Discretionary Online Games and Social Skills On Children's Aggressive Behavior

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ABSTRACT

This study aims to find out the influence of the intensity of playing online games and social skills toward aggressive behavior in 8 years old children using ex-post facto quantitative pathways. This study was conducted in four elementary schools in the city of Bekasi, with 120 total numbers of respondents (N) in 8 years old children who were students in grade two elementary school. This study applies treatment by level 2x2 design. The hypothesis in this study is analyzed by using two-way variant analysis (ANOVA) and Tukey Test. The results of this study shows that 1) there is a significant difference on aggressive behavior in 8 years old children who were intensive and not intensive playing online games; 2) there is a difference on aggressive behavior in 8 years old children who have high social skills and low social skills; and 3) there is a significant influence based on interaction between intensity of playing online games and social skills toward aggressive behavior in 8 years old children in the city of Bekasi.

Keywords: intensity of playing; online games; social skills; aggressive behavior; screen time

INTRODUCTION

The importance of the formation of behavior for early childhood will be a provision in later life, which will show itself as a person with character. Education has been considered as the center of excellence in preparing excellent human's characters (Rokhman, 2014: 1161). Online games or translated into games on the network (online games) are a manifestation of the development of modern technology.

Paraskeva, Mysirlaki, and Papagianni (2009: 499) [cited from Cesarone, 1998] said that moreover, 77% of children reported sometimes playing games at home, and 24% reported playing every day; significantly, more than 60% of children reported that they played longer than they intended to play. Online games consist of several types. Whalen in Clarke et.al. (2015: 3) suggests three categories: Massive (games with

networked games involving massive number of players); Mobile (games designed for smaller screen and shorter play time); and Real (games requiring players to physically relocate themselves). Online games are designed with a variety of purposes, one of the goals of education. Another approach to increase motivation and the quality of the learning experience is the use of computer and videogames as an educational medium (Moreno-Ger et.al., 2008: 2). Educational online games are widely socialized to children with the aim of developing aspects of child development through fun ways. The result of one study showed that engagement in game has a clear positive effect on learning, however, it did not find a significant effect between immersion in the game and learning (Hamari, 2015: 170). In America, *Entertainment Software Association* (ESA) (2015: 6) data in 4.000 family about time spent for playing online games. The data result showed that on the average, family member spent 6.5 hours per week for playing games with other people by online. Furthermore, they spending time on the average 5 hours per week for playing online games alone. Early childhood is expected to optimize aspects of social development. The optimization aims to make children have social skills. The earlier the child is faced with his social environment, it is expected that the faster and mature social skills he has. Parent-school relationships may be especially beneficial in the early childhood years for promoting early academic and social skills that are predictive of later school success (Powell et. al., 2010: 270). Online games can make a person feel at home in the game rental center or game center to get an inner satisfaction. Bastian, Jetten, and Radke (2011: 486) said that people are increasingly spending large amount of time engaging in online games and relatively little is known about how the experience of cyber-violence affects perceptions of the self as well as co-players. The negative impact of playing online games is already known by most people. Granic et. al. (2014: 66) showed that the vast majority of psychological studies (for example Anderson et. al., 2010;

Ferguson, 2013; Lemola et. al., 2011) on the effects on "gaming" has been focused on its negative impact: the potential harm related to aggression, addiction, and depression. Playing online games without paying attention to the target group of players is feared to make children behave aggressively when playing outside. Based on the explanation that has been stated, researcher intends to find out the influence of the intensity of playing online games and social skills toward aggressive behavior in 8 year old children.

METHOD

This study applies treatment by level design 2x2 expost facto quantitative pathways. There are three variables on this study, which are: 1) independent variable: intensity of playing online games; 2) intervene or moderator variable: social skills; and 3) dependent variable: aggressive behavior. The subject of this study were 120 total numbers of respondents (N) in 8 years old children who were students in grade two elementary school from four elementary schools. The size of sample was determined based on 27% upper limit and 27% lower limit at significance level $\alpha = 0.05$. There are two schools in Kayuringin Jaya Village and another two schools in Pekayon Jaya Village. This study applies simple random sampling techniques which start from city to village in Bekasi, Indonesia.

