

Effect of Mobile Gaming / Computer Gaming On the Physical, Academic & Psychological Performance of School Going Adolescents

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Abstract

Background: The present research study was design to investigate the factors affecting academic performance as well as physical performance of school going children of schools of Indore district. The variable under consideration were academic performance and physical performance as a dependent variable and gender, age, residential area (rural/urban),accommodation, study hours, sleep hours ,time spend on mobile and electronic gaming were independent variables. **Subjects and Methods:** The data was collected from 670 students of age group 11-15years of different school of Indore using simple random sampling technique.378 student were found to have access to mobile gaming/electronic gaming with more than 2 hour of routing access. **Results:** For analysis Chi-square was used. The finding revealed that school performance regarding physical activity, academic performance, & psychomotor effect in the class had declined with repetitive use of mobile phone and electronic gaming. **Conclusion:** A linear model was also proposed that will be helpful to improve the performance of school going Teenagers.

Keywords: Mobile Gaming, Computer.

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Introduction

Student academic and physical performance is affected by numerous factor including gender, age, teaching faculty, student schooling, father/guardian social economic status, residential area of students, medium of instructions in schools, tuition trend, daily study hour and accommodation as hostelrys or day scholar, nutritional status and gaming(indoor/ outdoor).

Many researchers conducted detailed studies about the factors contributing student performance at different study levels. Graetz (1995) suggested “A student educational success contingent heavily on social status of student’s parents/ guardians in the society. Considine and Zappala (2002) noticed the same that parent’s income or social status positively affects the student test score in examination.^[1] According to Minnesota (2007) “the higher education performance is depending upon the academic performance of graduate students.^[2]

Parent’s socio-economic condition, which includes parents’ academic and professional qualification, revenue and occupational affiliation, is also associated with academic gain of students. So the students belonging from higher social economical backgrounds will perform better than other students associated with low social economic backgrounds. “Social and economical status of student is generally determined by combining parents’ qualification, occupation and income standard” (Jeynes, 2002).^[3] On other

hand Pedrosa et.al (2006) in their study on social and educational background pointed out those students who mostly come from deprived socio-economic and educational background performed relatively better than others coming from higher socio-economic and educational area. They named this phenomena educational elasticity.^[4]

It is also assumed that children learning outcome and educational performance are strongly affected by the standard and type of educational institution in which students get their education. Kwesiga (2002) approved that performance of the students is also influenced by the school in which they studied but he also said that number of facilities a school offers usually determine the quality of the school, which in turn affect the performance and accomplishment of its students.^[5] Sentamu (2003) argue that schools influence educational process in content organization, teacher and teaching learning and in the end evaluation of the all.^[6] school ownership and the funds available in schools do indeed influenced the performance of the student. Crosne and Elder (2004) noticed that school ownership, provision of facilities and availability of resources in school is an important structural component of the school.^[7] Private schools due to the better funding, small sizes, serious ownership, motivated faculty and access to resources such as computers perform better than public schools.

School performance is also affected by electronic and video gaming. Cummings HM and Vandewater EA. (2007)

noticed Although gamers and non-gamers didn't differ in the amount of time they spent interacting with family and friends, concerns regarding gamers' neglect of school responsibilities (reading and homework) are warranted.^[8] Weis R and Cerankosky BC (2010),^[9] Boys who received the system immediately also had lower reading and writing scores and greater teacher-reported academic problems at follow-up than comparison children. Amount of video-game play mediated the relationship between video-game ownership and academic outcomes.

Poor nutrition also effect school performance. Kudzai Chinyoka (2014),^[10] noticed Impact of Poor Nutrition on the Academic Performance of Grade Seven learners. Howard Taras,^[11] noticed cognitive performance seems to improve with iron therapy.

This study let the research scholars to hypothesize that the background to the students positively correlates with the academic attainment of school students.

1. On average the school performance of male and female student are equal.
2. On average the school performance of students with respect to their schooling perspectives or background (i.e. Government /Private) are equal.
3. On average the school performance of students with respect to their residential area (i.e. Urban /Rural) are equal.
4. On average the school performance of students with respect to their medium of instruction in school (i.e. English /hindi) are equal.
5. On average the school performance of students with respect to their accommodation (i.e. Hostelryes/Day Scholar) are equal.
6. On average the school performance of students with respect to their parent's socioeconomic condition is low with poor socioeconomic condition.
7. On average the school performance of students with respect to their standard and type of educational institution (private/public) private schools perform better.
8. On average the school performance of students with respect to their nutrition (low/adequate calories) well feed student perform better.
9. On average the school performance of students with respect to their access to mobile /electronic gaming has poor performance.

Purpose of the Study

This study is important because it seek to assess, examine and evaluate the impact of mobile/electronic gaming on physical and mental performance of student with the aim of suggesting sound measures and solution to minimize consequence caused by excessive use of electronic and mobile gaming.

