another to achieve goals, carry out missions, and achieve the highest score in the virtual world.

Online games, a word that is often used to represent a digital game that is currently popular in this modern era. This online game is often found in everyday life. Although some people think that online games are synonymous with computers, games do not only operate on computers. Games can be on consoles, handhelds, and even games on mobile phones. Online games are useful for refreshing or eliminating the player's boredom, whether it's from daily activities (work, study, and other factors) or just to fill free time.

According to Winn (2004:33), online games are a development of games played by one person, in large part using the form the same and the same method and involves the same general concepts as all other games the difference is that for multiplayer.

The calculation that online game is a game that is played on a computer and is carried out online (via the internet) and can be played by many people simultaneously at one time.

#### **b. Online Game Function**

Games are typically played to relax. Games are employed as a kind of refreshment because they might make us feel depleted. But we also need to set time limits when playing games; they shouldn't be excessive. Our eyes may become sore if it is too lengthy. Being able to make decisions is necessary for gaming as well. This demands that we be able to select positive interpretations rather than negative ones. Pornography and acts of violence are two negative examples. We can learn more through games. There are educational games, for example. For instance, if the game is in English and we don't understand the word, we will look it up in the dictionary. That is the benefit of playing video games.

#### **c. Advantages of Online Gaming**

When it comes to the advantages of playing online games, there are actually a lot of advantages. But regrettably, because of the negative stigma that exists in society, playing online games is viewed as a bad and unproductive activity. So that the advantages of playing online games may be fully understood, the following 10 advantages of playing online games will be discussed:

- 1) Relationships to Add
- 2) Improves performance and brain abilities
- 3) Increase focus
- 4) Improve problem solving abilities
- 5) Improve English language skills
- 6) Dealing with stress
- 7) Improve team collaboration skills
- 8) Develop optimism and self-confidence

**d. Online Game Indicators**

Online Game Indicators (According to Daniel Gilon, 2020; 167)

- 1.) Playing Time Measures how long gamers play by showing the level of online game play
- 2.) Attention to play measures attention to the seriousness of youth in playing online games
- 3.) Playing frequency measures how often gamers play online games.

**e. Student Achievement**

According Masrufa, 2019 Student Achievement is a value which is the final formulation that teachers can give regarding student progress or achievements over a certain period of time. According to Surya in Galih Ariwaseso (2011:5), student achievement is the result of learning or changes in behavior involving science, skills, and attitudes after a certain process, as a result of individual experiences in interacting with their environment.

**f. Types of Student Achievement**

One indicator of the success of a student on campus is the number of achievements achieved, both in accordance with the field of knowledge, hobbies and environmental activities. So for this reason, a student must know what achievements he must achieve and make while he is a student. Broadly speaking, on campus there are three types of achievements that students must pursue according to the classification of achievement in the guidebook for selecting outstanding students in 2018, Directorate General of Learning and Student Affairs, Ministry of Research, Technology, and Higher Education, which are as follows:

**g. Achievements**

In simple terms, achievement is an achievement obtained through a competition mechanism, the output of which is a ranking of competition results.

**h. Awards/Recognition of Achievement**

Award or recognition of achievement is an award/prize/acknowledgment given by international/regional/national/provincial level institutions or associations for student achievements in one or several specific fields of knowledge obtained for their services/efforts in the development of science and technology or providing benefits to public.

**i. Leadership Achievements**

Becoming a leader is also an achievement that students must achieve while on campus. The ability to be a leader cannot be obtained just like that, of course it requires a long process to be appointed as a leader, therefore being a leader is an achievement. In student organizations such as HIMA, UKM, and BEM, regardless of the number of members, usually there is only one person who is the chairman, as well as other strategic positions that must be led by one person, meaning that the leader is a special person so that his friends recognize him.

Student Achievement Indicators (According to Iswanti, 2009; 225) Every parent usually has their own standard regarding whether their child is said to be an achiever or not. But in the academic world, children's learning achievement can be seen from three indicators, including cognitive, affective, and psychomotor aspects.

