



“I failed because I was Playing Videogames”: An Examination of Undergraduate Males Videogame Addiction and Academic Performance

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Abstract: Many factors affect the academic performance of undergraduate students. Playing videogames among male student's vis-à-vis their academic performance was assessed in this study. This study employed two hundred and fifty male undergraduate students (250) aged between 15 and 23 ($M = 17.44$, $SD = 1.37$), selected from a Nigerian private University. Academic performance was assessed using Cumulative Grade Point Average (CGPA) collapsed into three groups (*viz*: 1 = 1.25 to 3.49, 2 = 3.50 to 4.49 and 3 = 4.50 to 5.00). Pathological playing of videogames was assessed using the Problem Video Game Playing questionnaire (PVP). A statistical significant difference at the $p < .05$ level was observed $F(2, 250) = 5.15$, $p = .01$. The small effect size of 0.04 was obtained using the partial eta squared. A Post-hoc comparison using Tukey HSD test indicated that group 1 differed significantly in their mean scores from group 2 and 3. Further analysis with Pearson Product Moment Correlation Coefficient showed $r = -.262$, $n = 250$, $p < .000$ and $r = .261$, $n = 250$, $p < .000$ for CGPA and self-reported grades respectively. It was concluded that videogame addiction has a significant effect on the academic performance of male undergraduate students.

Introduction

Pathological video gaming has been found to be prevalent among adolescents with some of its attendant negative effects ranging from: “lower social competence” to “lower school performance” (Gentile, Choo, Liau, Sim, Li, Fung & Khoo, 2011, e319). Some of the reasons why young people are motivated to play games include for: “(i) entertainment (ii) escapism, and/or (iii) virtual friendship” (Beranuy, Carbonell & Griffiths, 2013, p. 149). When these basic motivations for playing video games become relatively met and the young person still indulges in playing video games, then, addiction is probably the next stage that they enter into with its consequent “psychological dependence and serious life conflicts” (Beranuy, *et al.*, 2013, p. 149).

The challenge with videogame addiction is that, “videogame playing ... shares many similarities with gambling” (Griffiths & Wood, 2000, p.199). In fact, Fisher (1994) had earlier reported that video game playing may lead to a behavioural pattern akin to gambling addiction. Salguero and Moran (2002) believe that problems arising with excessive video game use tend to look like dependence syndromes. Interestingly, the similarity between video game addiction and other addictive behaviour has been reported to be stronger than had been previously thought (Gentile *et al.*, 2011) with addicts manifesting similar results of effects of video game addiction as in other substance addictions (Beranuy *et al.*, 2013). This finding underscores the need to investigate the presence of

videogame addiction in Nigeria in order to examine its prevalence.

Generally, males tend to be more drawn to video game playing than females (Faulkner, Irving, Adlaf & Turner, 2014). Male gender has been found to be principally positively associated with video game addiction (Wittek *et al.*, 2015). Lucas and Sherry (2004) sampled 544 college students comprising of 57.5 % females (313) and 42.5% males (231) and their results showed that more males (88.3%) played games every week than females (54.6%) despite the fact that 15% more females were sampled. Authors tend to also observe a preponderance of males as players of video game than females in their samples even after eliminating non players. For instance, Puri and Pugliese (2012) after eliminating non players from their samples, examined the 175 responses they sampled and found that, “133 (76%) were males and 42 (24%) were females” (P. 349).

The preponderance of males in videogame addiction was highlighted further in a study by Lucas and Sherry (2004) who reported that women have been found to play videogames less than males by averaging 4.2 hours weekly play while males averaged 11 hours weekly play. The male majority in video game addiction has also been reported by Ko, Yen, Chen, Chen and Yen (2005) in their study of Taiwanese adolescents. Even when researchers selected more females than males in a multiple sample study, with females being more than males, the result showed a gender difference in favour of males in videogame playing. This was reflected by Greenberg, Sherry, Lachlan, Lucas and Holmstrom (2010) who found that

males (n=551) generally played games about twice more than females (n = 685) at 5th grade, 8th grade, 11th grade and college levels with each gender playing for 18.56 hours and 8.16 hours weekly for males and females respectively.

