# Time Management of Internet Dependency among University Students and its Impact on Academic Performance

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**Abstract**

The study examines time management of Internet dependency among university students and its impact on academic performance. It takes the entire undergraduate students of universities in Nigeria as the universe and sampled 402 students from university of Maiduguri using multistage sampling technique. It adopts cross-sectional research design with two complimentary instruments; the 'Internet use survey' and 'Cognitive Behavioural Checklist' questionnaires to elicit facts from respondents. It retrieves 384 copies of valid questionnaire for this analysis using descriptive statistics and Pearson Correlations. A total of 344 (89.6%) students were categorised as Negative for internet dependency and 40 (10.4%) were categorised as "Positive for internet overuse." The Internet dependency among students was found to positively correlates with the amount of time spent on the internet (Pearson $r = 0.269$, $p < 0.05$) but negatively correlates with their academic performance (Pearson $r = -0.05$, $p > 0.05$) though not statistically significant. There was no association between academic performance and the hours spent online. Conclusively, the study found that one out of every ten student was negative for Internet overuse. This study is useful to management and IT professionals, academicians, researchers, government and students alike. It recommends effective time management, creation of awareness and counselling of students on the danger of Internet overuse to enhance academic performance. It also recommends further research to evaluate the relationship between Internet dependent users with symptoms such as stress, social solitude and other functioning activities in other to effectively manage them.

**Keywords:** Internet Use, Students, Dependency, academic Performance, University

## 1.0 Introduction

The advent of the Internet has affected every aspect of human life the world over and Nigeria in particular. This technology has altered the way people relate, work and enjoy leisure time to the level of managerial concerns. Undoubtedly, the ever-growing amount of Internet content, reduction of accessibility cost and ease of use has improved the lives of many Nigerians. However, cases of excessive use or over-use of the Internet has been allied to mutilation in functional areas of social, academic, professional careers, and physical health (Young and Rogers, 1998; Anderson, 2001 and Beida, 2008). Everyday new users log onto the Internet and also more users have problems of managing the time spent online on daily basis. According to Anderson (2001), several researchers have suggested that some individuals may suffer from Internet dependency and effective time management. Kandell (1998) adds that Internet over dependency has become a growing area of research interest and empirical discuss. Thompson (2008) observes that 24 hours in a day never seems like enough and call for time management techniques to help out.

Time management for students can be one of the most important and difficult skills to learn during college years. Lucier (2013) argues that with so much going on, having strong time management can sometimes seem impossible. However, there is time management options that can help students take control of their life instead of getting exhausted and behind in academics. Time management is aimed at managing the time you spend doing things that help you achieve your goals and the things that you personally prioritise and value (Oxford Brookes University, 2012).

Drawing inference from available literature, scholars opine that Internet dependency has been characterised by occurrences such as increasing commitment of resources on online activities such as money, time and energy; obnoxious feelings such as anxiety, depression and emptiness, particularly when offline; and, growing tolerance to the effects of being online among others (Grohol, 1997; Kandell, 1998; Adeyinka 2007 and Beida, 2008). Similarly, Holmes (1997) and Osunade (2003) argue that Internet use becomes dependency where it impairs on one or more major functional activities of an individual or group. In this wise, this study investigates the existence of Internet dependency among the students and find out whether or not it affects their academic performances.

### 1.1    *Research Problem*

There is paucity of knowledge with respect to time management for Internet dependent users and its implications on students' academic performance among university students in Nigeria. Most research work looks at the predominance of Internet use and its impact on psychosocial well-being, cognitive behavioural model and clinical or health care (Holmes, 1997; American Psychiatric Association, 2000; Davis, 2001; Jones, 2002 and Kaplan, 2002). Studies on Internet dependency and its implication on learning and academic related syndrome abound in literature. Apart from the study of Osunade (2003), all other studies retrieved from available literature have their scope outside Nigeria. Indeed, Internet over use and/or dependency in the student population has been linked to poor academic performance by prior studies such as Leon & Rotunda (2000), Griffiths (2001), Kubey, Lavin, and Barrows (2001). Unless an investigation is conducted among the student population in Nigeria, one would hardly concludes that the same empirical position hold true in Nigeria situation.

Therefore, this study aims to add to the body of management literature 'time management on internet among University students in Nigeria and its implications on academic performance'. Gaining an understanding of this observable fact is particularly important due to the student population's vulnerability to Internet dependency in Nigeria.

