The Effect of Massively Multiplayer Online Game on Player Behaviour

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Abstract. Game developers compete to take advantage of digital technology development to make games that allow players to play massively and at the same time. Games, such as Mobile Legend, Fortnite, or Player Unknown Battle Ground (PUBG), are games that widely played by players around the world, including the current generation of young Indonesians. Consciously or not, these games have an influence on players both positively and negatively. The purpose of this study is to determine the effects of these games on player behaviour through 5 dimensions, including the number, content, context, structure, and mechanism of the game, especially in MMOG game. The research approach used mixed methods, with data collection techniques through surveys and interviews. The survey data was carried out using the cluster method with purposive sampling, the samples were university students in Telkom university specializing in multimedia communication design study programs. Data analysis used SEM with PLS approach. Structure modelling was a multivariate analysis technique. The results of this study indicated that the influence of MMOG games significantly and positively influenced the behaviour of gamers by 0.42.

1. Introduction
The digital Era has brought about major changes in educational media for students. Education is one of the fundamentals of mastering science and technology for students. Education/teaching orientation is aimed at mastering the field of discipline that is the foundation of Science and Technology [1]. Online Games in the digital era have become one of the alternatives in education. Success of cognitive learning can be done through digital Games [2]. Therefore, making the development of digital technology makes the game industry very rapidly evolving.

The purpose of this study is to determine the effects of these games on player behavior through 5 dimensions, including the number, content, context, structure, and mechanism of the game, especially in MMOG game. Mobile Legends and Fortnite or Player Unknown Battle Ground (PUBG) are a Massively Multiplayer Online Game (MMOG) games that allow players to play games in a very large amount of time. These games are currently widely played by players around the world, including from Indonesia. Online game is a computer game that can be played by many players through the Internet [3]. Consciously or not, these games have a considerable influence on players, such influences can have a positive impact as it improves the psychomotor skills by playing action genre games, social skills with games connected with Internet connection such as Farmville, cognitive ability through genre games, and so on. Online gaming is useful when used for entertainment [4]. Man is a homo ludens that man likes to be entertainment [5]. The research is more emphasized on the behaviour of the
player. The player in this game is a multimedia student with game specialization. It means, this student has knowledge about how to design games so that it can be evaluated on games that will be made by them. The influence of games on cognitive is already done, but the influence of online games against the behavior of players games with 5 dimensions has not been extensively researched especially for players of game designers.

2. Methodology
This research used mixed research or mixed methods. Data collection was conducted through surveys and open-ended interviews. The technique used was purposive sampling the student of multimedia on visual communication design with games specialization at private universities in Bandung because it is more aware of the game design and can be used for evaluation when designing games. The student population of 3 classes is 90 respondents. The samples obtained in this research were 59 respondents consisting of Class A 20, Class B 20 and Class C 19. The data analysis techniques in this study used structural equation model (SEM) analysis with a partial least square (PLS) approach. The reliability test of the MMOG X-Game variable amounts to 1.00 and the variable Y player behaviour of 0.891 which has a composite reliability value of ≥ 0.7. So that all the latent variables used in this study are determined to be reliable.

3. Results and Discussion
MMOG games are one of the types of games that are being loved by the millennial generation. Based on the results of the study, it shows that from 59 respondents who had filled at 21-25 years old as many as 33. In addition, the most respondents are male gender as many as 45. Based on the respondent's profile table, the gender ratio of the respondents actual questioner between males and females was 45 people (76.3%) and 14 people (23.7%). While based on the age, the majority of actual respondents were 21-25 years as many as 33 people (55.9%). The Data is in accordance with the target respondents in this research is the student of multimedia with games specialization, Class A game is Level 1, Class B is Level 2 and class C is level 3. The age of 21-25 is a youth post millenial. Indonesia increased its behavior and their Internet usage, one of which is social media [6].

An endogenous R-square construction of Gamer behavior 17.9% in variables demonstrates that the MMOG Game's exogenous variable weakly describes the 17.9% variance of a MOOG Game variable against Gamer behaviour. Based on the significance of the coefficient path testing indicates that the value of the MMOG Game construct against the construction of the Gamer behavior pattern above 0.10 is 0.424 proved significant. The influence given by the MMOG Game construct against the Gamer behaviour pattern is proved significant because of the P-value above 0.05. This is relevant to the lifestyle in the MMOG, it is already influential in the class when one performs the behavior that he re-resets daily and makes a habit then it can be a lifestyle for the individual [7].

The results of testing in accordance with the research conducted proves the MMOG gaming construct has a positive influence on the Gamer behaviour pattern. The results of the test model of the SEM analysis can be seen from the image below:
MMOG games especially the content affects gamers' behavior on a attitudes sub variable of 0.783 and a challenge of 0.771. The Game that develops skills and knowledge presents many educational content in an immersive, non-entertainment environment as a serious game by developing a challenging feedback and adaptive orientation feature [8]. This means, attitude game is influenced how the content of games played by gamers. Likewise the challenge of player games is determined by the game content played. Gamers in play can interact and behave according to the content in the game. Gamers can behave individually or in groups with the goal of increasing levels. However, gamers can also behave that leads to a challenge to quickly solve problems in games or compete with their opponents (either among gamers or machines). Unlike the results of the research Novialdy 2019 which suggests that for high school online gamers still do not understand the dangers of gaming addiction so that in playing content is not noticed [9]. Rogue behavior is sourced from the learning outcomes of an environment that is viewed as a response to stimulation or external stimuli or internal [10]. Unlike the results of the research that the selected games content can be positive and negative effect related to attitude and gamers' challenge. This means, the positive game content will determine the attitude and the direction of Gamers challenge. This is different, possibly the respondents in this study are the game designer students, so they already have a more understanding of the character as well as how the games are running.

Game content has an impact on gamers' recognition of 0.76; Against satisfaction of 0.8 and the self-assessment of 0.8. During this time the game is used only for entertainment [11]. However, the design objectives of the games have changed. Games are designed to give gamers a positive impact [12]. The game content of MMOG turns out to provide satisfaction and evaluate the very high gamers themselves. This is because gamers can win the level of making increased sense of satisfaction as part of the entertainment. In addition, self-assessment of gamers is needed because to evaluate the strategy that will be done when the defeat or win with an improper time. Gamers need to think of more strategies for winning [13]. Therefore, when able to perform self-assessment and achieved satisfaction so the gamers' recognition is obtained, this is evident in the content of MMOG games that are carried out collectively/group. Many people to play games and can play simultaneously in different places [14].

![Picture 1. The result of Model Outer Testing](image-url)
4. Conclusion
The MMOG Game has a significant and positive effect of 0.42. MMOG games especially the content affects gamers' behavior in sub-variables of the attitudes of 0.783 and a challenge of 0.771, gamers' recognition of 0.76; satisfaction of 0.8 and self-assessment of 0.8. MMOG games have an influence on the behavior of gamers both positively and negatively with the respondents of gamers. This research implicates the design results of games that continue to promote educational values but entertain

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