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A Study on the Relationship between Video Games and Student's Academic Performance in IIUM

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Abstract: **There are many factors that correlated with students' academic performance. Some people believe that video game is one of the factors that affect students' academic performance negatively. Thus, the purpose of this study was to investigate the relationship between video games and student academic performance among male and female students of IIUM. A questionnaire was used to collect data about students' gaming frequency and students' academic performance. 30 students were selected randomly from each kulliyyah as the sample of the study. The result of the research indicated that there is no relationship between video games and students' academic performance of IIUM University. From this findings, it can be concluded that being non-gamer does not guarantee a student to have high academic performance. In contrast, being frequent gamer also does not guarantee student to perform bad in academic. There are many factors that correlated with academic performance other than video games.**

Keywords: **academic performance, video games, IIUM University, student perception.**

I. INTRODUCTION

In this sophisticated era, video game industry has become very profitable industry because of the increasing demand on the gaming industry especially teenagers who are the main contributor of this increasing demand. Video game defined as the computational model software that required the players to respond to events occurring in a simulated world [1]. Nowadays, Video game has been criticized and condemned for the past couple of years because of the negative effect that it causes especially violent game. Ip, Jacob, Watkins on his survey found that over 88% of the sample students in Swansea University were gamers in some capacity, and over 71% of them are frequent gamers [2].

However there are opinion that stated the video games can give certain benefit to the player. Among these benefits are, playing video games for hour can help in improving visual-spatial skill and math [3], it can improve prosocial skill if playing violent game [4]. Moreover, playing video games also might help the user in mechanical engineering [1] and attention skills [5].

On the other hand, there are also the negative effects of the video game. There are increasing debates of whether video game will give more benefit than harm or vice versa. Example of the negative effect from the research that conducted previously found that student who plays video game has lower GPA than the one that not plays and he has more aggressive behaviour and dislike by teachers [6]. Moreover, Foen, Zakaria, May, and Confessore also found that video games negatively correlated with students' academic achievement, but not significantly [7].

Game developers nowadays create and develop an action and violent games as their main genre because these genre can attract more customer and the thrill compared to other genre. This action and violent game has lead children into doing violent as can be proved by incident that happen in 2013 where an 8 years old Louisiana boy intentionally shot and killed

his elderly caregiver after playing a violent video game [8]. Even though the number of the case is not high but the effect of the violent video game still can be seen.

Today, video games also become an issue for the university student. Video games have been perceptually known as being addictive and destructive from parents and teachers point of view. Some of them consider video games as the reason students in school and university are getting poorer in academic results and lack or moral behaviour. Some students spend more of their time for playing video game rather than studying. In fact, the students are asked to have a good academic performance and achievement in their study. Academic achievement is often used to determine or predict an individual's potential and capabilities. It generally indicates the learning outcomes of students [8]. Chowdhury and Pati (as cited in Awan, Noureen, and Naz, 2011) further elaborated Academic Achievement defined as "particular learning in a particular setting which is defined by examination marks, teacher's given grades and percentiles in academic subjects" [10].

There are several theories have been reviewed on the relationship between playing video games and student's academic performance. Selective player style refers to spending time on favourite game. And if we compare to traditional video games, active educational video games produce higher positive effect on students in terms of physical activity and motivation [11]. And in another theory, "Students who were medium in selective player style (spent 11–50 h) had significantly higher GPAs than students low on selective player style (spent 0–10 h)" [12].

Despite the numerous studies conducted to investigate the relationship between video games and academic performance of students, many of them were actually carried out on western countries. Besides, only few of them carried in Malaysia. With this, the researcher hopes that the findings will give the benefit to the local reader. In the university, computer is not only used for working and doing assignment but it is also being use as gaming platform to play video game during free time. Therefore, this analytical paper purposes to study the relationship between video games and academic performance among students in IIUM University.

Objective of the research:

1. Is there any relationship between video games and academic performance of male and female students of IIUM?
2. Is there any relationship between times spent playing video games and academic performance of IIUM students?

II. METHOD

This study was conducted using descriptive survey research design. A stratified sample of 30 students from IIUM University participated in the study. The sample was stratified to ensure a balance of males and females in equal number. For this research, a survey was conducted to collect relevant information from a sample of students through their responses to questions given in a questionnaire. The questionnaire that asked to the student consisted of three different sections: demographic background, video games behaviour, and academic performance background. The questions that asked in the survey used to answer the research questions.