1) Cognitive

From the cognitive aspect, what children pay attention to is knowledge, application and analysis. A child is said to have achieved good learning achievement if he meets indicators, such as: being able to verbally explain and define the material presented to him, being able to provide real examples and using them appropriately, being able to classify, being able to conclude the material presented, being able to generalize and criticize.

2) Affective

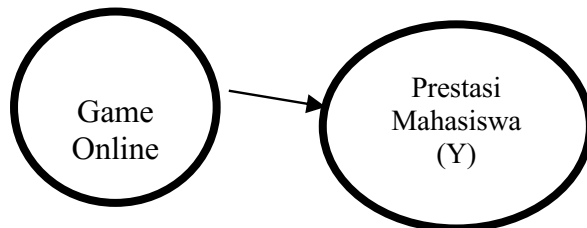
The affective domain of learning achievement indicators includes the attitudes shown by children during the learning period. In practice, children who excel will show an attitude of accepting the material presented well, giving achievements, respecting others, being able to work together in groups, and showing strong character in everyday life.

3) Psychomotor

This aspect includes the physical skills that children demonstrate during the learning period. Children who are said to have achieved good learning achievements will be able to coordinate the movements of their eyes, hands, feet and other body parts, as well as utterance, expression and other physical movements.

**j. Research Framework**

Based on the theories that have been stated above, the framework of this research is as follows:



**k. hypothesis**

The hypothesis is a temporary statement that needs to be proven true or not which is presumptive because it still has to be proven true.

Based on the formulation of the problem and framework, the hypothesis put forward by the researcher is as follows:

Hi = suspected that online games have a positive and significant effect on business administration student achievement at the Nunukan State Polytechnic

**3. Methodology Of The Research**

This research was conducted at the Nunukan State Polytechnic which is located at Jl. RT lime. 11 Selisun Village, South Nunukan District, Nunukan Regency, North

Kalimantan Province. This research was carried out according to a predetermined period of time (3) months, namely from March to July 2021.

a. Population and Sample

According to Sugiyono (1997:57), population is a general area consisting of objects/subjects that have certain numbers and characteristics that are determined by researchers to be studied and then conclusions drawn. So the population used in this study is Nunukan State Polytechnic Business Administration students. According to Nana Sudjana and Ibrahim (2004: 85), explains that a sample is a part of the population that can be reached and has the same characteristics as the population being sampled. The type of sample used is Accidental Sampling (sampling by chance or coincidence). The sample used in this study was Nunukan State Polytechnic Business Administration students, totaling 89 people.

b. Data Collection Techniques

1.) Observation

Is a data collection technique by direct observation of the object under study. In this study the researchers made observations at the Nunukan State Polytechnic. For observations conducted by researchers to obtain data by means of direct observation at educational sites

2.) Questionnaire (Questionnaire)

Is a data collection technique by sending a list of questions to respondents to be filled. In data collection techniques using questionnaires there are assumptions/assumptions.

3.) Literature Study

Namely finding and collecting materials related to the problem under study to obtain secondary data by reading, studying and exploring literature related to the problems discussed in this study so that researchers obtain sufficient theoretical foundation to account for the analysis and development of these problems.

4.) Data Analysis Tools

The author used an analysis tool with the SPSS version 20 application program. This research also used Simple Linear Regression Analysis to find out how the dependent variable (Y) can be predicted through the independent variable (X), individually and how much influence the independent variable has on the dependent variable, after the data is changed from ordinal to interval, put it in the formula:

$$Y=a+bx$$

Information:

Y : Subjects in the predicted dependent variable

a : Constant

b : Directional number or regression coefficient that shows the increase or decrease in the dependent variable based on the independent variable that has a certain value

x : Subject to the independent variable having a certain value

To find out the correlation, several tests must be carried out, including:

A. The t test aims to determine whether there is a partial (self) influence exerted by the independent variable (X) on the next variable (Y)

B. Dimensional Coefficient (R<sup>2</sup>) functions to determine the percentage of influence of the independent variable (X) simultaneously on the dependent variable (Y).

