Digital Media Usage and Prevalence of Internet Addiction among Undergraduate Students in South Africa

*Oghenere Gabriel Salubi[1], EM Ondari-Okemwa[2], FH Nekhwevha[3], Stella Oyediran-Tidings[4]

[1]University of the Western Cape, South Africa

[2]Machakos University, Kenya

[3]University of Fort Hare, South Africa

[4]Yaba College of Technology, Nigeria

*Email: *osalubi@uwc.ac.za*

Abstract

The use of Internet and digital media in the academic sector has significantly improved knowledge creation. The Internet has particularly proven itself to be a valuable resource in the enhancement of knowledge production and dissemination. The purpose of the study on which this chapter is based was to establish how excessive non-academic use of the Internet detrimentally affects daily lives of undergraduate students. A survey was conducted of 390 university undergraduate students, comprising mainly of adolescents or young adults, who were selected using stratified random sampling at two South African universities. The universities selected were Fort Hare and Nelson Mandela. Data was collected using the Modified Internet Addiction Test for Undergraduates (MIATU), a modification of Internet Addiction Test (IAT) questionnaire. 282 (72.3%) of the respondents indicated that they make use of the Internet daily with 34.8% spending more than 10 hours. More than 60% have access to at least two electronic devices. Most of the respondents stayed online longer than intended ($\bar{x}$ 2.88), slept less at night due to Internet use ($\bar{x}$ 2.63) and hence spent less time studying owing to Internet surfing ($\bar{x}$ 2.27). Furthermore, the amount of time spent on the Internet had a significant relationship with the level of influence the use of the Internet had on respondents ($\beta = 0.250$, $t = 4.850$, $p<0.05$). The findings are indications that the excessive amount of time spent on the Internet served as a distraction from school work; a situation that disadvantaged students in academic productivity. These findings suggest that the uncontrolled use of new media is both a hazard and a potential danger to academic productivity. This is the first study in South Africa that empirically investigates Internet use pattern by undergraduate students, Internet use rate and problematic Internet use among undergraduate students.

Keywords: *Internet addiction, Internet use, Undergraduate Students, Problematic Internet use, South Africa.*

1 Introduction

The Internet has changed the way people communicate, study, access and use information and information resources. It is perhaps one of the most noteworthy technological advancements of the late 20th century and has made communication and information sharing easier and faster. The academic environment has not been left out in this digital revolution as the introduction of the Internet into the academic world has greatly improved the advancement of knowledge frontiers. According to Kandell (1998), while academia always has been in the forefront of Internet use, the primary focus had been on faculty research and communication. By providing dissemination of, and access to, enormous academic resources in almost all fields of human endeavour throughout the world, the Internet has become an invaluable tool for learning, teaching and research in institutions of learning (Ojedokun and Owolabi, 2003). Widespread Internet availability can substantially benefit people by enhancing their access to a broad range of information while creating an avenue for social communication and entertainment (Byun et al., 2009).

Internet use has become a common practice across generations (Anunobi, 2006), making it an indispensable part of modern life in accordance with the information technologies that have been growing rapidly (Ozkisi and Topaloglu, 2015). Askoy (2012) opines that the reason for the rapid growth is the global availability of the Internet which significantly makes it different from other information media. It is reported that ease of work and time-saving are the reasons for Internet use among students (Bashir, Mahmood and Shafique, 2008; Deniz and Geyik, 2015). According to a study on North American Colleges and Universities, over 80% of faculty and administration believe that web-based technology is a key contributor to student success. The study also noted that 62% of faculty in the USA and Canada use the Internet to prepare coursework; 56% use the web to supplement textbooks; while 51% use it to ensure up-to-date course content (Deniz and Geyik, 2015). A study by Ruzgar (2005) on the purpose of Internet use and learning via Internet among Turkish college students concluded that the Internet has become an integral part of college life and its usage is almost 100% among students.