In contrast to the plethora of studies supporting a negative effect of video game on the academic performance of adolescents, Drummond and Sauer (2014, p.3) found “no evidence that academic performance in science, mathematics or reading ability, declined as a function of increased gameplay frequency, for single player or multiplayer videogame use.” Their study is distinctively interesting because they used a large sample size of 192, 975 students from 22 countries in their study. However, for future research, Drummond and Sauer (2014) suggested that “focusing upon any one school is unlikely to provide a good understanding of video-gaming effects on academic achievement” (p.4). This suggestion seems vertically thought out instead of laterally focused because it tends to put an end to the debate on this interesting topic irrespective of the clime. This is because Nigeria and even the whole continent of Africa is not a part of the countries within the Organization for Economic Cooperation and Development (OECD) countries sampled for Drummond and Sauer’s (2014) study. This further highlights the need for the present study in Nigeria.

Some researchers have used only males to conduct empirical studies on video game playing. An example of this is the study on “The role of violent

video game content in adolescent development: Boys’ perspectives” (Olson, Kutner, & Warner, 2008). As a result of more males playing video games than females, Schmitt and Livingston (2015) focused their study on 477 male college students. One of the principal reasons a preponderance of males are used in videogame addiction studies was highlighted by Mentzoni *et al.*, (2011) when they found that being a young male is the strongest predictor of problem video game use. Mentzoni *et al.*, (2011) reported that in comparison with females, males tend to manifest more problematic videogame use than females. They reported the highest age of problem use to be 16 – 21 years. The disinterest of Nigerian females in videogame playing has been noted in the procedure section of the present study. This seems not to be particularly peculiar to Nigeria alone. For instance, Mentzone *et al.*, (2011) reported that 65% of the males they sampled for their study reported regular video games use while 56.6% of females reported not using video games.

In order to examine the effect of videogame addiction on academic performance of male undergraduates, the authors hypothesized that there will be an effect of videogame addiction on the academic performance of male university undergraduates. The authors also hypothesized that there will be a relationship between male undergraduates playing of videogame and their self-reported and actual (school calculated) academic performance.

Methods

A correlational research design was applied to examine the relationship between the two variables from a cross section of male university undergraduates using a self-report measure. Two hundred and fifty (250) male students aged between 15 and 23 ($M = 17.44$, $SD = 1.37$), were selected from two colleges of Covenant University (College of Development Studies and College of Science and Technology) for this study. The initial research protocol factored in females as part of the samples but during the course of the research all the female students approached as respondents declined to participate pointing out that they do not play video games hence, will not respond to the questionnaire items. When they were asked by the researchers what they do which take their time, they responded: "watching Korean and South American Soap Operas." Since this was not part of the research focus, they were excluded. However, this might be a good research area in the future. The participants for this study were approached in the College buildings of CDS and CST and the questionnaires were administered to them in their

classes with the females opting out of participation. The questionnaires took about ten to fifteen minutes to complete.

Instrument

A questionnaire with two sections *viz*: demographic variables (which also captures their Cumulative Grade Point Average (CGPA) and their self-reported grades) and the Problem Video Game Playing (PVP) were administered. The PVP questionnaire is one of the most widely used measures in assessing videogame addiction among young people (Beranuy *et al*, 2013). The PVP was developed in 2002 by Salguero and Moran using 223 Spanish adolescents. It is a 9-item questionnaire with a dichotomous response option. The PVP has a Cronbach alpha of 0.69. There is a positive correlation between PVP and the severity of dependence scale. There is also a positive correlation between PVP scores and duration of videogame play among adolescents. A Cronbach alpha of .70 and a Spearman Brown split half reliability of .72 for equal length and .72 for unequal length were established for the PVP in this study.

Results

Table 1: One-Way ANOVA and Descriptive Statistics on the influence of videogame addiction on academic performance

Cumulative GPA		Video Game Addiction	95% CI for Mean			
Group		Mean	SD	n	Difference	
Group 1	1.25 to 3.49 CGPA	3.64	2.22	67	3.10, 4.18	
Group 2	3.50 to 4.49 CGPA	2.80	2.09	149	2.46, 3.14	
Group 3	4.50 to 5.00 CGPA	2.44	1.62	34	1.88, 3.01	

Source	Sum of Square	df	MS	F	Sig.	eta
Between Groups	44.11	2	22.06	5.15	.01*	.04
Within Groups	1057.75	247	4.28			
Total	1101.86	249				

*p < .05.