Data collection in this study was conducted through the dissemination of questionnaires. Questionnaire distribution had gone through the previous trial phase where the validity and reliability had been tested. Final testing was two-way ANOVA and significance test (*Tukey Test*) which is at the significance level $\alpha = 0.05$. Processing up to data analysis was done using Excel

RESULT AND DISCUSSION

Result

Each group showing different mean score ($\bar{x}$), which is displayed on Table 1:

Table 1. The Result of Aggressive Behavior Group Mean Score ($\bar{x}$)

Aggressive Behavior Group Mean Score ($\bar{x}$)		
Intensive Playing *Online Games* (A$_1$)	40.1875 > 24.219	Non-intensive Playing *Online Games* (A$_2$)
High Social Skills (B$_1$)	28 > 36.406	Low Social Skills (B$_2$)
Intensive Playing Online Games and High Social Skills (A$_1$B$_1$)	36.000 > 20.000	Non-intensive Playing Online Games and High Social Skills (A$_2$B$_1$)
Intensive Playing Online Games and Low Social Skills (A$_1$B$_2$)	44.375 > 28.438	Non-intensive Playing Online Games and Low Social Skills (A$_2$B$_2$)

Based on Table 1, $xA_1 > xA_2$; $xB_1 > xB_2$; $\bar{x}A_1B_1 > \bar{x}A_2B_1$; $\bar{x}A_1B_2 > \bar{x}A_2B_2$. As the details regarding details of online games that played by respondents, 80 respondents or about 67% played educational online games. The rest, 40 respondents or about 33% played non-educational online games. Based on the results, 32 respondents included in group which intensive playing online games. In addition, 32 respondents included in group which non-intensive playing online games. For the rest, 56 respondents played online games on the ideal time limits.

This study using *Kolmogorov-Smirnof / Liliefors Test* to find normality data, which is displayed on Table 2:

Table 2. The Result of Normality Test

Criteria: $L_{test} < L_{critical}$ means H$_0$ rejected and H$_1$ accepted.	Research Data Group ($\alpha = 0.05$)							
	A1	A2	B1	B2	A1B1	A1B2	A2B1	A2B2
L_{test}	0.073	0.087	0.139	0.143	0.108	0.094	0.108	0.094
$L_{critical}$	$L_{critical}$ (n32) = 0.1542				$L_{critical}$ (n16) = 0.2128			
Data Information	Normal							

Based on Table 2, overall $L_{test} > L_{critical}$, which means overall aggressive behavior data in 8 years old children was normal.

This study using *Bartlett Test* to find homogeneity variances data, which is displayed on Table 3:

Table 3. The Result of Homogeneity Test

Criteria: $\chi^2_{test} < \chi^2_{critical}$ means H$_0$ rejected and H$_1$ accepted.	Research Data Group ($\alpha = 0.05$)							
	A1	A2	B1	B2	A1B1	A1B2	A2B1	A2B2
χ^2_{test}	-0.091		-0.078			-0.078		
$\chi^2_{critical}$	$\chi^2_{critical}$ (n32) = 3.84				$\chi^2_{critical}$ (n16) = 7.81			
Data Information	Homogeneous							

Based on Table 3, overall $\chi^2_{test} > \chi^2_{critical}$, which means homogenous data variance.

The result of two-way ANOVA is displayed on Table 4:

Table 4. The Result of Two-way Analysis of Variance (ANOVA)

Source of Variance	SS	df	MS	F_{test}	$F_{critical}$ ANOVA	
					$\alpha = 0.05$	$\alpha = 0.01$
Main Effect A	521.067	1	521.067	61.86	4.00	7.08
Main Effect B	337.51	1	337.51	40.07	4.00	7.08
Interaction Effect (AXB)	18.817	1	322.576	38.29	4.00	7.08
Within	505.409	60	48.423			
Total	1.382,803	63				

Table 4 showed main effect in F_{test} A and B. The criteria of this test is if $F_{test} > F_{critical}$ means H_0 rejected and H_1 accepted. Based on Table 4, F_{test} main effect A = 61.86 > $F_{critical}$ = 4.00, which means there were a difference mean score in aggressive behavior in 8 year old children who were intensive and non-intensive playing online games.