### 1.2    *Research Objectives*

The Objectives of the study include to:
1. determine the average hours per week students spend online
2. examine the differences in the population that reported vulnerable to Internet dependency
3. find the correlation between frequency of internet dependency and students' academic performance

### 1.3    *Research Hypothesis*

The Study hypothesised that (Ho): There is no significant relationship between Internet dependency and academic performance among University students in Nigeria.

### 1.4    *Justification of the Study*

Internet is relatively a new development, particularly in Nigeria with evolving dimensions and gaining irresistible interest of all and sundry. Indeed it is currently gaining tremendous penetration in the life of many Nigerians. Looking from the purview of available literature, fairly little research has been conducted about its use, misuse, overuse or the development of dependency. Undoubtedly, millions of Nigeria people access the internet on a daily basis and a good percentage are students. With the proliferation of the internet access through different routes such as wireless hubs, cellular phones, ipad and other digital devices that provide new and faster routes to the Internet, the problem of internet dependency is on the increase.

Therefore, if there are problems associated with Internet dependency, the student population is a good reference point for empirical investigation for such problems.

### 1.5    *Limitation of the study*

Survey research is among the most common research approaches in the management and behavioural sciences. The survey is often thought of as a current "snapshot" of the subject's present behaviours and attitudes (Cozby, 1993). The, generalisation of the results from the sample to the whole population may be limited. The instruments used in this study are primarily based on closed-ended questions for the CBC, and the Internet use questionnaires.

A closed-ended question was used because the responses are easier to code and options are the same for all respondents. But, closed ended only allows subjective rather than objective responses.

The lack of experimental control in surveys, the independent completion of the surveys by participants, and the overall inability to control the study environment serve as additional limitations of this design.

### 2.0    **Literature Review**

This section retrieves and reviews existing literature relative to the subject matter. It also discusses the theoretical issues that help in the realisation of the study objectives.

### 2.1    *Review of Existing Studies*

Many of the early literature on internet dependency are subjective in nature. The ancestry of the incident can be traced back to 1980's. Shotton (1991) reports computer dependency and determines the profile of the typical dependent computer users. His study reveals that users are psychologically dependent spending more hours using

the computer with difficulty in limiting the amount of time they spent. Griffiths (1998) defines Internet dependency as behavioural which include salience of the activity, changes in mood when engaged in online activities, an increasing tolerance for online activity, presence of withdrawal symptoms, and a tendency to relapse after the online activity is discontinued. Goldberg (1996) argues that the term Internet dependency is to describe individuals spending excessive amounts of time online to the point that it affects their wellbeing. Goldberg (1997) further adds that internet dependency includes: "maladaptive pattern of Internet use, leading to clinically significant impairment or distress as manifested by tolerance defined by either of the following:

- A need for markedly increased amounts of time on Internet to achieve satisfaction
- markedly diminished effect with continued use of the same amount of time on the Internet

The question one may ask is what is normal internet use, overuse or dependency? Various studies have reported wide range of average time spent online. Holmes (1997) recommends an average of 19 hours per week spent online. Benner (1997) argues that addicted users spent an average of 11 hours per week. The scholars used varying standards to determine the normal level of Internet use. Determining what level or type of Internet use is dependency is one of the greatest challenges and controversies related to level of Internet use till date. Grohol (1997) and Holmes (1997) observe that one of the major problems in examining internet dependence is the limited research into what is normal Internet use. The dearth of study to support and/or counter the notion that there is no ideal way to define normal Internet use in the average time spent online as reported in various studies, is one major research caveat in the hand of future research.

Another fundamental question one may ask is when does internet use become an abuse or lead to dependency? Grohol (1997) questions if it is really possible to define Internet overuse or abuse since most of the data on normal Internet use is preliminary in nature. However, Beida (2008) opines that internet dependency occurs when it gets in the way of the rest of users' life and there is compulsive use despite harm. It is the usual traits of a desire control disorder arose from the users' inability to control an urge to perform an act that is harmful to the users or others.

