

## Practique Clinique et Investigation

# The Impact of Electronic Gadget Uses with Academic Performance among Secondary School Students

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### ABSTRACT

**Introduction:** Many school students who own electronic gadget spent most of their time on it. As a result, both of the aspect of academic achievement and health status is affected as they are too dependent on electronic gadget.

**Objective:** The general objective of this study was to determine the association of electronic gadget use with academic performance and health status among selected secondary school students in Kuantan, Pahang.

**Materials and Methods:** A descriptive, cross sectional study by using convenient sampling was conducted on sample size of 233 school students at three selected secondary schools involving SMK Pelindung, SMK Bukit Goh and SMK Teluk Chempedak. The instrument used was structured questionnaire to assess the total time spent on electronic gadget, students' academic performance and students' health status. The data was analysed by using SPSS version 20 in term of descriptive statistic and Pearson Chi-Square test to test the significant association.

**Result:** There were 233 school students who involved in this study and majority of them (59.2%) were Malay. For gender, 53.2% were male and 46.8% were female. In total of 48.1% students were spending time more than 6 hours on electronic gadget and the remaining 51.9% students spending time less than 5.99 hours on electronic gadget. Based on the findings, the result showed that there were significant association between race, gender, parent income, level of dependency, academic performance and health status and the total time spent on electronic gadget but opposing, there were no significant association between years started using electronic gadget and total time spent on electronic gadget.

**Conclusion:** Majority of students who spent more time on electronic gadget use has high level of dependency towards gadget, poor academic achievement and good health status. Thus, the healthcare providers should plan effective intervention such as introduce application on electronic gadget for academic purposes and health tracking to overcome these problems so that students can balance between their academic achievement and health status and increase wellness and health among school students.

**Keywords:** *Electronic gadget; Technology; Internet; Academic performance; School student*

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## **INTRODUCTION**

Electronic gadgets were initially marketed as a source of communication. Although we cannot deny that there are various functions and benefits from using the internet and technology through gadgets, we need to admit that it's silently destroying the effectiveness of socialization among a community. The aim of this study was to investigate the association between the total times spent on electronic gadget with students' academic performance. As Kuantan is one of the developed cities in Pahang, we can consider that the technology such as gadget were widely used in this area. However, there were still lack of study done regarding the effect of prolonged gadget usage among school students especially. Parental guidance is one of the ways to control the amount of gadget use among school students. Thus, this study was done to raise parents' awareness regarding the effects of excessive use of gadget towards academic performance of the students According to Malaysian digital marketing statistic [1], 71% of the Malaysian population uses the internet daily which may reflect the uses of electronic gadgets as well.

In research done by Ramane D and Kottapalle S [2], kids' ages 8 to 19 are now spend an average of 10 hours and 45 minutes a day on the internet which can be translated into 75 hours and 15 minutes per week. According to a research done by Laurisa et al. [3], they found out that 8 to 18 years old log an average of 7½ hours a day with media, including television, computers, cell phones and music players. This result of the research should be worried as youth easily exposed to the gadget use as early as 8 years old. We worried that this problem will be increasing and bring a negative effect to the quality of our young generation's academic achievement. So, further research and studies should be conducted in order to know whether current intervention and awareness on the effect of excessive use of gadgets is effective or not.

As we know, school students required more attention as during their age, rapid changes of the hormones and instinct urged them to try something new without guidance which eventually may lead to severe cases. We have to know how students react to the effect of excessive use of gadget so that we can gain more information and improve their attitude towards excessive use of gadget from time to time. Other initiative also can be done to reduce the use of electronic gadget among students by exposing them to the side effects of excessive use of gadget.

## **MATERIALS AND METHODS**

This study used descriptive, cross-sectional study design. The data collected and recorded based on the inclusion and exclusion criteria and was conveniently selected. A total of 233 student age 16 years old from SMK Pelindung, SMK Bukit Goh and SMK Teluk Chempedak were obtained as respondents considering inclusion criteria of those who were 16 years old, can understand and read English and Malay language and those who are willing to participate in this study. The exclusion criteria include students who has underlying medical illness, unwilling to participate in this study and having problem to understand and read Malay or English language.

The instrument that were used in this study was a set of questionnaires. The questionnaires consisted of several parts as following; part A regarding the question of socio-demographic data of participants, part B: question regarding the total time spent on electronic gadget and purpose of using it, part C consist of question regarding student academic performance and part D consist of question regarding the health status of students. The data obtained and record the level of academic performance of the students in the past terminal examination (early, half yearly and annual) conducted by respective school. The marks will be expressed in grade point average (GPA). The questionnaires of all parts are taken from a thesis of master's degree student conducted on 2014 entitle

“Addiction to technological gadgets and its impact on health and lifestyle: A study on college students” by Jyoti Ranjan Muduli [4].”