Subjects and Methods

Research design

This study entitled Effect of Mobile Gaming / Electronic Gaming on Physical As well As Mental Performance of School Going Teenagers. The study adopted a qualitative phenomenological case study design in order to explore and present the effect of Mobile Gaming / Electronic Gaming on the school performance. A case study design was developed in order to gain insights into not only schooling, parenting, and nutrition, but also access to recent modernization of technology affect the performance of student.

Sampling

The study was carried out in six secondary schools (4 urban, 2 rural) in Indore district. Three out of six schools were government while other three were private. The selection of the schools and the classes was purposefully done to ensure that the findings were authentic. Target population were 11-15 years. Simple random technique was employed in selecting the sample. Total of 670 student were evaluated and 378 student with access to mobile/electronic gaming for more than 2hr were considered as subject for the study.

Ethical Considerations

Permission to conduct the study was secured from Ethical committee. The researcher also secured permission from the selected school teachers; headmasters; student's parent. The participants were informed that their involvement in the study was voluntary and that they were free to withdraw at any stage of the interviews if they were not comfortable. Participants were assured of anonymity in the research report.

Data collection and analysis

In addition to the intensive review of related literature, data was collected through interviews, focus group discussions (parents teacher meeting) and observations. During the focus group discussions with the school student, the researcher created a social environment in which group members were stimulated by one another's perceptions and ideas. The researcher personally went to the respondents and filled out the questionnaires so that the true responses could be obtained. The researcher use close ended questionnaires because the population is literate and large and time for collecting data is limited. Data from Questionnaires was compiled, sorted, edited, classified and coded into the coding sheet of SPSS 20.0 (version) and Microsoft Excel 2007. For testing the hypothesis, Chi-square test was used and graphs are constructed using Microsoft Excel 2007 graphical functions.

Results

Table 1: Effect of Mobile Gaming / Electronic Gaming on Physical As Well As Mental Performance Of School Going Teenagers.

Category	Sub- category	Subjects	Percentage
Sex	Female	125	33.07
	Male	253	66.93
Age	10 years	45	11.90
	11 years	37	09.79
	12 years	53	14.02
	13 years	116	30.69
	14 years	127	33.59
Mean age 12.64years			
Location	Urban	276	73.02
	Rural	102	26.98
School	Government	121	32.01
	Private	257	67.99
Tution	Yes	265	70.11
	no	113	29.89
Activity	Active	215	56.88
	Sedentary	163	43.12
Socioeconomic class of parents	Upper class	89	23.55
	Upper middle class	78	20.63
	Lower middle class	125	33.07
	Upper lower class	44	11.64
	Lower class	42	11.11
Game liking	Educational	136	35.98
	addictive	242	64.02
Nutrition	Obese	127	33.60
	Average	144	38.09
	Under nutrition	107	28.31
Physical active for more than 2 hour of outdoor games	Educational game	112	72.05
	Addictive games	136	56.19
	control	216	73.97

Table 2: Effect of Mobile Gaming / Electronic Gaming on Physical As Well As Mental Performance Of School Going Teenagers.

Academic performance with educational gamer	Grade A+	>80 %	27	11.80
Academic performance with educational gamer	Grade A	75.79.99%	49	21.38
	Grade B	70 -74.99%	82	35.80
	Grade C	60-69.99%	24	10.48
	Grade D	50-59.99%	11	4.82
	Grade E	40-40.99%	6	2.62
	Fail	<40%	30	13.1
Academic performance with addictive gamer	Grade A+	>80 %	14	05.78
	Grade A	75.79.99%	44	18.18
	Grade B	70 -74.99%	48	19.83
	Grade C	60-69.99%	84	34.71
	Grade D	50-59.99%	20	08.26
	Grade E	40-40.99%	8	3.30
Academic performance in control group	Fail	<40%	24	9.91
	Grade A+	>80 %	44	15.07
	Grade A	75.79.99%	90	30.82
	Grade B	70 -74.99%	114	39.04
	Grade C	60-69.99%	7	02.38
	Grade D	50-59.99%	12	04.11
Grade E	40-40.99%	3	01.02	
Fail	<40%	22	07.56	

The school & physical performance was affected in children’s respectively, who usually played games.

Discussion

The primary aim of this study was to assess knowledge and opinion among adolescent or school going teenagers regarding effect of mobile and laptop gaming on their education.

Results suggest that in general the majority of students who used to to be in daily contact with laptop or electronic gaming shown positive decline in there marks and education percentile.

Although in overall study some of the students show benefits of gaming in favor of mission games, puzzle games, and brain games but in comparison to those students used to play Arcade, racing and sports game are on higher side in the decline of percentage for marks.

There was gap in knowledge regarding contraindication or side effects of continuous gaming among children's or students who used to spend their 1 or 2 hour daily on laptop or electronic screen.

Very few students had knowledge about the correct use of gaming in their day-today life to improve their subject like mathematics, strategy, statics, science& computer science.

There was no significant difference between the knowledge of gaming among male and female students however there is significant difference was found among Urban and rural school students.

Conclusion

It was observed that school performance regarding physical activity, academic performance, & psychomotor effect (adolescent behavioral changes with anger) in the class were declined with repetitive use of mobile phone and electronic gaming.

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