This study argues that non-academic related use of the Internet could have a detrimental effect on the daily life of undergraduate students

2 Research Objective and Questions

The aim of this chapter is to ascertain the extent of Internet use and the prevalence of Internet addiction among undergraduate students in the Eastern Cape Province, South Africa. The specific objectives of the study on which the chapter is based were to:

1. Identify the Internet use rate of undergraduate students in universities in the Eastern Cape;

2. Describe the Internet use pattern of undergraduate students in universities in the Eastern Cape; and

3. Indicate how the Internet use pattern and Internet use rate affect undergraduate students in universities in the Eastern Cape.

In order to achieve the above research aim, the following research questions were raised based on the research objectives:

1. How much time do undergraduate students spend utilising the Internet?

2. What are the Internet use patterns of undergraduate students in universities in the Eastern Cape?

3. How does the Internet use pattern and Internet use rate affect undergraduate students in universities in the Eastern Cape?

Two null hypotheses were tested in this study as shown below:

$H_0 1$: There is no significant relationship between the amount of time spent on the Internet and increased level of influence of Internet use.

$H_0 2$: There is no significant relationship between Internet use pattern and an increase in the level of influence of Internet use.

3 Methodology

A survey research design was utilised for the study with data being collected and analysed using both qualitative as well as quantitative research methods. Questionnaires and focus group discussions were employed to collect data from undergraduate students at two selected universities in the Eastern Cape Province, South Africa: University of Fort Hare (UFH) and Nelson Mandela University (NMU). Undergraduate students enrolled for a 3 or 4-year Bachelor's degree programmes were included in the population of the study. Data was collected between February and April 2016 and first year students were excluded because at the time of collecting data, they had barely spent a semester in their respective campuses.

The study utilised the stratified sampling technique. Five strata were created using faculties/degree programmes common to both universities. The strata that were constituted are as follows: Stratum 1: Faculty of Social Science & Humanities/Arts (SSH/Arts); Stratum 2: Faculty of Science & Agriculture; Stratum 3: Faculty of Law; Stratum 4: Faculty of Education; and Stratum 5: Faculty of Management & Commerce/ Economic Science (M&C/ Eco. Sci.).

The total number of registered students for the 2015 academic session at both UFH and NMU was 11,416 undergraduate students. The institutional planning offices of both universities assisted the researchers with the complete list of registered students for the academic session. The minimum representative sample size for the study was determined to be 372. This was achieved using the Raosoft® sample calculator, with an error margin of 5%, a significant level of 95%, a response distribution of 50%, and an estimated population size of 11,416. The least effective sample size was calculated to establish the minimum number of participants that could adequately represent the population of the study.

Young's Internet Addiction Test questionnaire was modified to determine the influence of Internet use on respondents. Six focus group discussion sessions consisting of between five to eight discussants were carried out. 450 questionnaires were administered, and 412 were retrieved. Only 390 of the retrieved questionnaires were usable, giving a response rate of 86.7%. A test-retest reliability method using Cronbach Alpha was adopted to determine internal consistency, reliability and overall reliability of each of the variables identified in the study. The coefficient alpha for the scale, as a whole, was 0.90. Ethical guidelines for human subjects were ensured by submitting the research proposal and research instruments to the Faculty Research and Higher Degrees Committee, University of Fort Hare Research and Ethics Committee and The Research and Ethics Committee at the Nelson Mandela University. Ethical clearance certificates were received from both universities.

4 Results and Discussion

Respondents were asked to indicate how much and how often they make use of the Internet.The Internet use pattern of respondents showed that 282 (72.3%) of the respondents use the Internet daily, 96 (24.6%) use it every other day while 12 (3.1%) use the Internet occasionally. The use of the Internet has become essential for students because it is a daily necessity for academic work (Bidin, Shamsudin, Asraf, and Sharif, 2011). Previous studies (Odell, Korgen, Schumacher and Delucchi, 2000; Otunla, 2013; Waithaka, 2013) have also reported daily use of the Internet by students. Internet

usage has also been reported to be more prevalent among younger and more educated people (Bashir et al., 2008). This result is in contrast with findings from Adekunmisi, Ajala and Iyoro (2013) where results revealed that most (70%) of the respondents used the Internet weekly. The researchers attributed this factor to the high cost of accessing the Internet in Nigeria as the majority of the Internet centres were privately owned by individuals whose aim was purely for profit (Adekunmisi et al., 2013). A report by the Pew Research Center (2016) stated that while Internet access has been rising in emerging and developing nations, those in developed world who have Internet access are voracious users. In addition, the report revealed that roughly three-quarters of adult Internet users across the 40 countries surveyed in 2015 say that they use the Internet at least once a day, with majorities in many countries saying that they access the web "several times a day" (Pew Research Center, 2016).