#### 4. Result and discussion

To help analyze existing problems, the researcher will present data that the author obtained from Nunukan State Polytechnic Business Administration Students using a questionnaire, namely a data collection method by making a list of statements (questionnaire) or filling in the variables studied (sample). The measurement in question is to assess each respondent's answer for each statement submitted, relating to Online Games (X) and Student Achievement (Y).

##### a. Validity and Reliability Test

##### i. Validity Test

This study uses questionnaire data as primary data, so it is necessary to test the statement (questionnaire) to find out whether or not the question is appropriate as a statement in the questionnaire. This test is used to measure the validity or suitability of the questionnaire used by researchers in organizing and obtaining research data from respondents. A research questionnaire is said to be of high quality if its validity and reliability have been proven.

The basis for making a decision from the validity test is:

- a. By comparing the value of r count with r table where if the value of r count > r table then the statement is said to be valid. Conversely, if the value of r count < r table then the statement is said to be invalid. How to find the value of r table, namely N - 2 at 5% significance, then the value of r table = 0.2084
- b. By looking at the significance value (sig) where if the significance value is <0.05 then the statement is said to be valid. Conversely, if the significance value is > 0.05, the statement is said to be invalid.

Output results for variable X (Online Games)

**Tabel 1 Correlations Variable X**

		Correlations			
		x1	x2	x3	tx
x1	Pearson Correlation	1	.240 <sup>*</sup>	.266 <sup>*</sup>	.265 <sup>*</sup>
	Sig. (2-tailed)		.023	.012	.012
	N	89	89	89	89
x2	Pearson Correlation	.240 <sup>*</sup>	1	.455 <sup>**</sup>	.435 <sup>**</sup>
	Sig. (2-tailed)	.023		.000	.000
	N	89	89	89	89
x3	Pearson Correlation	.266 <sup>*</sup>	.455 <sup>**</sup>	1	.580 <sup>**</sup>
	Sig. (2-tailed)	.012	.000		.000
	N	89	89	89	89
Tx	Pearson Correlation	.265 <sup>*</sup>	.435 <sup>**</sup>	.580 <sup>**</sup>	1
	Sig. (2-tailed)	.012	.000	.000	
	N	89	89	89	89

*. Correlation is significant at the 0.05 level (2-tailed).
** . Correlation is significant at the 0.01 level (2-tailed).

Output results for variable Y (Student Achievement)

**Tabel 2 Correlations Variable Y**

Correlations					
		y1	y2	y3	ty
y1	Pearson Correlation	1	.773**	.135	-.245
	Sig. (2-tailed)		.000	.209	.413
	N	89	89	89	89
y2	Pearson Correlation	.773**	1	.183	.567
	Sig. (2-tailed)	.000		.087	.972
	N	89	89	89	89
y3	Pearson Correlation	.135	.183	1	.456
	Sig. (2-tailed)	.209	.087		.993
	N	89	89	89	89
Ty	Pearson Correlation	-.088	.004	.001	1
	Sig. (2-tailed)	.413	.972	.993	
	N	89	89	89	89

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the output of the variables above, it can be concluded that the output results are as follows:

**Table 3 Validity Test Output Results**

No	Indicator Variable X	r count	r table	S. Sig	Value Sig.	Information
1	Playing Time (X1)	0,265	0,2084	0,05	0,000	Valid
2	Attention Play (X2)	0,435			0,000	
3	Frequent Play( X3)	0,580			0,000	
No	Indicator Variable Y	r count	r table	S. Sig	Value Sig.	Information
1	Cognitive (Y1)	0,245	0,2084	0,05	0,000	Valid
2	Affective (Y2)	0,567			0,000	
3	psychomotor (Y3)	0,456			0,000	

*ii. Reliability Test*

In the concept of reliability testing, there are several basic Cronbach's alpha reliability tests:

- a. A research questionnaire is said to be of high quality if its validity and reliability have been proven.
- b. The reliability test is carried out after the questionnaire items are declared valid.
- c. The reliability test aims to see whether the questionnaire has consistency if the measurement is carried out with the questionnaire repeatedly.