Table 2: Multiple comparisons of mean difference of participants on the influence of videogame addiction on academic performance

Multiple Comparisons		
Group (I)	Group (J)	Mean Difference (I - J)
< = 3.49	3.50 – 4.49	.84*
	4.50 +	1.20*
3.50 - 4.49	< = 3.49	-.84*
	4.50 +	NS
4.50 +	< = 3.49	- 1.20*
	3.50 – 4.49	NS

*p < .05. ; NS = Not Significant

Table 1 shows the result of a one-way analysis of variance conducted to test the influence of videogame addiction on academic performance of participants. The result showed a statistically significant difference in the academic performance scores of

the three groups at the $p < .05$ level of significance: $F(2, 247) = 5.15, p = 0.01$. The effect size was calculated using eta squared and a small effect size of 0.04 was obtained. A Post-hoc comparison using the Tukey HSD test (Table 2) indicated that the mean score

for group 1 ($M = 3.64, SD = 2.22$) was significantly different from Group 2 ($M = 2.80, SD = 2.09$) and Group 3 ($M = 2.44, SD = 1.62$). Group 1 showed the highest significance from Group 2, and 3. From the result there is a significant influence of videogame

addiction on the academic performance of male undergraduate students in the selected Nigerian private University. The result also showed that the higher the video game addiction, the lower the male students CGPA and *vice versa* (figure 1).

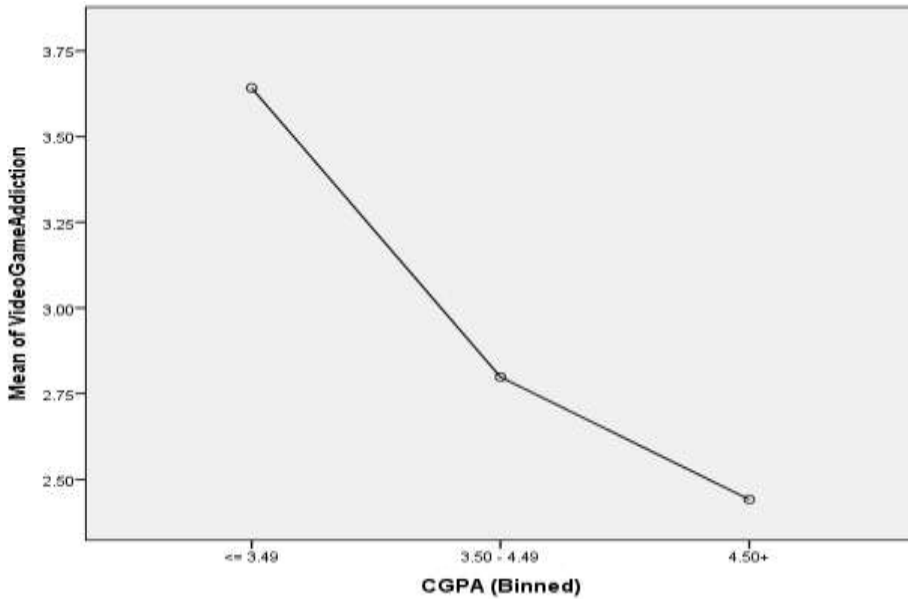


Figure 1: The mean scores of videogame addiction on academic performance (CGPA in 3 categories)

Table 3: Result of Pearson Product Moment Correlation Coefficient (PPMCC) on the relationship between videogame addiction and academic performance measured with CGPA

Videogame Addiction & CGPA							
Variable	Video Game Addiction			CGPA			r
	M	SD	n	M	SD	n	
Videogame Addiction & CGPA	3.81	.61	250	2.98	2.10	250	-.262**

$p < .01^*$

Table 3 shows the result of a PPMCC conducted on the relationship between

videogame addiction and Academic performance measured with CGPA.

The result showed a significantly negative relationship between videogame addiction and academic performance measured with the CGPA ($r = -.262$) of male undergraduate students. From the result of the

PPMCC, it is evident that as videogame addiction increases, the academic performance measured objectively with male student's CGPA decreases.