Respondents were requested to specify how much time they spent accessing the Internet daily. The findings revealed that 56 (14.6%) of the participants spend less than an hour accessing the Internet daily, 98 (25.5%) spend between 1-3 hours while majority of the respondents 132 (34.4%) spend 10 hours or more daily accessing the Internet. Qualitative results from the focus group sessions also indicated that respondents spend an average of 4-6 hours daily using the Internet. One respondent reported that:

> *"Just think of how much you spend on your phone, you just keep going and going, …six hours minimum".*

This result amplifies the research findings by Wood (2015) which established that Internet use among female college students was found to be an average of 10 hours a day on their cell phones while male students spent nearly eight hours.

The activities that respondents engage in while using the Internet were also polled. Various activities were grouped together into academic, communication, entertainment, and social networking uses. Participants were asked to indicate how much they utilised these services while using the Internet.

Table 1: Internet use pattern of respondents

Academic						
	Never (%)	Rarely (%)	Weekly (%)	Twice weekly (%)	Daily (%)	Mean
Take online lectures and classes	174 (44.6)	97 (24.9)	47 (12.1)	21 (5.4)	45 (11.5)	2.13
Reading E-books	121 (31.0)	138 (35.4)	64 (16.4)	23 (5.9)	33 (8.5)	2.23
Downloading journal articles	75 (19.2)	157 (40.3)	95 (24.4)	33 (8.5)	22 (5.6)	2.40
Looking up reference materials	20 (5.1)	109 (27.9)	126 (32.3)	49 (12.6)	81 (20.8)	3.16
Information surfing for study	11 (2.8)	44 (11.3)	121 (31.0)	49 (12.6)	156 (40.0)	3.77
Assignments	3 (0.8)	64 (16.4)	144 (36.9)	75 (19.2)	98 (25.1)	3.52
Research	14 (3.6)	76 (19.5)	123 (31.5)	62 (15.9)	102 (26.2)	3.43
Communicating						
Send and receive emails	7 (1.8)	40 (10.3)	58 (14.9	33 (8.5)	251 (64.4)	4.24
Make and receive calls	57 (14.6)	65 (16.7)	33 (8.5)	22 (5.6)	206 (52.8)	3.67
Video chatting	166 (42.6)	136 (34.9)	22 (5.6)	28 (7.2)	32 (8.2)	2.02
Meeting new friends	74 (19.0)	150 (38.5)	65 (16.7)	24 (6.2)	74 (19.0)	2.67
Keeping in touch with friends	7 (1.8)	26 (6.7)	51 (13.1)	22 (5.6)	278 (71.3)	4.40
Entertainment						
Play and download music	25 (6.4)	89 (22.8)	65 (16.7)	50 (12.8)	160 (41.0)	3.59
View and download videos	23 (5.9)	74 (19.0)	74 (19.0)	49 (12.6)	170 (43.6)	3.69
Play podcast	178 (45.6)	108 (27.7)	27 (6.9)	24 (6.2)	42 (10.8)	2.06
Watching online TV	122 (31.3)	92 (23.6)	46 (11.8)	25 (6.4)	103 (26.4)	2.73
Social Networking						
Facebook, Twitter, Myspace	14 (3.6)	30 (7.7)	31 (7.9)	19 (4.9)	295 (75.6)	4.42
Instant messaging (Whatsapp, BBM)	19 (4.9)	8 (2.1)	14 (3.6)	2 (0.5)	344 (88.2)	4.66
Talking in chat room	210 (53.8)	85 (21.8)	11 (2.8)	16 (4.1)	63 (16.2)	2.06
Create or maintain a personal blog	266 (68.2)	74 (19.0)	16 (4.1)	8 (2.1)	19 (4.9)	1.54