Based on Table 4, F_{test} main effect B = 40.07 > $F_{critical}$ = 4.00, which means there were a difference mean score in aggressive behavior in 8 year old children who have high social skills and low social skills.

Table 4 showed that there were an interaction effect on F_{test} AxB. Based on Table 4, F_{test} AxB = 38.28 > $F_{critical}$ = 4.00, which means there were significant interaction effect between A (Intensity of Playing Online Games) and B (Social Skills); which means there are influence of intensity of playing online games toward aggressive behavior depends on social skills owned by 8 year old children.

The result of *Tukey Test* is displayed on Table 5:

Table 5. The Result of *Tukey* Test

Groups	n	Q_{test}	$Q_{critical}$ ($\alpha = 0.05 : n16$)
A_1B_1 and A_2B_1	16	9.19*	*3.00
A_1B_2 and A_2B_2	16	9.15*	*3.00
Data Information: *significant			

Table 5 showed that there were significant difference mean score on intergroup data research. The criteria of this test is if $Q_{test} > Q_{critical}$, means H_0 rejected and H_1 accepted. Vice versa, if $Q_{test} \leq Q_{critical}$ means H_0 accepted and H_1 rejected. Based on Table 5, Q_{test} groups A_1B_1 and A_2B_1 = 9.19, and $Q_{critical}$ = 3.00; or Q_{test} A_1B_1 and A_2B_1 = 9.19 > $Q_{critical}$ = 3.00, which means there were significant difference on aggressive behavior mean score in intensive playing online game with high social skills group and aggressive

behavior mean score in non-intensive playing online game with high social skills group. Based on Table 5, Q_{test} groups A_1B_2 and A_2B_2 = 9.15, and $Q_{critical}$ = 3.00; or Q_{test} A_1B_2 and A_2B_2 = 9.15 > $Q_{critical}$ = 3.00, which means there were significant difference on aggressive behavior mean score in intensive playing online game with low social skills group and aggressive behavior mean score in non-intensive playing online game with low social skills group.

Discussion

Based on the results of the tests described earlier, the results of this study are in

line with several research results, including; research conducted by Constance A.

Steinkuehler (2002) about "learning in Massively Multiplayer Online Games". The study describes that online gaming is a popular entertainment medium. The study explained that Lineage plays a role in cognitive related to language and virtual interaction. Analysis of the relevance of the research with this research is that some types, content, and perspectives of an online game can contribute positively to early childhood, for example in cognitive and social aspects. The next online game research was carried out by Dongseong Choi and Jinwoo Kim (2004) who proposed a theoretical model using the concept of customer loyalty, regularity, personal interaction and social interaction to find out why people continuously play online games. Analysis of the relevance of the research with this research is that the positive experience gained when playing online games can lead to addiction. The next online game research was carried out by Leigh Achterbosch, Robyn Pierce, and Gregory Simmons (2008) who put forward online game types of role playing since it was formed until it developed. The study also outlines how attractive this type of online game is. Analysis of the relevance of the research with this research is that online games genre MMORPG are the most popular type for players, including early childhood. The next online game research was conducted by Liziaoji Wang and Siyu Zhu (2011) who explained the influence of online games on players from the social aspect. The research was carried out to find out how dependent online games would be. Analysis of the relevance of the research with this study is that the impact of addiction on playing online games can affect physical, cognitive, and social health. Research on online games was then carried out by Marcus Martens, et. al. (2015) who expressed the interaction of players in a virtual world based on the desire of competition. Communication that occurs between players allegedly contains elements of insult and attack. Analysis of the relevance of the research with this research is that the desire for competition in players related to certain online games can trigger aggression.