Ideally, users feel a growing sense of tension to commit an action with the feelings of gratification, pleasure, or relief. Indeed, positive feelings might be followed by guilt, regret or remorse. On this note, Anderson (2001) gave nine criteria for determining Internet dependency. These criteria are consistently supported in the literature such as Young and Rogers (1998), Armstrong, Phillips and Saling (2000) and Morahan-Martin and Schumacher (2000). The criterion include preoccupation with the Internet or Internet related activities; tolerance in terms of a need to spend increasing amounts of time online in order to achieve desired excitement; repeated attempts to control, reduce, or stop Internet use or to avoid a particular type of content; withdrawal symptoms including restless or irritability when attempting to cut down or stop Internet use; Internet use to escape problems or as a means of relieving dysphonic mood (e.g., helplessness, guilt, anxiety, depression); lying to family members, significant others, employers, or therapist to conceal extent of involvement with the Internet or type of content accessed online; committed illegal acts online (e.g., hacking into computer networks, copying files illegally, downloading illegal content, etc); jeopardised or lost a significant relationship, job or educational opportunity because of involvement with the Internet; and, guilt about the amount of time spent online and/ or guilt related to the activities engaged in online.

The use of the Internet has become very popular among university students. Indeed, students were among the first groups to utilise the Internet on a large scale, and among the first to experience problems associated with excessive Internet use (Beida, 2008). Jones (2002) argues that the current generation of students grew up at a time when the Internet was probably introduced into their lives at a very tender age.

The fact that students could get addicted to Internet dependency much like drug addiction and gambling has fuelled considerable controversy, debate, and ongoing research. However, existing literature has clearly indicates that users are experiencing negative consequences from the time they spent online (Young and Rogers, 1997; Davis, Smith, Rodrigue and Pulvers, 1999 and Anderson, 2001). Armstrong *et al* (2000) observe that little is known about the similarities and dissimilarities between Internet dependency and other types of dependencies like drug, alcoholic and gambling. Indeed, many university students may find the academic experience very stressful at the instance of Internet dependency. However, the paramount issue of managerial concern is how to manage Internet dependency among student population and to minimise its impact on academic performance. Macan, Shahani, Dipboye and Phillips (2013) opine that one potential coping strategy frequently offered by university counselling services is 'time management'.

Lay and Schouwenburg (2013) examine the relation of time management to trait procrastination and behaviour where time management was conceptualised in terms of setting goals and priorities, the use of mechanics and the perceived control of time. Macan *et al* (2013) observe that perceived control of time is the most predictive of time management behaviour scale. They argue that students who perceived the necessity of time management reported significantly greater evaluations of their performance, greater work and life satisfaction, less role ambiguity, less role overload, and fewer job-induced and somatic tensions. On this note, Mayo (2013) opines that prioritisation can help users to managing time wisely and minimising effects. Mindtools.com (2013) says that prioritisation requires making optimal use of time and resources and calm atmosphere and low stress level. Prioritisation can be achieved after reviewing your time constraints. The value of the task or its profitability is important in evaluating where it lands on a list of priorities (Thompson, 2013). Prioritising tasks will help Internet users manage time effectively such that academic activities are given adequate attention and sufficient time is given to other schedules. Lucier (2013) advises users to void unnecessary time traps that can turn from a minor inconvenience to a major problem. According to Mayo (2013), scheduling is crucial for effective time management. This is the process of looking at how much time is available and how it will be used to achieve desired goals.

## 2.2    *Theoretical Framework*
To achieve the objectives outlined this study, a search for theoretical pivot for Internet dependency is imperative. The theories that feature prominently for inclusion includes, Kandell's Theory of Student Internet Use, Goldberg's Internet Addiction Theory and Young's Internet Addiction Theor**y.** Goldberg (1997) theory suggested maladaptive pattern of Internet use and Young and Rogers (1998) theory suggested the use of DSM-IV definition of pathological gambling as a model for defining Internet dependency.

This study particularly leans on Kandell's Theory. The Kandell (1998) hypothesised that addictive behaviours served two purposes of students' concerns. First, the addictive behaviour acts as a coping tool for students who are not effectively handling the developmental challenges required at that stage of life.  The second factor contributing to the vulnerability is the increasing ease of access to the Internet global wise.

## 3.0    Methodology of the Study
The study adopted cross sectional research using two self report instruments; the internet use survey questionnaire and the Cognitive Behavioural Checklist (CBC) questionnaire.

## 3.1    *Population and Sampling*
The target population for this study is the entire university undergraduate students in Nigeria with a sample from university of Maiduguri. This target population was selected because it extensively used Internet (Jones, 2002) and may be at risk of Internet dependency (Kandell, 1998). The choice of University of Maiduguri is justified as a federal university with homogeneous characteristics with other federal universities in Nigeria and for admitting students from all states in Nigeria. Again, the university has a central cybercafé and each faculty also has a cybercafé where students gain easy access to Internet, twenty four hours daily (Kandell, 1998).

