INTERNET ADDICTION, ACADEMIC PERFORMANCE AND UNIVERSITY STUDENTS

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AUTHOR'S CONTRIBUTION
The sole author designed, analyzed and interpreted and prepared the manuscript.

Original Research Article

ABSTRACT

The purpose of this study is to identify the relationship between internet addiction and academic performance among undergraduates. The study also identified the differences in internet addiction in terms of gender and place of residence. A total of 100 students were selected randomly from undergraduates who follow B.Com (Special) degree program in University of Sri Jayewardenepura. Internet addiction test (IAT) based on Young's [1] survey was used with some modifications. The data collected was analyzed using SPSS. The statistical techniques frequency and percentage were used to identify the patterns of using the internet, and independent sample t-test and one-way ANOVA were used to examine the differences in internet addiction in terms of demographic factors. Pearson correlation technique was employed to determine the relationship between internet addiction and academic performance. The results indicated that there was a statistically significant negative relationship between internet addiction and academic performance. The results of the study also showed that there were significant differences in internet addiction in terms of gender and place of residence. This suggests that future research need to work on large sample including various degree programs and in universities.

Keywords: Internet use; internet addiction; students' performance; gender.

1. INTRODUCTION

Today the world is celebrating improvements in communication technology which has broadened the scope of communication through Information and Communication Technologies Asemah et al. [2]. Improvements in information and communication technology tied the world more close. Internet has experienced extraordinary growth in both its size and number of users around the world Usman et al. [3]. Internet is becoming a widely accepted path for information exchange and networking. The benefits of the internet have been widely researched and include keeping in touch with friends, transferring funds, engaging with entertainment and assisting with educational needs Akhter [4]. Internet has enlightened the human society by providing information, transforming knowledge and facilitating for communication. However, it created its own problems and internet addiction becomes one of them Kapahi et al. [5].

Many uses of the internet and its charm in recent years have led to the emergence of a phenomenon known as internet addiction Jahanian et al. [6]. Over the last couple of years, internet addiction has become

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a global concern to the public and can be classified as a health issue [5]. Further [5] indicated that addictive behaviors are concerned to having improper life style and impairment to personalities among the young.

Technology and the internet use particularly by college students are associated with more frequent communication with friends and family members. The main use of the internet for college students is interpersonal communication through email, instant messaging, and chat programs [3]. As the result of technological improvements and cellular phones features are tremendously changes and therefore students no longer need to visit a cybercafé to obtain internet facilities.

As [2] stated, smart phone has complicated the situation where important ventures like study and writing are adversely affected. Research findings have shown that excessive use of internet or internet addiction adversely affects one's physical health, family life, and academic performance [4]. Internet usage creates positive impacts on education in way of increasing communication with classmates and lecturers, reviewing e-books, increasing access to libraries and educational databases, and improving study hours and study habits [4]. Despite these benefits of internet use, researchers have maintained that college students are at particularly high risk for developing internet addiction. The important effect that needs to be investigated is whether internet addiction will affect the academic performance of students. Academic problems caused by internet addiction include decline in study habits, significant drop in grades, missing classes, increased risk of being placed on academic probation, and poor integration in extracurricular activities.

The main research question of the study is; does internet addiction have impact on students' academic performance? Then, the study attempts to identify whether the revelation of the students' internet usage has affect on their academic performance. Further, it also investigates extend of using internet as academic purposes or non-academic purposes. In addition to that the study evaluates gender influence and residential place influence on internet addiction.

The paper outlines literature review on academic performance and internet addiction, discussion of methodology and presentation of findings. Conclusion and discussion are drawn based on the analysis of results.

2. LITERATURE REVIEW

Internet addiction is rather a new research area which has less than ten years history [4]. Internet addiction

has become a global concern to the public and it can be identified as a health issue [5]. An individual's inability to control the usage of internet is defined as internet addiction (Chao and Hsiao, 2000, cited at [4] p. 1794). Internet overuse or excessive use of computer that may lead to interfere or change in ones regular daily life can be described as internet addiction [5]. In the internet addiction, people become addicted not to the substance, but to work with computer or to the feeling achieved during working with the internet [6]. Young internet users are more at risk of becoming internet addicts than older users Thatcher and Gooloman, [7].

University students are concerned as high risk group for internet addiction due to availability of free time, less monitoring and more facilities available to access internet, [1]. Following that argument, Suhail and Bargees [8] stated that despite the benefits of internet use such as; communication with lecturers, access to libraries and databases, university students are at high risk for developing internet addiction.