Research related to social skills among others is carried out by Janelle J. Montroy et. al. (2014) who explained the results of his research, said that social skills and behavioral problems are part of self-regulation mechanisms that can influence literacy growth. Analysis of the relevance of the research with this research is that social skills which seen in children's behavior are manifestations of self-regulation and influence the growth of their owned literacy. Research related to educational games and social skills is then carried out by Sonja Petrovska, Despina Sivevska, and Oliver Cackov (2013) who explained the application of the game can contribute to aspects of child development. The results of the study explain that the game is a powerful tool for children to gain knowledge, enrich experiences, and develop skills and habits. Analysis of the relevance of the research with this research is the type and content of educational online games can contribute to various aspects of child development. Research related to social skills is then carried out by Narges Babakhani (2011) who investigates the effects of social skills training to reduce aggression (physical and verbal) and increase self-esteem. As a result, it was stated that the skills training had no major effect on physical aggression, but reduced verbal aggression. Analysis of the relevance of the research with this research is that social skills need to be managed from an early age to reduce various forms of aggression. Research related to social skills is then carried out by E.S. Van Vugt et. al. (2012), who evaluating group-based social skills training programs for children with behavioral problems. The study involved children who took part in continuous training with better social skills. Analysis of the relevance of the research with this research is that social skills need to be trained from an early age and carried out continuously to get the desired positive results. Research related to social skills is then carried out by Brian L. Mishara and Mette Ystgaard (2006) who explained about the use of the Zippy Friend's program to improve the handling of skills in children. Analysis of the relevance of the research with this research is that programs to improve social skills can be created by various parties, with the aim of being able to shape social skills and deal with behavioral problems.

Research on aggressive behavior among others is carried out by Jose J. Valadez and Christopher J. Ferguson (2011) who explained about whether exposure to the screen long enough to play violent video games has an impact on early childhood. As a result, screen exposure by playing violent games does not contribute to aggressive behavior. Analysis of the relevance of the study with this study is that screen exposure by playing violent games may not directly affect early childhood, but should

reduce the level of intensity of play. Research on aggressive behavior is then carried out by Ruqaya Imtiaz, Ghulam Yasin, and Asif Yaseen (2010) who explained about sociological studies of factors that influence aggressive behavior among the younger generation. The results of this study indicate that aggressive behavior is influenced by external factors or environmental factors. Analysis of the relevance of the research with this research is basically aggressive behavior is not directly and dominantly in a person, especially early childhood. External factors can strengthen the aggressive behavior of an aggressor. Research on aggressive behavior is then carried out by Youssef Hassan et. al. (2012) who explained the impact of the set from exposure to violent video games on hostility and aggressive behavior. As a result, participants who were given exposure to violent games showed an increase in hostility and aggressive behavior. Participants who were given non-aggressive games did not show an increase in both hostility and aggressive behavior. Analysis of the relevance of the research with this study is

CONCLUSIONS AND SUGGESTIONS

Based on the finding and discussion, it can be concluded that 1) there is a significant difference on aggressive behavior in 8 years old children who were intensive and non-intensive playing online games; 2) there is a difference on aggressive behavior in 8 years old children who have high social skills and low social skills; and 3) there is a significant influence based on interaction between intensity of playing online games and social skills toward aggressive behavior in 8 years old children in the city of Bekasi.

Suggestions from this study may be a reference to other studies. Parents must instill an understanding the use of technology in terms of positive and negative games, many things that can shape and develop skills, and become role models in good behavior. The school can participate in instilling knowledge about the use of technology related to ideal playing time, as well as fostering childrens social skills to become better individuals. The community is expected to be integrated with others and the school in reflecting and preserving ethics and ethical behavior to suppress aggressive behavior.

the exposure of online games with non-educational content in the form of violence can increase hostility and aggressive behavior. Research on aggressive behavior is then carried out by Joel Billieux et. al. (2014) about involvement in problematic online games. The results show that playing online games as a time filler needs to be considered, to reduce the tendency that leads to dependence. Analysis of the relevance of the research with this research is the need for limitations, controls, and rules in playing online games to prevent addiction. Research on aggressive behavior is then carried out by Purwati and Muhammad Japar (2015) who explained about the handling of behavior, cognitive, and gender towards aggressive behavior in early childhood. The results showed that there were differences in sex, cognitive and behavioral, as well as influences caused by the intervention between interaction and gender towards aggressive behavior in early childhood. Analysis of the relevance of the study with this study is that the handling of aggressive behavior in children needs to be reviewed and adjusted.

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