## RESULTS

The study was conducted at three secondary school in Kuantan, Pahang. A total of 233 respondents or students had enrolled in this study as required from the estimated total sample size calculation. From the data collected, the distribution for total time spent on electronic gadget were recorded and analyzed. Based on the data obtained, there were 124 respondents were males (53.2%) and 109 respondents were female (46.8%). Based on race, there were 138 respondents were Malay (59.2%), 55 respondents were Chinese (23.6%), 30 respondents were Indian (12.9%) and 10 respondents were from others (4.3%). Meanwhile, in term of parental income, 24 respondents were parent with less than RM999 (10.3%), 38 respondents were parent with income RM1000 - RM1999 (16.3%), 54 respondents were parent with income RM2000 - RM2999 (23.2%), 53 respondents were parent with income RM3000 - RM3999 (22.7%), 37 respondents were parent with income RM4000 - RM4999 (15.9%) and 27 respondents were parent with income more than RM5000 (11.6%). In this study, the purpose used of electronic gadget shows that communication was the highest mean obtained from the respondents as compared to other purposes followed closely by entertainment, study and others respectively.

Most respondents spent more than 6 hours on electronic gadget with total of 112(48.1%) out of 233 respondents. 31(13.3%) respondents at least spent 2 to 3.99 hours on electronic gadget which recorded the least time spent on electronic gadget. 38(16.3%) respondents spent time on gadget between 0 to 1.99 hours, while 52(22.3%) respondents spent 4 to 5.99 hours of their daily life on electronic gadget.

Variable		Frequency (n)	Percentage (%)
Total time spent on electronic gadget (hours)	0 - 1.99	38	16.3
	2.00 - 3.99	31	13.3
	4.00 - 5.99	52	22.3
	>6.00	112	48.1
<b>(Mean ± SD) = 3.02 ± 1.127</b>			

**Table 1:** Total time spent on electronic gadget (N = 233).

**Note:** \*Descriptive statistic.

Table 2 below shows the distribution data for all 233 total respondents regarding their academic achievement in last years’ three term examination conducted by respective school. Most respondents have poor academic achievement with 134(57.5%) from the total of 233 respondents. Student with good academic performance were at least 15 respondents or equivalent to 6.4% of total 233 respondents who take part in the study. A total of 84 respondents were having moderate academic performance with percentage of 36.1% from the total of 233 respondents.

Variable		Frequency (n)	Percentage (%)
Students’ Academic Performance	Good	15	6.4
	Average	84	36.1
	Poor	134	57.5
<b>(Mean ± SD) = 2.51 ± 0.617</b>			

**Table 2:** Students' Academic Performance (N = 233).

**Note:** \*Descriptive statistic.

The student academic performance was interpreted in three different range which is good, average and poor accordingly. There were a significant association between the total times spent on electronic gadget use with the students' academic performance, where the p-value of Pearson Chi-Square test is 0.019. There were 134 respondents with poor academic performance and 54.5% (n = 61) of them were having more than 6 hours total time spent on gadget which shows the highest percentage. A total of 84 respondents with average academic performance, 38.4% (n = 43) using electronic gadget more than 6 hours. From 15 respondents with good academic performance, only 7.1% (n=8) of them use electronic gadget more than 6 hours. The details of result were shown below in Table 3.

Variable	Frequency (n)	Total Time Spent on Electronic Gadget (Hours)				X <sup>2</sup> Statistics (df)	p Values
		0 - 1.99 n (%)	2.00 - 3.99 n (%)	4.00 - 5.99 n (%)	>6.00 n (%)		
Students' Academic Performance		<b>Average</b>				15.155 (6)	0.019
Good	15	6(15.8)	1(3.2)	0(0)	8(7.1)		
Average	84	7(18.4)	10(32.3)	24(46.2)	43(38.4)		
Poor	134	25(65.8)	20(64.5)	28(53.8)	61(54.5)		

**Table 2:** Association between the Total Time Spent on Electronic Gadget with the Students' Academic Status (N = 233).

**Note:** \*Pearson Chi-Square test.

## DISCUSSION

Based on the finding of the study conducted, it shows that there was a significant association between the total times spent on electronic gadget with students' academic achievement among school students with p-value of 0.019. Rabui H, et al. [5] found out in her research finding that mobile phone usage significantly influenced academic performance among male and female secondary school students. Besides, Jackson L, et al. [6] opined that mobile phones' usage is negatively impacting students' academic performance, implementing that students who are using mobile phone more are having poor GPA.

This study found out that total time spent on electronic gadget significantly associated to the academic performance of the students. Many other researchers found out that normally students who spent more time on electronic gadget had high level of dependency towards gadget, poor academic performance and also health status. Several limitations occur during conducting the study including limited time to collect data. As this was happened, the researcher had difficulties in finding students who are free, willing to answers the questionnaire and understand Malay or English language as the questionnaire only in those two languages. The researcher also had to wait for the dragged time of ethical approval from the related authorities.

## CONCLUSION

The result of this study will help the Ministry of Education and also secondary school itself to plan for a better and help in reducing the number of students who spent most of their total time on electronic gadget and continuously affecting their academic achievement. The Ministry of Education and schools should plan a strategy for limiting excessive time spent on electronic gadget by promoting positive lifestyle modification and encourage physical activity among students. Parents also should play an important role in controlling the usage of electronic gadget use among children. Children tend to follow what their parents did. Therefore, if the parents portray a good role model in controlling electronic gadget use, encourage children to study or be a mentor for their own child and always practice appropriate physical activities, they will naturally follow their parent's attitude.

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