III. FINDINGS

The aim of this research was to study the relationship between video game and student academic performance n International Islamic University Malaysia (IIUM). Thus, the researcher tried to find out gaming frequency level of the respondent and relate them with their CGPA level. The researcher grouped the weekly gaming frequency into 5 different categories: never for "non-gamers", 1 – 3 hours for "infrequent gamers", 4 – 6 hours for "regular gamers", 7 – 10 hours for "frequent gamers", and more than 10 hours for "gamers addict". For academic performance, the researcher also categorizes student into 5 different categories: less than 2 for "very low" academic performance, 2.00 – 2.49 for "low" academic performance, 2.50 – 2.99 for "average" academic performance, 3.00 – 3.49 for "high" academic performance", and 3.50 – 4.00 for "excellence" academic performance.

The first research question was to find out whether there is a relationship between video games and academic performance for male and female students. Thus, 30 questionnaires were distributed to 15 male and 15 female respondents. Table 1 below depicts the data for video game frequency and academic performance of IIUM Male students. From this table, it shows that most of male respondents are infrequent gamer who plays the video game 1 – 3 hours with 7 students. And another 4 male respondents are not a gamer. And only one student who spent more than 10 hours for playing game in every week. Furthermore, for academic performance, it has been discovered that majority of male

respondent has GPA "low" and "average" academic performance with 6 respondents for both. Another 2 respondents has high academic performance, and only 1 has "very low" level of academic performance. Interestingly, none of respondent has "excellence" academic performance (refer to Table 1).

Table 1: Level of Academic Performance and time spent on video games of IIUM male students

Respondent	Video Game Frequency	Academic Performance
1	1 – 3 hours	2.50 – 2.99
2	1 – 3 hours	2.00 – 2.49
3	7 – 9 hours	2.50 – 2.99
4	1 – 3 hours	2.00 – 2.49
5	1 – 3 hours	Less than 2
6	Never	2.50 – 2.99
7	7 – 9 hours	2.00 – 2.49
8	1 – 3 hours	2.00 – 2.49
9	Never	2.00 – 2.49
10	More than 10 hours	2.50 – 2.99
11	4 – 6 hours	3.00 – 3.49
12	1 – 3 hours	3.00 – 3.49
13	1 – 3 hours	2.00 – 2.49
14	Never	2.50 – 2.99
15	Never	2.50 – 2.99

Secondly, from the responses given by 15 female respondents, it also shows vary result of Time spent in playing video games and students' academic performance. Table 2 shows that most of female respondents are infrequent gamers with 7 respondents. 4 respondents are regular games, 3 respondents are non-gamers, and only 1 frequent gamers. Interestingly, none of female respondents is gamers addict. Moreover, the academic performance of female respondents also shows vary result. Most of female students has "high" academic performance with 7 respondents. 4 respondents have both "excellence" and "average" academic performance. Surprisingly, none of female respondents has "very low" academic performance (refer to table II).

Table II: Level of Academic Performance and time spent on video games of IIUM female students

Respondent	Video Game Frequency	Academic Performance
1	7 – 9 hours	2.50 – 2.99
2	4 – 6 hours	3.50 – 4.00
3	4 – 6 hours	2.50 – 2.99
4	1 – 3 hours	3.50 – 4.00
5	1 – 3 hours	3.50 – 4.00
6	1 – 3 hours	3.50 – 4.00
7	1 – 3 hours	2.50 – 2.99
8	1 – 3 hours	3.00 – 3.49
9	1 – 3 hours	3.00 – 3.49
10	Never	2.50 – 2.99
11	4 – 6 hours	3.00 – 3.49
12	Never	3.00 – 3.49
13	1 – 3 hours	3.00 – 3.49
14	Never	3.00 – 3.49
15	4 – 6 hours	3.00 – 3.49

The second research question was to find out whether there is a relationship between time spent on video games and academic performance for IIUM students. Therefore, the researchers also discover how the students spent their time on video game compared to previous semester. From the 30 responses that collected as shown in the graph 1, majority of female students spent their time on video games more frequent compared to previous semester with 10 students. While majority of male students spent their time on video games same as compared with previous semester with 8 students. While there were same number for both male and female students who spent their time on video games less frequent compare to previous semester, which is 4 students for both (refer to figure 1).