It has been acknowledged that information needs are difficult to study empirically. Thus, most user studies focus on information seeking activities rather than on actual information needs (Case, 2002). Results from the study revealed that Internet use for communication purposes ranked first ($\overline{x}$ 3.4), followed by social networking ($\overline{x}$3.17), entertainment ($\overline{x}$ 3.02) with academic purposes in the fourth place ($\overline{x}$ 2.95).

Jones (2002) reported that undergraduate Internet users are heavier users of instant messaging and online chat; 76% of them make use of electronic resources for entertainment such as chatting and social networking, download films, music or playing games and shopping. Other studies such as Deniz and Geyik (2015) revealed that searching for homework or projects and getting knowledge for academic purposes via Internet is was of less priority than playing games, shopping online or surfing the Internet. The researchers asserted that information technologies and Internet play a key role in the daily life of university students but most of the students do not use the Internet for course-related readings and academic research needs (Deniz and Geyik, 2015).

As earlier reported, academic use which is the primary purpose for providing free campus-wide Internet access, did not rank first among undergraduate students' Internet use pattern. Hence, Young (1998) Internet addiction test questionnaire was modified to measure the influence of the Internet as well as accurately interpret its impact on the everyday life of the respondents.

Table 2: Internet use influence on Undergraduate students' routine

Situations	Never (%)	Rarely (%)	Very often (%)	Always (%)	Mean
Go late for classes or other appointments because I was spending time on the internet	170 (43.6)	142 (36.4)	62 (15.9)	10 (2.6)	1.77
Less sleep at night because of using the internet	51 (13.1)	100 (25.6)	178 (45.6)	60 (15.4)	2.63
Stay online longer than intended	33 (8.5)	78 (20.0)	179 (45.9)	99 (25.4)	2.88
Missed a meal rather than interrupt use of the internet	164 (42.1)	121 (31.0)	74 (19.0)	30 (7.7)	1.92
Spent less time studying due to internet surfing	81 (20.8)	149 (38.2)	130 (33.3)	28 (7.2)	2.27
Reply chats or surf the internet while attending a lecture	92 (23.6)	131 (33.6)	119 (30.5)	45 (11.5)	2.30
Enjoy excitement of the internet more than spending time with friends in person	115 (29.5)	147 (37.7)	91 (23.3)	35 (9.0)	2.12
Try to spend less time on the internet and fail	119 (30.5)	107 (27.4)	114 (29.2)	45 (11.5)	2.22
Spend study time surfing the internet for non-academic purposes	74 (19.0)	113 (29.0)	164 (42.1)	34 (8.7)	2.41
When the internet is down, I usually feel bored, empty and joyless	90 (23.1)	93 (23.8)	103 (26.4)	101 (25.9)	2.56
Check emails Facebook before something else that I need to do online	26 (6.7)	57 (14.6)	152 (39.0)	154 (39.5)	3.12

Source: Research data

From the results in Table 2, the majority of the respondents ($\bar{x}$ 3.12) check their emails and Facebook account before anything else that they need to do on the Internet, stay online longer than intended ($\bar{x}$ 2.88), sleep less at night because of Internet use ($\bar{x}$ 2.63) and usually feel bored, empty and joyless when the Internet is down ($\bar{x}$ 2.56). Other notable influences the use of the Internet has on undergraduate students are: they spend study time surfing the Internet for non-academic purposes ($\bar{x}$ 2.41), reply to chats or surf the Internet while attending a lecture ($\bar{x}$ 2.30). It also emerged that many of the respondents try to spend less time on the Internet and fail ($\bar{x}$ 2.22).