- d. The reliability test can be carried out jointly on questionnaire items on a research variable.

The basis for making decisions on reliability testing according to Wiratna Sujerweni (2014), the questionnaire is said to be reliable if the value of Cronbach's alpha is > 0.6

From the output of the variables, it can be concluded that the output results are as follows:

Table 4 Reliability Test Output Results

No	Variable	Cronbach's Alpha	Value Standard	Information
1	Online Game (X)	0,764	0,6	Reliable
2	Student Achievement (Y)	0,834		

The results of the reliability test show that all variables have a fairly large Alpha coefficient, namely 0.6, so it can be said that the entire concept of measuring each variable from the questionnaire is reliable so that the next item in each variable concept is reliable. suitable as a measuring tool.

*b. Simple Linear Regression Equations*

Simple regression analysis is used to find out how the dependent variable (Y) can be predicted through the independent variable (X), simple regression analysis can be obtained via SPSS. In the coefficient table and for the regression are:

$$Y=a+bx$$

Information:

Y : Subjects in the predicted dependent variable

a : Constant

b : Directional number or regression coefficient indicating the size of the increase or decrease in the dependent variable based on the independent variable that has a certain value

x : Subject to the independent variable which has a certain value

Based on data analysis using simple regression calculations with the SPSS program, the following results were obtained:

Table 4.5 Simple Linear Regression Test Results

$$Y=19.873+0-.365x$$

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		Std. Error	Beta		
1 (Constant)	19.873	3.178		6.254	.000
XT	-.386	.186	-.365	-2.076	.002

a. Dependent Variable:

Based on the equation obtained above, it can be seen that the standardized coefficients beta is 365, meaning that for every 1% addition, the influence of x on y amounts to 365.

c. Hypothesis Testing

i. t Test (Partial)

The basis for making a decision for the t test is:

1. If the Sig. <0.02 or t count > t table, then there is an influence between variable X and variable Y

2. If the Sig. > 0.02 or t count < t table then there is no influence between variable X on variable Y

$$t \text{ table} = t(a/2 ; n-1) = t(0.025 ; 88) = 1.987$$

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		Std. Error	Beta		
(Constant)	19.873	3.178		6.254	.000
XT	-.386	.186	-.365	2.076	.002

a. Dependent Variable:

From the output results above, it can be seen that the calculated t value is -2.076 < t table 1.987, so it can be concluded that there is an influence between variable X and variable Y.

ii. Test the coefficient of determination (R2)

The purpose of the coefficient of determination test (R2) is to find out what percentage of influence variable X simultaneously has on variable Y.

Table 5 Summary of Linear Regression Test Model R2

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.365 <sup>a</sup>	.867	.102	1.475
a. Predictors: (Constant), XT				
b. Dependent Variable: YT				

Based on the output above, it is known that the R square value is 0.867. This means that variable

4.6 Discussion

Based on the results of the tests carried out by the researchers above, it can be seen that after carrying out partial testing, it shows that online games have an influence on increasing student achievement at the Nunukan State Polytechnic. This is proven through partial hypothesis testing. It is known that the significant value of the effect of X on Y is 0.002 and the t value is 2.076. This is evidenced by the test results of the coefficient of determination (R<sup>2</sup>) in the Summery R Square model table of 0.867 or 86.7%. This means that there is a relationship between online game variables and increasing business administration student learning achievement.

The impact of online games on the learning achievement of Nunukan State Polytechnic students is that students who are excessively addicted to games can have a bad influence on themselves, making them forget about other things such as studying.