The sample size of 402 students was utilised in six strata based on faculties (arts and science, engineering, education, social and management, agricultural, medical and pharmaceutical sciences). A random sample of 67 students was selected from each of the six faculties and questionnaires were administered to elicit students' consents to the study. An 'exclusion criteria' was used to filtered out students that have never used the internet and an 'inclusion criteria' was used also to randomly sample student that consented to the study, and have spent at least one session of academic activity as a student.

## 3.2    Study Instruments
The questionnaire consisted of two instruments: The *Internet Use Survey (IUS)* obtained information about the student's faculty, class standing, average number of hours online per week, and Internet application used most frequently. The *Cognitive-Behavioural checklist (CBC)* on the other hand was adapted for this study to discriminate between addicted and non-addicted Internet users. The CBC was adopted for this study based on prior research and assessments of internet dependency (Young, 1998; Armstrong *et al (*2000); Morahan-Martin and Schumacher (2000) and Anderson, 2001). It uses true-false survey that assesses the nine (9) predicators given by Anderson (2001), earlier discussed under the literature section and that are most consistently reported and assessed in the literature on internet dependency (Young, (1998); Morahan-Martin and Schumacher (2000) and Anderson (2001).

### 3.3    *Method of Data Collection*

The researcher with the help of 5 research assistants administered the questionnaires to the respondents during a core course in their respective departments. The questionnaire was administered and collected immediately to dissuade exchange of ideas which could prejudice the result.

### 3.4    *Instruments of Data Analysis*

The statistical tools used in the study include Descriptive statistics (frequencies, cross tabulations) Bar Chart and Pearson correlation. The data was analysed with the use of Statistical Package for Social Sciences (SPSS 16).

### 4.0    **Data Presentation and Analysis**

From an initial sample of 402 participants, only 384 valid copies filled questionnaires were computed and analysed (response rate of 96%). A total of eighteen invalid copies of questionnaires were rejected and not included in this analysis for two important reasons:
(1) A total of 11 students skipped 4 or more of the screening questions
 (2) A total of 7 students spent less than 30minutes online in a week

### 4.1 **Comparing the Mean Time Spent Online and Mean CBC Symptoms Reported**

Table 1: *Comparison of internet dependent and non-internet dependent users*

| Internet Status | No. of Students N (%) | Mean time spent online per week | Mean number of CBC[a] symptoms reported |
|---|---|---|---|
| Addicted | 40 (10.4) | 6.22 | 6.68 |
| Non-Addicted | 344 (89.6) | 3.69 | 2.72 |
| Total | 384 (100) | 3.94 | 3.13 |

[a] Cognitive Behavioural Checklist

*Source: Computed from Field Data, 2012*

Table 4.1 shows students that are internet dependent spend almost twice more time online per week (6.22 hours) than non-internet dependent students (3.69). Internet dependent students are almost three times more likely to report symptoms (6.68) than non-internet dependent student (2.72).

### 4.2    **Comparison between Internet Dependency and Academic Performance**

Table 4.2: *Cross tabulation between internet dependency and academic performance*

| | | Internet Dependency Status | | |
|---|---|---|---|---|
| | | Non-dependent | Dependent | **Total** |
| **Academic** | High Academic performance[1] | 219 (74.5%) | 34 (91.9%) | 253(76.4%) |
| **Performance** | Low Academic performance[2] | 75 (25.5%) | 3 (8.1%) | 78 (23.6%) |
| **Total** | | 294 (100.0%) | 37 (100.0%) | 331 (100.0%) |

[1] Cumulative Grade Point Average $\geq$ 2.5, [2] Cumulative Grade Point Average < 2.5
*Source: Computed from Field Data, 2012*

Table 4.1 shows a cross tabulation between Internet Dependency status and academic performance scores. It reveals that 74.5% of non-internet addicted students had high academic performance, leaving only 25.5% with low academic performance. Similarly, 91.1% of Internet addicted students had high academic performance while 8.1% had low academic performance. This reveals that Internet use has positive relationship with academic performances among the student population.

