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Relationship between Internet Addiction and Academic Performance among Foreign Undergraduate Students

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Abstract

The purpose of this study is to identify the relationship between Internet Addiction (IA) and academic performance among foreign undergraduate students in Universiti Teknologi Malaysia (UTM). This study also identified the differences in internet addiction in terms of gender and country of origin. Four countries were selected through simple random sampling; there were China, Yemen, Somalia and Indonesia. Then, a total of 120 students were selected randomly from those countries. In order to measure IA, Internet Addiction Test (IAT) based on Young's (1998) survey which modified by Pee and Shafeq (2009), was used. The data collected was analyzed using SPSS. The statistical techniques frequency and percentage were used to identify the patterns of using the Internet; t-test and one-way ANOVA were used to examine the differences in IA in terms of demographic factors. Pearson correlation technique was also used to determine the relationship between IA and academic performance. The results of the study showed that there were no significant differences in IA in terms of gender, country of origin. The results also indicated that there were no significant differences in IA in terms of CGPA. This suggests that future research need to work on large-scale using multiple-campus technology assessments.

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1. Introduction

Since the mid-1990s, the Internet has experienced unprecedented growth in both its size and number of users around the world (Rotsztein, 2003). According to UN-APCICT (2009), in year 2008, 56.45% of the Malaysia residents were internet users, whilst 23.41% of Malaysian had computers. Following the expansion of internet services in the country and the growth of internet users, there is a prominent trend on the change of the average hours of internet use per week. The number of users using the Internet less than 4 hours a week is declined to 34.9% from 2005 to 2008, while the number of user using the Internet more than 28 hours a week gradually increased to 79.8% (Malaysian Communications and Multimedia Commission (MCMC), 2005; 2008).

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Technology and the Internet use particularly by college students have been associated with more frequent communication with friends and family members (Clark, Frith, & Demi, 2004; Howard, Rainie, & Jones, 2001). According to numerous researches, the main use of the Internet for college students is interpersonal communication through email, instant messaging, and chat programs (Hampton & Wellman, 2001; Howard et al., 2001; Kraut et al., 1998; McKenna and Bargh, 2000; Jones, 2002).

Even though most people agreed that the advantages of the Internet as healthy productive activities such as students can catch up the opportunity by surfing web-sites, engaging in chat-room, excellent tool for the research and so on (Young, 1996b). However, many students fall behind in their studies due to excessive investments in online relationships, which are called-internet addiction (Hansen, 2002). According to the survey conducted in 2009 by American College Health Association-National College Health Assessment (ACHA-NCHA), college students ranked the Internet use in the “Health Impediments to Learning”. 19.7% of the college students reported that their internet use had negative impacts on their previous-year academic results (ACHA-NCHA, 2009). Consequently, students encountered obstacles in their studies, sleep (Anderson, 2001; Nalwa and Anand, 2003), and completing their assignments as well. This problem can also influence their academic performance indirectly.

Many studies have claimed that people may use the Internet addictively and that this can cause harmful effects on individuals, academic problems, changing their social behavior, habits and abilities in a negative way (Young, 1996; Scherer, 1997; Kraut et al., 2002; Kubey et al., 2001; Nalwa&Anand, 2003). In spite of the fact that the Internet could contribute a lot to students’ learning, it is vital to scrutinize students’ internet use trend for early care taking. Due to the mentioned consequences the effect of students’ internet usage on their academic performance need to be addressed. Hence, the purpose of this study is to focus on the foreign undergraduate students’ internet use in UTM, and its impacts on academic performance.

Learning Theory

Based on the Operant Theory in psychology, learning is the most powerful small units of accomplishment which are quickly reinforced (Suler, 1996). Learning theory emphasizes the positive reinforcing effects of internet use which can induce feelings of well-being and euphoria in the user, and works on the principle of operant conditioning (Murali & George, 2007). Similarly, Kandel (1998) stated that using computer or internet allows the user to experience a level of control which is unattainable in other activities. Most importantly, the computer obeys commands once it is issued. It is not the same as dealing with people; computers can do whatever the users want automatically. Naturally, this level of control is quite fulfilling and reinforcing for those who have little sense of control in other areas of their life.

Internet Use: Theories and Models

Grohol’s Model

According to Grohol (1999), “an alternative theory as to why people use the internet to a great extent is a very plausible idea. The behaviours we are observing are phasic”. This theory encompasses three main stages: enchantment/obsession, disillusionment, and reaching balance. The first stage named *enchantment/obsession* usually occurs when the individual is new in activity online. Many of the addicts need to seek other people’s help in order to progress faster to the second stage called *disillusionment* in which the individual often has to become uninterested in the activity they engaged in. In the third stage called *balance*, the balance symbolizes a normal usage of the internet which is reached at a different period by everyone and the phases can still be recycled if the individual finds another interesting new activity. As Grohol (1999) argues, once new activities are discovered, an existing user might have much easier time to successfully navigate through these stages and hence, reach the balance (stage three) more quickly than a new internet user does.