2.1 University Students and Internet Addiction

A common group widely used to study internet addiction is university students. University students are considered as a high risk group for internet addiction [1], Nalwa and Anand, [9]. Possible reasons for this are: Students have huge blocks of unstructured time, universities provide free and unlimited access to the internet, students from the ages of 18 – 22 years are for the first time away from parental control without anyone monitoring, young students experience new problems of adapting to university life and finding new friends, and often end up seeking a companionship by using different applications of the internet, students receive full encouragement from faculty and administrators in using the different internet applications, adolescents are more trained to use the different applications of technological inventions and especially the internet, students desire to escape university sources of stress resulting from their obligations to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and finally students feel that university life is alienated from social activities, and when they finish their studies, the job market with all its uncertainties is a field where they must participate and succeed in finding employment [10]. Despite the positive effects of internet, there is growing literature on the negative effects of its excessive use. There are harmful effects on individuals, academic performance, social behaviour, habits and abilities due to the use of internet addictively [9,10]. On the basis of the existing literature it was hypothesized that

internet addiction would have negative impact on academic performance of the university students [4].

Asemah et al. [2] examined the influence of social media on the academic performance of undergraduate students of Kogi state university, Nigeria. More students use social media, the more they influence their disposition to study, given the fact that friends from social media begins to exert influence on each other [2]. The study concluded that exposure to social media has negative effect on university students' performance.

According to the study of Shana [11], students' intention of using internet mainly for making friends and chatting, and only a few percentage (26%) of students use internet for academic purpose. [10] investigated the affect of internet use and social capital on the academic performance of the students. The study commented that internet usage has less affect on studies and students are more relying on the internet to access information and entertainment. The study conducted Jeong [12] demonstrated that internet addiction is significantly and negatively affect students' academic performance. Further, Nauert [13] revealed that chatting on cell phones might lower grades for freshman female students.

Akhter [1] analyzed the relationship between internet addiction and academic performance in National University of Sciences and Technology, NUST HQ Campus Islamabad in Pakistan. [3] investigated the relationship between internet addiction and academic performance among foreign undergraduates in University Teknology, Malaysia. The study also determined the gender differences in internet addiction. [5] examined the level of internet addiction among Malaysian youth and excessive use of the addictive level. The study revealed that internet addiction among Malaysian youth is at high risk and age range of 18 to 25 is found to be susceptible to internet addiction. [6] investigated the impact of internet addiction on students' mental health. The study indicated that there is a significant relationship between internet addiction and mental health of students.

2.2 Gender and Internet Addiction

Studies indicate that the use of computers and the internet differs between men and women. Weiser [14] conducted a study on gender differences in internet use patterns and internet application preferences. The study concluded that there were numerous gender differences in preferences for specific Internet applications. The same results were confirmed by the study of Morahan-Martin and Schumacher [15].

Further [4] revealed that male students have high internet addiction than females. However, [3] showed that there were no gender differences in internet addiction. Papastergiou and Solomonidou [16] mentioned that boys have more opportunities to access the Internet and use the internet for entertainment and Web page creation than girls do, with no other differences in other activities.

2.3 Residential Place and Internet Addiction

The presence of a computer with internet access in a person's environment is necessary for the person to develop internet addiction. Students come to the university from home, boarding place, and hostels. There might be differences in internet addiction in terms of place where they stay. Students who come from home regularly monitored with their parents, however students who stay at boarding places and especially hostel are not supervised by adults [17].

3. METHODOLOGY

The survey research study method was employed and a structured questionnaire was used to collect data from the desired sample. The questionnaire included 3 parts and 15 questions. The first part was regarding students' personal information. The second part tested the students' internet using patterns (Academic purposes: Complete lecture notes/assignments, Search books, Search research articles and Non-academic purposes: Communication [eg: e-mail, facebook], Entertainment [eg: Youtube, video games, download movies], Online transactions). And last part gathered students' internet addiction with 5 point scale from strongly disagree to strongly agree.

The area of study was University of Sri Jayewardenepura. Hence, the main purpose of the study is to determine the impact of internet addiction on academic performance of B.Com undergraduates at University of Sri Jayewardenepura. B.Com undergraduates studying at the third and final academic years were the participants of this study. The students who are in third and final academic years have already completed six semesters and then it is easier to calculate the mean value of GPA. Hundred undergraduates of the whole 220 students in B.Com (special) degree program were selected according to simple random sampling technique.

Internet addiction was measured through internet addiction test (IAT) developed by [9], and modified by [3,4,6]. Internet Addiction Test (IAT) is a measure devised on a Likert scale to rate the degree of the internet use. The statement scale from strongly disagree to strongly agree with neutral point. The

questions range from personal daily life, social life, and emotional feelings. Total IAT scores are used as a measure of the addictive level. Highest score suggested that a person is addicted to the internet and vice versa [5]. The level of internet addiction of students was defined in terms of points scored in the last part of the questionnaire. Point 34 to 50 defined as highly addicted, point 17 to 33 is moderately addicted and point 1 to 16 is defined as low addicted. Academic performance of the undergraduates was measured with grade point of average (GPA) achieved in previous four semesters.