## 4.3 Correlation of CBC Scores with Academic Performance
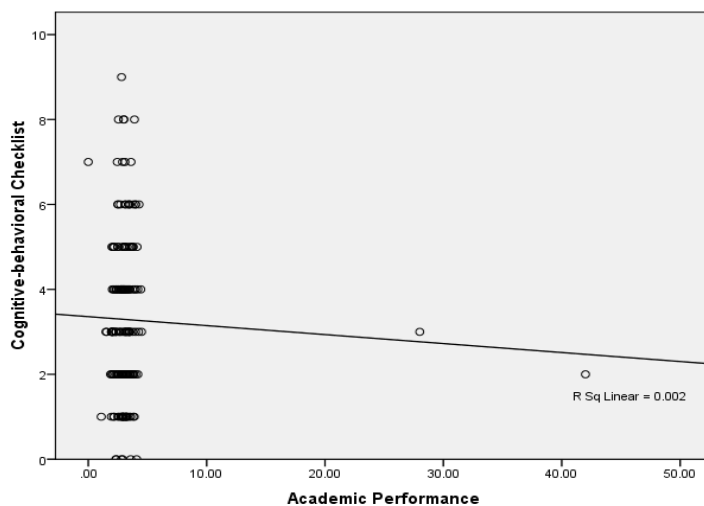Table 4.3: *Correlation between CBC scores with CGPA*

| | | Cognitive Behavioural Checklist | Academic Performance (CGPA)[1] |
|---|---|---|---|
| Cognitive Behavioural Checklist | Pearson Correlation | 1 | -.048 |
| | Sig. (2-tailed) | | .380 |
| | N | 384 | 331 |
| Academic Performance (CGPA)[1] | Pearson Correlation | -.048 | 1 |
| | Sig. (2-tailed) | .380 | |
| | N | 331 | 331 |

[1] Cumulative Grade Point Average
*Source: Computed from Field Data, 2012*

Table 4.3 reveals the result of correlation between CBC scores and academic performance. With Pearson (r = -0.048) and P = 0.380 it found a negative relationship between the number of symptoms reported on the cognitive behavioural checklist and academic performance accessed from the students cumulative grade point average (CGPA). This relationship is not statistically significant since P > 0.05. This relationship is depicted in the figure 4.1.

Figure 4.1: *A scatter plot of CBC scores with CGPA*



## 4.4 Correlation between CBC Scores and Hours Spent Online Per Week
Table 4.4: *Correlation between CBC scores and Hours Spent Online Per Week*

| | | CBC scores | Hours spent online per week |
|---|---|---|---|
| CBC scores | Pearson Correlation | 1 | .269 |
| | Sig. (2-tailed) | | .000 |
| | N | 384 | 372 |
| Hours spent online per week | Pearson Correlation | .269** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 372 | 372 |

*Source: Computed from Field Data, 2012*

The facts on table 4.4 reveals Pearson Correlation (r = 0.269) and P = 000. This shows that relationship is positive between the hours spent online per week and cognitive behavioural checklist. With P < 0.05, the test is statistically significant. Figure 4.2 represents this relationship graphically.

Figure 4.2: *A scatter plot of CBC scores with hours spent online per week*
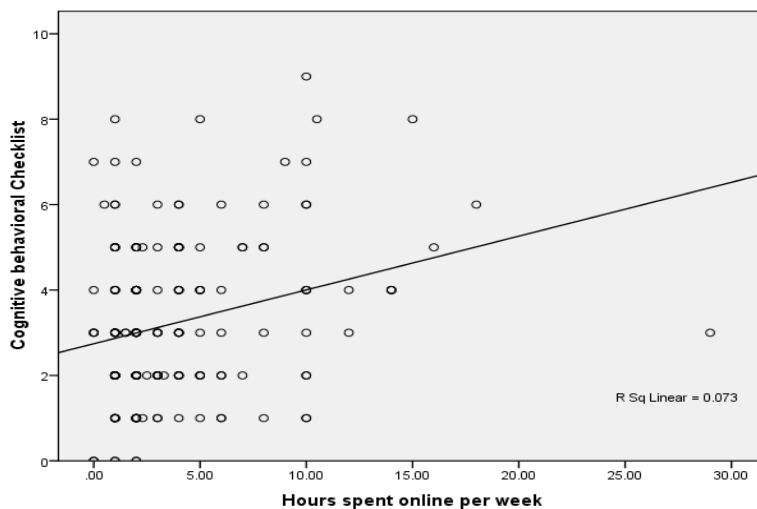