In this respect, Walther (1999) in agreement with Roberts, Smith, and Pollack (1996), assumed that online chat activity is also phasic; first, are enchanted by the activity (known as obsession) and then followed by

disillusionment with chatting and a decline in usage, and, finally, a balance is reached where the level of chat activity is normalized.

2. Methodology

2.1 Sampling

The international undergraduate students studying in the second, third and final year of their studies were the participants of this study. It was assumed that this population broadly use internet and thus, are at the high risk of IA (DiNicola, 2004). Due to the unavailability of GPA and CGPA, first year students were not included in this study. A total of 120 respondents from 4 different countries with the highest population in Universiti Teknologi Malaysia (UTM) attended this study among which 30 of them were students from China, 30 from Yemen, 30 from Somalia and 30 of them came from Indonesia. Simple random sampling was used to select the participants.

2.2 Instrument

The instrument of this study was a questionnaire including 3 parts and 33 questions. The 10 questions in the first part were regarding students' personal information and academic background. The second part containing 7 questions was about students' internet usage profile such as students' habits and internet using patterns. The last part of the instrument was the IAT which was a modified and developed version of Pee and Shafeq's questionnaire (2009) originally based on Young's (1998) which used DSM-IV criteria for pathological gambling. DSM-IV was first designed as a set of diagnostic criteria or checklists to describe the phenomenon of internet addiction and to distinguish people with internet-related addictive behaviours (Chou, Condrón, & Belland, 2005). This part of the questionnaire included 16 questions of 5-point scale from 1 (never) to 5 (always). The level of IA of each individual was determined in three levels of severe (60-80 points), moderate (40-59) and mild (16-39). The higher summed item scores represent the greater levels of internet addiction and the problems caused by internet usage (Center for Internet Addiction Recovery, 2009). Cronbach Alpha (0.79) was used to estimate the reliability of the instrument showing that the internal reliability was consistent.

2.3 Data Analysis

Descriptive statistics (percentage and frequency) were used to identify the characteristics of the respondents' internet usage profile and their level of IA. ANOVA and t-test were also used to determine the differences in the level of IA in terms of demographics factors (gender and country of origin). Further, Pearson correlation was computed to investigate the relationship between IAT and academic performance (CGPA and GPA).

3. Results

Table 1: Respondents' Internet Addiction Level according to the modified criteria of Young's (1998) Internet Addiction Test (IAT)

No	Level	Frequency	Percentage
1	Severe	6	5.0
2	Moderate	83	69.2
3	Mild	31	25.8
Total		120	100.0

Based on the total score, the respondents were categorized into 3 categories: mild, moderate and severe. The severe level of addiction indicated that the respondents' internet usage is causing significant problems in their life. Moderate level of addiction depicted that person is experiencing occasional problems due to internet use and they should have considered the internet's full impact on their life. Mild level of addiction indicated that the person is an average online user who might surf the web a bit long, but still s/he can control over the usage.

Table 2: Level of internet addiction among males and females

No.	Level of Internet Addiction (IAT)	Gender				Total Respondents
		Male	%	Female	%	
1	Severe	3	2.5	3	2.5	6
2	Moderate	53	44.2	30	25.0	83
3	Mild	19	15.8	12	10.0	31
	Total	74	62.5	45	37.5	120

Table 3: Level of internet addiction among the country of origin

No	Level	County of Origin								Total of Respondents
		China	%	Yemen	%	Somalia	%	Indonesia	%	
1	Severe	1	0.8	1	0.8	2	1.7	2	1.7	6
2	Moderate	22	18.3	18	15.0	18	15.0	25	20.8	83
3	Mild	7	5.8	11	9.2	10	8.3	3	2.5	31
	Total	30	25.0	30	25.0	30	25.0	30	25.0	120