The findings also revealed that 238 (61%) of the respondents very often/always have less sleep at night because they spend time using the Internet. This finding concurred with similar studies where inadequate sleep was found to have a negative effect on the productivity of students academically (Akin and Iskender, 2011; Asdaque, Khan, Asad and Rizvi, 2010; Chong Guan, Isa, Hashim, Pillai and Harbajan Singh, 2012; Qiaolei Jiang, 2014). Most undergraduate students 278 (71%) noted that they very often/always stay online longer than intended, while 198 (50%) admitted spending study time surfing the Internet for non-academic purposes. Furthermore, 158 (40%) of the respondents spend less time studying due to Internet surfing and also try to spend less time on the Internet and fail.

Wood (2015) reported that approximately 60% of college students admit to cell phone addiction, and some indicated they get agitated when it is not in sight. Morahan-Martin (2005) established that Internet abuse resulted in symptomatic problems such as depression, sexual disorders, or loneliness. Park et al. (2011) established that Internet-addicted group had comprehension sub-item scores that were significantly lower than those of the non-addicted group. The level of Internet addiction was significantly linked to academic performance decrement among young people in China, as reported by Jiang (2014).

Other forms of distractions noted in this study among respondents were the divided attention of replying of chats or surfing the Internet while attending a lecture (42%). As many as 78% of the respondents check their emails or Facebook walls before anything else that they need to do online. A respondent during the focus group discussion session said:

> *"Most times you want to read your books, and you log on to social media first, you could just spend the entire time on Facebook and before you know it, you're tired and want to sleep".*

It can be inferred from Table 2 that the Internet has a negative influence on undergraduate students in many ways. Due to the Internet's popularity, most of these negative influences could go unchecked by Internet users. For example, a study of relationship problems among Internet users revealed that 53% of Internet addicts had serious relationship problems that led to marital discord, separation and even divorce (Young, 1998). This is contrary to findings by Deniz and Geyik (2015) who reported that undergraduate Internet users in Turkey do not consider themselves addicted to the Internet despite the long hours they spend online because they can go offline whenever they wish.

The following null hypotheses were tested in this study:

> $H_0$1: There is no significant relationship between the amount of time spent on the Internet and increased level of influence of Internet use

A regression analysis was carried out to predict whether the amount of time spent on the Internet has any influence on undergraduate students' routines. The result is presented below.

Table 3: ANOVA for Internet use influence and amount of time spent

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1023.674	1	1023.674	23.519	.000[a]
Residual	15364.174	353	43.525		
Total	16387.848	354			

Source: Research data

From Table 3, the analysis of variance (ANOVA) test shows that *F = 23.519, df = 354 and p = 0.000*. Since *p-value <*
0.05, this shows that the amount of time spent on the Internet has a significant relationship with the level of influence
the use of the Internet has on undergraduate students.

Table 4: Regression coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	22.498	.832		27.028	.000
Amount of time spent on the Internet	1.129	.233	.250	4.850	.000

Source: Research data

The result from Table 4 above shows the regression coefficient for the amount of time spent using the Internet and the
influence of Internet use. The result indicates that for every unit increase in the amount of time spent using the Internet,
there is a 1.129 increase in the level of influence of Internet usage *(B = 0.250, t = 4.850, p<0.05)*. From the above result,
it is inferred that the higher the amount of time undergraduate students spend using the Internet, the higher the negative
influence of the Internet (negative influences: less sleep at night, stay online longer than expected, inability to hold back
on spending more time on the Internet, among others) on their daily routines.

H_02: There is no significant relationship between Internet use pattern and an   increase in the level of influence of
Internet use

This hypothesis was to measure whether Internet use pattern predicts the level of influence Internet usage has among
undergraduate students.

Table 5: ANOVA for Influence of Internet use and Internet use pattern

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2063.289	4	515.822	12.914	.000[a]
Residual	12062.503	302	39.942		
Total	14125.792	306			

Source: Print out of a table derived from the data and findings of the study

From Table 5, the analysis of variance (ANOVA) test shows that *F = 12.914, df = 306 and p = 0.000*. Since *p-value < 0.05,*
this reveals that there is a joint significant relationship between Internet use pattern of undergraduate students (Internet
use for social networking, academic, communication, and entertainment) and the level of influence the Internet has on
their daily routine.