## 5.0    Findings, Conclusions and Recommendations

### 5.1    *Findings*

A total of 384 students were analysed in this study. Out of this sample, 344 (89.6%) were categorised as Negative for Internet dependency and 40 (10.4%) were categorised as "Positive for Internet dependency." Participants that positively endorsed four or more screener questions were categorised as "Positive for Internet dependency" and those who endorsed three or fewer screener questions were categorised as "Negative for Internet dependency." This result is consistent with previous studies of the student population (Kubey and Lavin, 2001= 9% and Anderson, 2001 = 9.8%). The four screener's items include 'current relationships', 'academic successes', 'getting enough sleep' and 'going late or missing classes'). Since certain items might be under-reported, it seems conceivable that many students could be experiencing Internet dependency with fewer than four self-reported symptoms. Consider that if the cut-off score of three is employed, the percentage of students considered positive for Internet dependency would have be 19.5% of the sample.

These results highlight a shortcoming of the Cognitive-Behavioural Checklist (CBC). Similarly, the CBC only measures the number of symptoms of Internet dependency reported by an individual, it fails to measure the severity of symptoms or problems caused by problematic Internet use (Davis *et al*, 2002).

This study found significant positive correlation between internet dependent symptoms reported and hours spent online. The mean number of hours online per week reported by Internet Addicted Users was $M = 6.22$ and Non-Internet Addicted Users *was M* = 3.69. The overall mean for the sample was 3.94 hours per week online. Similarly, Internet Addicted users also reported more symptoms in the CBC; M=6.68 as against non-Internet addicted users m=2.72 with an overall mean M=3.13

The study found a negative correlation between reported symptoms on the cognitive behavioural checklist and academic performance accessed from the student's cumulative grade point average (CGPA). This relationship was not statistically significant. These findings were consistent with other studies such as Adeyinka (2007) and Kubey, Lavin and Barrow (2001).

The study found no correlation between academic performance and hours spent online. Even though 46.5% of the Non internet Addicted users and 40% of the internet dependent user claim that web browsing/surfing were their most frequent online activity, the study did not distinguish if the students browsed the internet for academic activity or for leisure. Prior research has attempted to separate hours online for different purposes such as recreation, work, and school (Young, 1998; Davis, *et al*, 1999; Armstrong *et al*, 2000; Kubey, *et al*, 2001 and Anderson, 2001). The present study made no attempt to discriminate between different purposes of online time for hours reported due to the ability (and high probability) that most college Internet users multitask or move back and forth between online activities for school, work, and recreation quite frequently. For example, a student may have one window open each for social network, news, e-mails, and yet another window for topical search. Essentially, the student has the ability to be online for multiple purposes simultaneously, therefore rendering a self-reported time online for specific reasons relatively meaningless. Consequently, the present study asked only that students report the average number of hours they spend online per week.

## 5.2    *Conclusions*

The study concludes that one out of every ten student was found to be addicted to the internet. Positive endorsement of four or more of the nine prior symptoms was classified as Internet dependence. Internet dependence among students was found to be positively correlated with the amount of time they spent on the internet but negatively correlated with their academic performance in school. The findings of this study may be useful to management and IT professionals, academicians, researchers, government and students alike.

## 5.3    *Recommendations*

This study used CBC method and noted its limitations as discuss earlier in the findings section. Hence, other multidimensional methods of assessments of Internet dependence were noted in the available literature such as Kaplan's (2002) 'Generalised Pathological Internet Use Scale' and Davis, *et al* (2002) 'Online Cognitions Scale'. These two scales may possess greater potential for detecting both the presence and severity of internet dependency symptoms. These scales are recommended for future study in the evaluation of the level of Internet use.

Higher levels of Internet use have consistently been associated with reports of internet dependence (Young, 1998; Davis *et al*, 1999; Morahan-Martin and Schumacher, 2000 and Anderson, 2001). It should be noted that higher reports of Internet use do not necessarily translate into problematic use; however academic handlers and policy makers should evolve regulations to guide the extent of Internet usage to avert getting to the point of over dependency among student population.

Students in Nigerian universities and other institutions of higher learning need to be counselled on the danger of Internet over dependence or abuse.

The information generated by this study suggests a merit for further research on internet dependence. A replication of this study in the general population is highly recommended to determine if internet dependence exist in non-student population. Further research could also evaluate the relationship between internet addicted users with symptoms such as; stress, social solitude and other functioning activities of man.

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