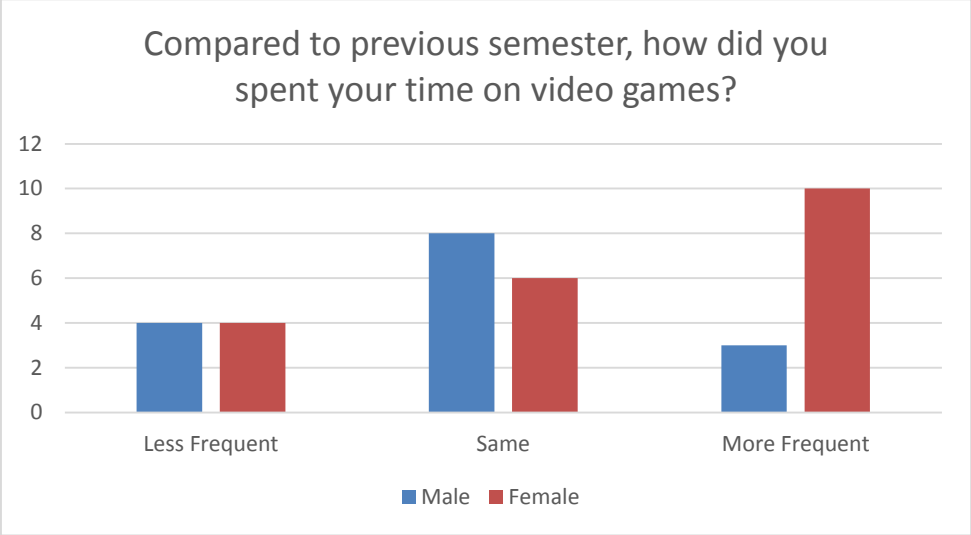

Fig. 1: Compared to previous semester, how did you spend your time on video games?

In addition, the researchers were also discovered students' academic performance compared to previous semester. From the result as shown in the graph 2, majority of female students have higher GPA compared to previous semester with 10 students. While majority of male students have the same GPA as compared with previous semester with 7 students. While there were same number for both male and female students who got the lower GPA compares to previous semester, which is 3 students for both (refer to figure 2).

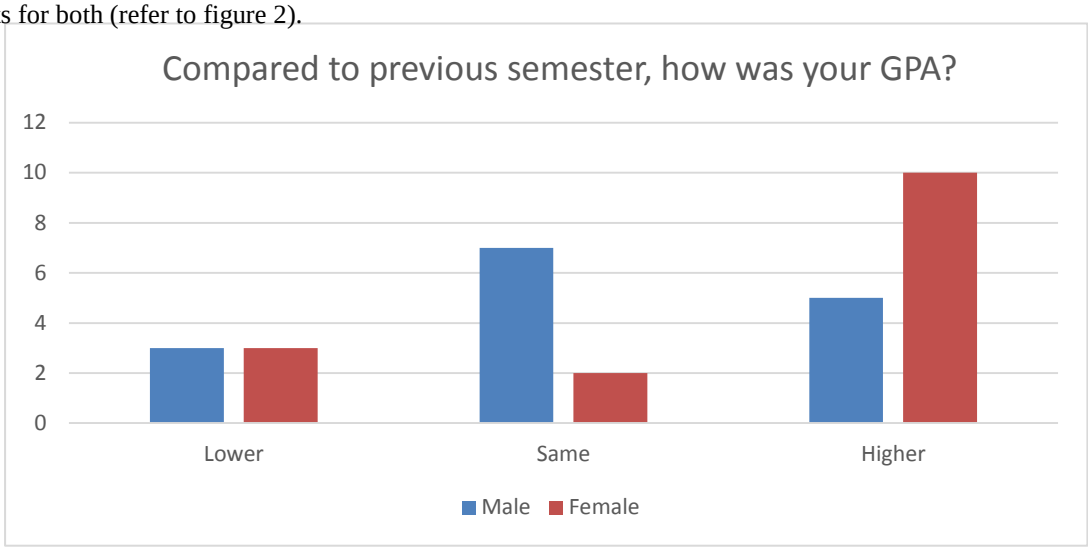

Fig. 2: Compared to previous semester, how was your GPA?

In the study the relationship between video games and student academic performance, student's perception considered important because it describes how the student's perception about the video games. The students were therefore asked to state whether they agree or disagree that Video Games affect their GPA negatively. And from the graph 3, it can be seen that there were significant number of the students stated "neutral" as their answer, with 53% or 16 students. While 6 students were disagree with the statement (20%) and only 17% of them that agree that video games is likely affected their GPA negatively (5 students). Moreover, there were 3 students that believed the video game affected their GPA positively

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(10%). Surprisingly, there were no students who believe that video games definitely affected their academic performance negatively (refer to figure 3).