Descriptive statistics and inferential statistics analyses were performed by using statistical package of social science (SPSS) version 17.0. The statistical techniques frequency and percentage were used to identify the patterns of using the internet, independent sample t-test and one-way ANOVA were used to examine the differences in internet addiction in terms of demographic factors. Pearson correlation technique was employed to determine the relationship between internet addiction and academic performance.

4. DATA ANALYSIS AND FINDINGS

Students' internet usage profile and the level of internet addiction were presented using descriptive statistics. Independent sample t-test was employed to determine the differences in geographical factors and internet addiction. Correlation test was performed to identify the relationship between internet addiction and academic performance.

There were 40 male and 60 female students included in the sample. The age of sample ranged from 21 to 23 years old. Based on the residential places, 12 students stay at home, 54 students come to the university at boarding place and at hostel there are 30 students. Only 04 students come from other places such as neighboring places and friends' home.

In the questionnaire students were required to rank their usage of internet according to communication, entertainment, online transaction, lecture note searching, searching e-books, and searching research articles. A total of 100 students, 61 students ranked communication as the main reason for using internet. Following that 30 students were ranked entertainment as their second most internet usage reason. Students who use internet mainly for searching lecture notes and research articles only 20 and 08 respectively. Then the study specified the internet usage as academic purposes and non-academic purposes. According to that specification, 44 students mainly use internet for their academic purposes and remaining 56 students use for non-academic purposes.

The level of internet addiction of students was defined in terms of points scored in the internet addiction test. Point 34 to 50 defined as highly addicted, point 17 to 33 is moderately addicted and point 1 to 16 is defined as low addicted. Table 1 illustrates the frequency and percentage of internet addiction level of undergraduates.

In generally, the findings of the study show that university undergraduates who follow Bachelor of Commerce (B.Com) degree at University of Sri Jayewardenepura have addicted to internet at great extent. In total, 84 percent of the sample was addicted to the internet. Table 2 shows the students' main purposes of using internet in gender basis.

Table 1. Internet addiction level

Internet addiction level				
	Frequency	Percent	Valid percent	Cumulative percent
Valid Highly Addicted (34-50)	41	41.0	41.0	41.0
Moderatly Addicted (17-33)	43	43.0	43.0	84.0
Low Addicted (1-16)	16	16.0	16.0	100.0
Total	100	100.0	100.0	

Table 2. Gender and Internet usage purposes

Gender and internet usage purpose cross tabulation			
Count			Total
	Internet usage purpose		
	Academic purpose	Non-academic purpose	
Gender Male	10	30	40
Female	34	26	60
Total	44	56	100

According to the data analysis, the study also identify that male students mostly use internet for non-academic purposes, while female students for academic purposes. Further, internet addictive level among male and female students is shown in Table 3.

Total internet addiction questions scores are used as a measure of the addictive level. The scores from 35 to 50 suggested that a student is addicted to the internet [5]. Male students are highly addictive to the internet than female students. On the other hand, female students are low addicted to the internet than males.

4.1 Data Distribution

In order to test the inferential statistics, it is required to ensure the data distribution normality. Therefore, the dependent variable, academic performance of student was tested with normality test using histogram diagram. The result of normality test indicates the normal distribution of dependent variable.

The reliability of measurement items of independent variable, internet addiction, was tested with Cronbach's alpha (70) and Cronbach's alpha based on standardized items (.826), then the value indicating satisfactory reliability.

In addition to descriptive analysis, inferential analysis was also conducted to test the hypothesis of the study. The techniques applied were independent sample t-test, one way ANOVA and Pearson correlation. In the following parts, the hypotheses are reiterated and the results are presented:

Table 4 presents the correlation between internet addiction and academic performance. Hypothesis 1 is concerned on relationship between internet addiction and academic performance.

H1: There is no significant relationship between Internet Addiction and academic performance

The results of Pearson correlation coefficients in Table 4 which in this case, the correlation between internet addiction and academic performance was statistically negatively significant ($r = -.609$, $p < .000$). Hence, null hypothesis 1 was rejected.

H2: There is no significant difference in internet addiction between male and female students

The results of independent sample t-test in Table 5 indicates that there is a statistical significant difference in internet addiction between males and females ($t = 3.465$ and $p < .001$). Thus, null hypothesis H2 proposed in this study was rejected.

H3: There is no significant difference in internet addiction among place of residences Table 6 illustrates the result of One-way ANOVA test performed to identify the residential place differences on internet addiction.

The results in Table 6 indicated that there is statistical significant difference in internet addiction among residential places of undergraduates ($t = 2.921$ and $p = .038$). Thus, null hypothesis H3 proposed in this study was rejected.