Table 4: Result of Pearson Product Moment Correlation Coefficient (PPMCC) on the relationship between videogame addiction and self-reported academic performance

Variable	Videogame Addiction & Self-Reported Grades						
	Video Game Addiction			Self-reported Grades			
	M	SD	n	M	SD	n	r
Videogame Addiction & Grades	2.98	2.10	250	2.78	1.22	250	.261**

$p < .01^*$

Table 4 shows the result of a PPMCC conducted on the relationship between videogame addiction and self-reported academic performance. The result paradoxically showed a significant relationship between videogame addiction and self-reported academic performance ($r = .261$). From the result of the PPMCC, it is evident that as videogame addiction increases, the self-reported academic performance measured through subjective personal assessment of participants by themselves increases.

Discussion

Our findings in this study shows that video game addiction adversely affects academic performance when academic performance is objectively measured using male undergraduate students CGPA but when academic performance is subjectively measured using students self-reported grades, there is no negative effect of

videogame addiction on academic performance.

A negative relationship between videogame addiction and academic performance was found by Schmitt and Livingston (2015). They reported a negative correlation between videogame addiction and college GPA in their one year longitudinal study of males in Minnesota, USA. An adverse effect of videogame addiction was also found by Chiu, Lee and Huang (2004) who reported a negative association between videogame addiction and academic achievement among Taiwanese adolescents. Our study also agrees with the findings of Anand (2007) who reported a negative correlation between the time students invest into playing videogame and their academic performance. In concurrence with our study, Weis and Cerankosky (2010) also found a negative impact of videogame addiction on academic performance.

Weis and Cerankosky (2010, p.463) in an attempt to present a reason why videogame addiction has an adverse effect on academic performance noted that, "...video games may displace after-school activities that have educational value and may interfere with the development of reading and writing skills in some children." They sample 6 to 9 year old young boys for their study and their findings imply that videogame addiction and its attendant negative effect on academic performance extends to children too.

The detrimental effect of videogame addiction on academic performance was specifically measured by Anand (2007) with objective measures using GPA and SAT scores and noted that both scores decreased as videogame usage increased. The use of objective measure such as the GPA in our study and that of Anand (2007, p.552) and the resulting negative correlation with academic performance shows that, for students to maintain good grades, a reduction in videogame use is non-negotiable. One of the reason which has been adduced for this negative effect of videogame on academic performance is that the more students spend time playing videogames, the more they have less time for academic work which inevitably translates to lower performance (Haghbin, Shaterian, Hosseinzadeh & Griffith, 2013).

In line with our finding, Gentile (2009) found that pathological gamers spent more time playing, had lower grades and attention issue than did their non-pathological counterparts. The negative academic performance could be as a result of negative

investment of their time. For instance, Wood, Griffiths and Parke (2007) found that young people tend to lose the time they are supposed to use doing other things while playing video games. The pervasive nature of videogame addiction among adolescents (Grusser, Thalemann & Griffiths, 2007) has been found not only to negatively affect academic performance (Barlett *et al.*, 2009; Schmitt & Livingston, 2015) but has also been found to affect overall college engagement by male college students (Schmitt & Livingston, 2015). Videogame addiction not only correlates negatively with academic performance, but Rehbein, Kleimann and Moble (2010, p. 269) reported that video game dependency "is accompanied by increased levels of psychological and social stress in the form of lower school achievement, increased truancy, reduced sleep time, limited leisure activities, and increased thoughts of committing suicide." Chiu, Lee and Huang (2004) added that videogame addiction is related to hostile behavior among young people while Quareh, Khan and Masroor (2013) in addition to increased aggression added that videogame addiction can induce feelings of loneliness among adolescents. The plethora of other effects of videogame addiction underscores the need for clinicians to tenaciously intervene.

Although there is mounting evidence in scientific literature on the negative effect of videogame addiction on academic performance (Anand, 2007; Bartlett *et al.*, 2009; Gentile, 2009; Schmitt & Livingston, 2015) as shown in this study, some authors are

however of the opinion that, “the impact of video-gaming on academic performance is too small to be considered problematic” (Drummond & Sauer, 2014). Surprisingly, this is also empirically supported. However, since studies that are in support of videogame addiction having a negative effect on academic performance including ours almost drowns out studies that are not in concurrence with the effect of videogame addiction on academic performance, it is our position that there is a negative effect of videogame addiction on academic performance from the outcome of our study. The positive correlation from our participant’s subjective self-reported grade should be taken as outcome of a self-reported grade, taking into cognizance, social desirability and how people tend to strive to appear socially desirable.

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