Table 6: Regression coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	16.724	2.265		7.382	.000
Academic	-.138	.074	-.103	-1.855	.065
Communication	.096	.108	.054	.892	.373
Entertainment	.331	.097	.212	3.420	.001
Social Networking	.514	.137	.224	3.750	.000

Source: Research data

The result from Table 6 shows that the regression coefficient for relationship between Internet use pattern (internet use
for social networking, academic, communication, and entertainment) and the influence of Internet use. They indicate
that for every unit increase in academic use of the Internet, there is a 0.138 decrease in the level of influence that the
Internet has on undergraduate students' daily routine. For every unit increase in social networking use of the Internet,
there is a 0.514 increase in the influence of Internet use on undergraduate students' daily routine. The same applies to

communication use at 0.096 increase and entertainment use at 0.331.

The results show that entertainment and social networking have a statistically significant positive effect on influence of internet use. Therefore, the second hypothesis of the study significant is rejected. It is concluded that Internet use pattern, as measured by entertainment and social networking, has a statistically significant relationship with Internet use influence. On the other hand, the effect of academic use of the Internet is negative and not statistically significant (as it is only statistically significant only at 10% level). It can be concluded from the result that academic use of the Internet decreases negative influence of Internet use on undergraduate students' daily routine although it is not statistically significant. Communication, entertainment and social networking use of the Internet increase the negative influence of the Internet on undergraduate students' daily routine with communication being not statistically significant.

5 Conclusion

This study established that although the use of the Internet is essential in the academic community, uncontrolled use of the Internet for non-academic and/or non-work related purposes can be detrimental to students' wellbeing. As many as 104 (26.7%) of the respondents said they very often/always missed a meal rather than interrupt the use of the Internet; and a staggering 126 (32.3%) said they very often/always enjoy the excitement of the Internet more than spending time with friends in person (see Table 2). Previous reports have identified these effects of Internet use to be a sign of Internet addiction (Jiang and Leung, 2012; Lan and Lee, 2013; Roberts, Yaya and Manolis, 2014; Stavropoulos, Kuss, Griffiths, and Motti-Stefanidi, 2015).

Several factors contribute to the academic wellbeing of learners, including diet, sleep and state of health (Coniglio, Sidoti, Pignato, and Giammanco, 2012; Jiang and Leung, 2012). The results from the study revealed that many of the students do not have control over the amount of time they spend on the Internet. Their time was spent mainly on social networking and communication purposes rather than academic purposes and consequently faced academic difficulties. Other negative influences identified in this study include spending less time studying due to Internet surfing (230 or 59%) and replying to chats or surfing the Internet while attending a lecture (223 or 57.2%). These may consequently increase students' academic challenges. According to Onwuegbuzie and Jiao, (1998) academic difficulties have led many students to drop out of school. These results confirm addictive behaviours among many undergraduate students in the population sample using Young (2008) assessment criteria of work related/family difficulties as a result of Internet use.

The study advances the position that the more time undergraduate students spend on the Internet, the higher the level of excessive Internet use influence. Internet use for academic purposes was found to decrease Internet use influence on undergraduate students. Similarly, the use of the Internet for entertainment and social networking purposes was found to increase the level of Internet use influence. Whereas Internet use has been reported to enhance academic productivity (Bidin et al., 2011; Ojedokun and Owolabi, 2003), compulsive use of the Internet could also lead to dismal academic performance and a decline in academic completion through put. The choice of activity that undergraduate students engage in on the Internet can also be concluded to have increased the negative influences resulting in the use of the Internet. Prolonged use of the Internet on academic or work related activities cannot be referred to as Internet addiction as this use contributes to achieving a productive means or tasks being carried out on the Internet.

6 References

Adekunmisi, S. R., Ajala, E. B., & Iyoro, A. O. (2013). Internet Access and Usage by Undergraduate Students: A Case Study of Olabisi Onabanjo. *Library Philosophy and Practice (E-Journal)*, 1–10.