Finally, t-test was performed to identify whether students who use internet for academic purposes, their academic performances are high. Table 7 indicates the outcome of independent sample t-test of internet usage purpose and academic performance.

H4: There is no difference between internet usage purpose and academic performance

The results in Table 7 indicated that there is statistical significant difference between internet usage purpose and academic performance ($t = 10.821$ and $p < .000$). Thus, null hypothesis H4 proposed in this study was rejected.

Table 3. Internet addiction level and gender

Gender and internet addiction level cross tabulation					
Count					Total
		Internet addiction level			
		Highly addicted (35-50)	Moderately addicted (20-34)	Low addicted (1-19)	
Gender	Male	24	13	3	40
	Female	17	30	13	60
Total		41	43	16	100

Table 4. Relationship between internet addiction and academic performance

Correlations		Mean GPA	Total internet addiction
Mean GPA	Pearson Correlation	1	-.609[**]
	Sig. (2-tailed)		.000
	N	100	100
Total Internet Addiction	Pearson Correlation	-.609[**]	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed)

Table 5. Internet addiction differences among male and female

Group statistics	Gender	N	Mean	Std. deviation	Std. error mean
Total internet addiction	Male	40	31.08	7.631	1.206
	Female	60	25.10	8.946	1.155

Independent samples test		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95%confidence interval of the difference	
									Lower	Upper
Total internet addiction	Equal variances assumed	.723	.397	3.465	98	.001	5.975	1.724	2.553	9.397
	Equal variances not assumed			3.578	92.100	.001	5.975	1.670	2.658	9.292

Table 6. Residential place differences on internet addiction

Descriptive								
Total internet addiction								
	N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Home	12	22.00	6.862	1.981	22.64	31.36	15	38
Boarging Place	54	28.94	9.230	1.256	25.43	30.46	11	43
Hostel	30	28.37	8.628	1.575	22.14	28.59	11	43
Other	4	22.75	.500	.250	37.95	39.55	38	39
Total	100	27.49	8.904	.890	25.72	29.26	11	43

ANOVA					
Total internet addiction					
	Sum of squares	df	Mean square	F	Sig.
Between Groups	656.440	3	218.813	2.921	.038
Within Groups	7192.550	96	74.922		
Total	7848.990	99			

Table 7. Internet usage purpose and academic performance

	Group statistics				
	Internet usage purpose	N	Mean	Std. deviation	Std. error mean
MeanGPA	Academic Purpose	43	3.3162	.22408	.03417
	Non-Academic Purpose	57	2.8193	.22980	.03044
	Independent samples test				
	Levene's Test for Equality of Variances	t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
								Lower	Upper
MeanGPA	Equal variances assumed	.027	.869	10.821	98	.000	.49697	.04593	.40583	.58810
	Equal variances not assumed			10.860	91.761	.000	.49697	.04576	.40608	.58786

5. DISCUSSION AND CONCLUSION

The main objective of this study was to analyze the relationship between internet addiction and academic performance of university undergraduates. The study concerned on B.Com (Special) undergraduates at University of Sri Jayewardenepura.

The study developed four hypotheses to investigate the impact of internet addiction on academic performance. Acknowledging the existing empirical studies it was hypothesized that internet addiction would have negative impact on the academic performance of the students. Concerning the first hypothesis, the result revealed that internet addiction was negatively affected on academic performance. Same result has been revealed by the studies of [4], [2], Young [18,12,13,17], Suhail and Bargees [8], and [3]. The second and third hypotheses involved in the significant differences of internet addiction with gender, place of residence and internet usage. The profile of the user addicted to the internet is male students than females, who accesses internet mostly for non-academic purposes have poor academic performances. The same outcome was stated by the studies of [4,14,15]. Further there was a significant difference in internet addiction among residential places of undergraduates. Concerning on hypothesis 4 there is a difference between internet usage purpose and academic performance.

Based on the results, the study suggests some academic implications for students and the university. The result of correlation analysis indicates that internet addiction had significant negative impact on academic performance of undergraduates; therefore, students should concern more on their academic activities than spending unnecessary time on the internet. University lecturers and administrative authorities would have responsibility to make students aware regarding negative consequences of internet addiction. If students are engaging with more academic activities like group assignments, field visits, workshops, career guidance activities and other extra curriculum activities (sport, poetry, narrative), they may not spend unnecessary time on internet. On the other hand more academic involvement encourage students spend time on internet for academic purposes.

6. LIMITATIONS OF THE STUDY

The study was conducted at particular degree program at one state university. Therefore, generalization of the findings to the total population of the university undergraduates is limited. Further, the study investigated the impact of internet addiction on academic performance. There are more social and economical variables that could affect on academic performance.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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