Table 4: Analysis of IAT's items

Number of Questions	%					Mean
	1	2	3	4	5	
Q1	6.7	26.7	21.7	33.3	11.7	3.17
Q13	6.7	35.0	26.7	20.0	11.7	2.95
Q8	17.5	24.2	21.7	22.5	14.2	2.92
Q9	20.8	24.2	15.8	25.8	13.3	2.87
Q3	18.3	23.3	29.2	19.2	10.0	2.79
Q10	20.0	24.2	28.3	16.7	10.8	2.74
Q2	10.8	33.3	33.3	15.8	6.7	2.74
Q5	10.0	37.5	28.3	17.5	6.7	2.73
Q12	14.2	37.5	22.5	12.5	13.3	2.73
Q7	22.5	28.3	25.8	15.8	7.5	2.58
Q6	13.3	34.2	36.7	12.5	3.3	2.58
Q14	23.3	26.7	25.8	19.2	5.0	2.56
Q4	21.7	31.7	23.3	17.5	5.8	2.54
Q15	20.8	30.8	28.3	14.2	5.8	2.53
Q16	24.2	32.5	24.2	10.0	9.2	2.48
Q11	21.7	33.3	30.0	10.0	5.0	2.43

Note: 1= Never, 2=Rarely, 3= Occasionally, 4= Often, 5= Always

Table 4 depicts the descriptive analysis of IAT. The percentage and mean were estimated for each item. Among the 16 questions or items, question 1 had the highest mean (3.17). Among the total number of respondents, 11.7% and 33.3% of them always and often experienced this problem which was related to how often they stay online longer than they intended. While 21.7% of respondents occasionally faced this situation, 26.7% and 6.7% of

them rarely or never stayed online longer than they have intended. Item 13 with the mean of 2.95 was the second highest mean in the table. The results show that 11.7% and 20.0% of respondents rated 5 and 4 respectively to this question. While 35.0% and 6.7% of respondents rarely or never had the experience of trying to cut down the amount of time spent online and failed, 26.7% of respondents occasionally have experienced it. Item 8 represented the third highest mean score i.e. 2.92. There were 14.2% respondents rated 5 to this item which means they always find themselves willing to go online again. 22.5% and 21.7% of them rated 4 and 3 respectively while another 24.2% rated 2 for this item. Only 17.5% respondents never had this thought.

Item 15 with the mean 2.53 was the third lowest mean in table. Only 5.8% and 14.2% of respondents always preferred to spend time online than going out with friends. 28.3% and 30.8% of them occasionally or rarely made this kind of choice and 20.8% never had this experience. Item 16 represented the second lowest mean score i.e. 2.48. According to the results, 9.2% respondents ranked 5 and 10.0% answered 4, meaning that they always or often had this kind of feeling. There were also 24.2% and 32.5% respondents rated 3 and 2 respectively to this item. However, 24.2% never had this kind of experience. Lastly, Item 11 with the mean 2.43 was the lowest mean in the table. 5.0% of respondents always feel preoccupied with the internet when offline. 10.0%, 30.0% and 33.3% were often found themselves felt this way. The other 21.7% of them never felt preoccupied with the internet or fantasized about being online.

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

H1: There is no significant difference in internet addiction between male and female students.

The results of t-test which in this case, indicating that there was no significant difference in IAT between males and females (5, $t = -1.47$ and $p = 0.15$). Thus, null hypothesis proposed in this study failed to reject.

H2: There is no significant difference in internet addiction among the country of origin.

The results of One-way ANOVA presenting $F_{2, 116} = 0.78$, $p = 0.51$, implies that there was no significant difference in IAT among participants' country of origin. Thus, null hypothesis 3 also failed to reject.

H3: There is no significant relationship between Internet Addiction Test and CGPA.

H4: There is no significant relationship between Internet Addiction Test and GPA.

The results of Pearson correlation coefficients which in this case, the correlation between scores of IAT and CGPA was not significant ($r = 0.03$, $p = 0.78$). Hence, null hypothesis 4 failed to reject. Moreover, the correlation between IAT and GPA was not significant ($r = 0.01$, $p = 0.93$). Hence, null hypothesis 5 was also failed to be rejected.

4. Conclusion

In the following parts, the hypotheses and the results are shown in the table below:

No	Hypotheses	Conclusion
H1	There is no significant difference in internet addiction between male and female students.	Failed to reject

H2	There is no significant difference in internet addiction between the origins of country.	Failed to reject
H3	There is no significant relationship between Internet Addiction Test and CGPA.	Failed to reject
H4	There is no significant relationship between Internet Addiction Test and GPA.	Failed to reject

The results of this study suggested several implications for students and the university. First, the results of Pearson correlation which indicated that there is no significant relationship between internet addiction and academic achievement, justify that the effects of internet addiction on students' academic performance is not in a critical level. However, early prevention from internet addiction should be taken into consideration and students should consciously be aware of the negative effects of spending unnecessary time on the internet. Another implication of this research which is useful for the university administrators is that they do not need to take any actions for the students with high academic performance. However, when it comes to the students with low academic achievement, the university should provide them with some supportive activities such as group counseling sessions. The university can also increase the students' awareness towards the negative effects of internet addiction through holding campaign, flyers, and seminars which might lead to early prevention of internet addiction problems.

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