Akin, A., & Iskender, M. (2011). Internet Addiction and Depression, Anxiety and Stress. *International Online Journal of Educational Sciences*, *3*(1), 138–148.

Anunobi, C. V. (2006). Dynamics of internet usage: A case of students of the Federal University of Technology Owerri (FUTO) Nigeria. *Educational Research and Reviews*, *6*, 192–195.

Asdaque, M. M., Khan, M. N., Asad, S., & Rizvi, A. (2010). Effect of Internet on the Academic Performance and Social Life of University Students in Pakistan. *Journal of Education*, (1999), 21–27.

Askoy, R. (2012). *Internet Ortamında Pazarlama*. Ankara: Seckin Yayınları.

Bashir, S., Mahmood, K., & Shafique, F. (2008). Internet Use Among University Students: A Survey in University of the Punjab, Lahore. *Pakistan Journal of Library & Information Science*, *2008*(9), 49–65.

Bidin, Z., Shamsudin, F. M., Asraf, M. H. M. F., & Sharif, Z. (2011). Factors Influencing Students' Intention to Use Internet for Academic Purposes. *SSRN Electronic Journal*, 0–28. https://doi.org/10.2139/ssrn.1867902

Byun, S., Ruffini, C., Mills, J. E., Douglas, A. C., Niang, M., Stepchenkova, S., … Marina Blanton. (2009). Internet addiction: Metasynthesis of 1996–2006 quantitative research. *CyberPsychology & Behavior2*, *12*(2), 203–207. https://doi.org/10.1089/cpb.2008.0102 PMID: 19072075

Case, D. O. (2002). *Looking for information: a survey of research on information seeking needs, and behaviour*. Amsterdam: Academic Press.

Chong Guan, N., Isa, S. M., Hashim, a. H., Pillai, S. K., & Harbajan Singh, M. K. (2012). Validity of the Malay Version of the Internet Addiction Test: A Study on a Group of Medical Students in Malaysia. *Asia-Pacific Journal of Public Health*. https://doi.org/10.1177/1010539512447808

Coniglio, M. A., Sidoti, E., Pignato, S., & Giammanco, G. (2012). HEALTH A pilot study of Internet usage patterns in a group of Italian university students, *9*(2), 67–72.

Deniz, M. H., & Geyik, S. K. (2015). An Empirical Research on General Internet Usage Patterns of Undergraduate Students. *Procedia - Social and Behavioral Sciences*, *195*, 895–904. https://doi.org/10.1016/j.sbspro.2015.06.369

Jiang, Q. (2014). Internet addiction among young people in China: Internet connectedness, online gaming, and academic performance decrement. *Internet Research*, *24*(1), 2–20. https://doi.org/10.1108/IntR-01-2013-0004

Jiang, Q., & Leung, L. (2012). Effects of Individual Differences, Awareness-Knowledge, and Acceptance of Internet Addiction as a Health Risk on Willingness to Change Internet Habits. *Social Science Computer Review*, *30*(2), 170–183. https://doi.org/10.1177/0894439311398440

Jones, S., & Madden, M. (2002). *The Internet goes to college: How students are living in the future with today's technology*. (Vol. 71). Washington, DC.

Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *CyberPsychology & Behavior*, *1*(1), 11–17. https://doi.org/10.1089/cpb.1998.1.11

Lan, C. M., & Lee, Y. H. (2013). The predictors of internet addiction behaviours for Taiwanese elementary school students. *School Psychology International*, *34*(6), 648–657. https://doi.org/10.1177/0143034313479690

Morahan-Martin, J. (2005). Internet Abuse: Addiction? Disorder? Symptom? Alternative Explanations? *Social Science Computer Review*, *23*(1), 39–48. https://doi.org/10.1177/0894439304271533

Odell, P. M., Korgen, K. O., Schumacher, P., & Delucchi, M. (2000). Internet Use Among Female and Male College Students. *CYBERPSYCHOLOGY & BEHAVIOR*, *3*(5), 855–862.