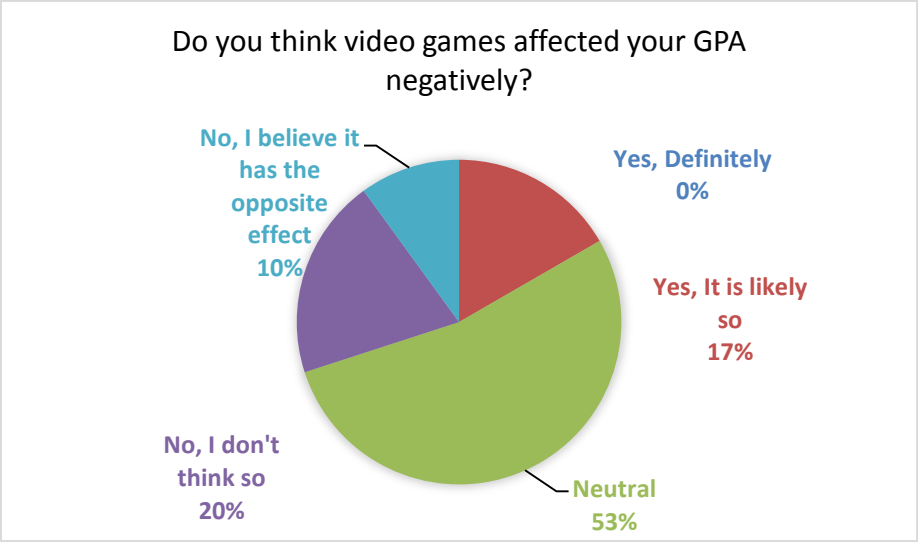

Fig. 3: Do you think video games affected your GPA negatively?

IV. DISCUSSION

The purpose of this study was to examine the relationship between video games and students' academic performance in IIUM University. In the study that conducted by Foen, Zakaria, Lai, and Confessore found that the video games were not negatively correlate with time spent on playing video games [7]. In the same vein, Ventura, Shute, and Kim reported that there were no relationship between video games and academic performance. Similar results were found on this study: there was no significant relationship between gaming frequency with student academic performance [12].

In the other hand, Ip, Jacobs, and Watkins found that there were significant links between time spent on video game and academic performance [2]. Hence, time spent on video games hypothesized to be negatively affected students' academic performance. However, this hypothesis was not supported by the result of this study, as a significant correlation was not found.

The findings of this research indicate that time spent on video game has no relation with academic performance. There was inconsistency found among the different category of gamers with their academic performance for both male and female student of IIUM University. Students who never play the game did not guarantee them for the higher academic performance. In contrast, there were some regular gamers who can score better than non-gamers student. A possible explanation for this might be because there were some other factors that correlated with students' academic performance such as time spent on study, curricular activity, level of intelligence, etc.

Likewise, based on the analysis that conducted to find out whether there is a relationship between video games and academic performance for male and female students, it can be seen that both males and females are vary in spending their time playing video games. And both male and female student has varied result of GPA. The same inconsistent pattern applies for both males and females. From the graph 1 and graph 2, it showed that there were no significant relationship between gaming frequency and academic performance between male and female students of IIUM University.

In addition, from the student's point of view, it discovered that there were no students who believed that video games affected their academic performance negatively, most of student stated neutral as their opinion. However, there was some student who believed that video games affected their academic performance positively.

However, the inconsistent pattern or relationship between video games and academic performance for male and female students may be because of the small number of the respondents that being used that may cause only few students represent each level. To illustrate, only two of male students who has high academic performance. Therefore, it is not wise to mention that student with high GPA are regular games by solely relying on two respondents.

V. CONCLUSION

The goal of this study was to investigate relationship between video game and academic performance. The responses were collected by distributing 30 questionnaires to 30 respondents. As mentioned earlier, the purpose of this study was to investigate the relationship between academic performance and time spent on paling video games among Male and Female student of IIUM University.

The following conclusions can be drawn from the study. To begin with, this study has shown that there is no significant relationship between gaming frequency and academic performance among IIUM students because of the gaming frequency shows inconsistent effect towards academic performance. In addition, both male and female of IIUM students also has different result of academic performance and gaming frequency and none of them shows consistent relationship. To sum up, the study has shown that there is no relationship between gaming frequency and students' academic performance.

The result of this study implies that being non-gamers does not guarantee students to perform well at universities. Hence, there are many factors that correlated with students' academic performance such as studying frequency, level of intelligence, and etc.

The research findings, however cannot be generalized to the whole population of IIUM University, what more other universities. This is because of the small number of respondents that collected in this research. Moreover, this study also lacks of balance number from each kuliyyah in IIUM by taking half of respondent from kulliyyah of ICT, and very few respondent from other kulliyyah.

Since this study had only conducted with the small number respondents of IIUM University. It is recommended that further study need to be done with larger sample size that can represent every kulliyyah of IIUM University. Furthermore, further research could also be carried out on students from other universities to see whether there are any similarities in findings.

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