The impact of online games on the learning achievements of Nunukan State Polytechnic students is that students who are excessively addicted to games can have a bad influence on themselves which makes them forget about other things such as work, studying and even always ignore other things. tasks given to them. where this can have an impact on the academic achievements obtained by students. Then students who often actively play online games can cause their focus or activity in learning to decrease, and efforts to overcome the impact of online games on student learning achievement at the Nunukan State Polytechnic are that teachers always provide activities that can involve all students. such as sports activities and other activities such as singing class activities, quizzes can make students active and not focused on playing games.

## 5. CLOSING

### *d. Conclusion*

The conclusions above are as follows:

- 1) Online games have a very negative and significant influence on the achievements of business administration students at the Nunukan State Polytechnic.
- 2) The contribution or influence of online games on the achievement of business administration students at the Nunukan State Polytechnic was 89.7%.

This is proven by hypothesis testing where online games have a negative influence on increasing student achievement and the coefficient of determination (R<sup>2</sup>) test where online games have an influence on student achievement, namely 86.7%. This means that there is no correlation between online games and increasing student achievement at the Nunukan State Polytechnic.

### *e. Suggestions*

Based on the results of research regarding the Influence of Online Games on Increasing Student Achievement at the Nunukan State Polytechnic, there is an influence with a percentage of 86.7%, the author suggests that Nunukan State Polytechnic students can enjoy playing online games.

## References

1. Akmarina, Y. N. (2016). The Effect of Playing Online Games on Effectiveness
2. Communicating Within Families in Swarga Bara Village, Sangatta City. *eJournal of Communication Studies*, 4(1), 189-199.
3. Angela. (2013). The Influence of Online Games on Student Learning Motivation 015 Sidomulyo Village, Samarinda Ilir District. *EJournal of Science Communications*, 1(2), 532-544.
4. APJII. (2019). Penetration and Behavioral Profile of Indonesian Internet Users Year 2018. Jakarta: Association of Indonesian Internet Service Providers.
5. Bungin, B. (2015). *Qualitative Research Methodology*. Nunukan: Rajawali Press.
6. Chen, C.Y. & Chang, S.L. (2008). An Exploration Of Tendency To Online Games Addiction Due To User's Liking Of Design Features. *Asian journal of Health and Information Sciences*. 3(4), 38-51.
7. Creswell, W. J. (2013). *Research Design Qualitative, Quantitative and Approaches Mixed*. Yogyakarta: Student Library.
8. Dalyono, M. (2007). *Educational Psychology*. Jakarta : Rineka Cipta.
9. Desideria, B. (2016). Values Drop Due to Online Game Addiction. Downloaded from: <https://www.liputan6.com/health/read/2672538/besar-jeblok-gara-gara-online-game-addiction>
10. Dimiyati & Mudjiono. (2006). *Learning and Learning*. Jakarta: PT Raja Grafindo Persada.
11. Djamarah, S. B. (2011). *Learning Psychology*. Jakarta: Rineka Cipta.
12. Edrizal, E. (2018). The Effect of Students' Addiction to Online Games (Study About Students' Habits of Playing Online Games) at SMP N 3 Teluk
13. Kuantan. PAJAR (Education and Teaching) Journal. 2(6), 1001-1008. Haider, W. Md. (2019, March). Retrieved from news18.com: <https://www.news18.com/news/tech/pubg-mobile-ban-five-incidentsinindiawhich-indicate-how-addictive-the-battle-royale-game-can-be-2076797.html>.
14. Hamdu, G., & Agustina, L. (2011). The Influence of Student Learning Motivation on Science Learning Achievement in Elementary Schools. *Journal of Educational Research*, 12(1), 90-96.
15. Herdiansyah, H. (2015). *Interviews, Observations, and Focus Groups As Qualitative Data Mining Instrument*. Depok: PT. Rajadrafindo Persada.

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