Ojedokun, A. A., & Owolabi, E. O. (2003). Internet access competence and the use of the Internet for teaching and research activities by University of Botswana academic staff. *African Journal of Library, Archives and Information Science*, *13*(1), 43–53.

Onwuegbuzie, A. J., & Jiao, Q. G. (1998). The relationship between library anxiety and learning styles among graduate students: Implications for library instruction. *Library & Information Science Research*, *20*(3), 235–249. https://doi.org/10.1016/S0740-8188(98)90042-1

Otunla, A. O. (2013). Internet Access and Use among Undergraduate Students of Bowen University Iwo, Osun State, Nigeria. *Library Philosophy and Practice (E-Journal*. Retrieved from http://digitalcommons.unl.edu/libphilprac/964

Ozkisi, H., & Topaloglu, M. (2015). The university students' knowledge of Internet applications and usage habits. *Procedia - Social and Behavioral Sciences*, *182*, 584–589. https://doi.org/10.1016/j.sbspro.2015.04.785

Park, M. H., Park, E. J., Choi, J., Chai, S., Lee, J. H., Lee, C., & Kim, D. J. (2011). Preliminary study of Internet addiction and cognitive function in adolescents based on IQ tests. *Psychiatry Research*, *190*(2–3), 275–281. https://doi.org/10.1016/j.psychres.2011.08.006

Pew Research Center. (2016). *Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies. Pew Research Center*. https://doi.org/10.1017/CBO9781107415324.004

Roberts, J. A., Yaya, L. H. P., & Manolis, C. (2014). The invisible addiction: cell-phone activities and addiction among male and female college students. *Journal of Behavioral Addictions*. https://doi.org/10.1556/JBA.3.2014.015

Ruzgar, N. S. (2005). A Research on the Purpose of Internet Usage and Learning via Internet. *The Turkish Online Journal of Educational Technology*, *4*(4).

Stavropoulos, V., Kuss, D., Griffiths, M., & Motti-Stefanidi, F. (2015). A Longitudinal Study of Adolescent Internet Addiction: The Role of Conscientiousness and Classroom Hostility. *Journal of Adolescent Research*. https://doi.org/10.1177/0743558415580163

Waithaka, M. W. (2013). *Internet use among University Students in Kenya: A Case Study of the University of Nairobi*. University of South Africa.

Wood, J. (2015). College Students in Study Spend 8 to 10 Hours Daily on Cell Phone. Retrieved February 8, 2017, from https://psychcentral.com/news/2014/08/31/new-study-finds-cell-phone-addiction-increasingly-realistic-possibility/74312.html

Young, K. S. (1998). *Caught in the Net: How to recognize the signs of Internet addiction and a winning strategy for recovery*. New York, NY: John Wiley & Sons.

Young, K. S. (2008). Assessment of Internet addiction. *The Center for Internet Addiction Recovery.*, 1–21. Retrieved from http://www.icsao.org/fileadmin/Divers_papiers/KYoung-internetaddiction5.pdf

About the Authors

Oghenere Gabriel Salubi *(PhD)* is a Lecturer at the Department of Library and Information Science, University of the Western Cape. He is concerned with the maximisation and productive utilisation of the new media among digital natives. His research interests revolve around human-computer interaction, digital humanities, information behaviour, digital literacy and knowledge organisation.

Prof. Ezra Ondari-Okemwa is a professor of Knowledge Management and the Registrar (Academic and Student Affairs) at Machakos University, Kenya. His research areas include knowledge management, digital literacy and scholarly publishing in Sub-Saharan Africa.

Prof. Fhulu Nekhwevha is an Associate professor of Sociology and Deputy Dean, Teaching Learning and Community Engagement at the Faculty of Social Science and Humanities, University of Fort Hare. His research interests are in the areas of sociology of education, social media and indigenous knowledge.

Dr. Stella Oyediran-Tidings has over two decades of experience as a librarian and is presently a Deputy Polytechnic Librarian at the Yaba College of Technology, Lagos, Nigeria. Her areas of research include information access, school libraries and Information Literacy.