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

Oghenere Salubi, Ndakasharwa Muchaonyerwa, Fhulu Nekhwevha
University of Fort Hare
South Africa
Osalubi@ufh.ac.za
NMuchanyerwa@ufh.ac.za
FNekhwevh@ufh.ac.za

ABSTRACT: Internet and digital media for educational purposes have significantly improved knowledge creation. The Internet has proven itself to be a valuable resource in the enhancement of knowledge production and dissemination. The purpose of the study was to establish how excessive non-academic use of the Internet detrimentally affects undergraduate students' daily lives. Using survey design, a total of 390 University undergraduate students comprising mainly adolescents/young adults were selected using stratified random sampling at two South African universities, namely Fort Hare and Nelson Mandela. Data were collected using the Modified Internet Addiction Test for Undergraduates (MIATU), a modification of Internet Addiction Test (IAT) questionnaire. 282 (72.3%) use 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 (x 2.88), slept less at night due to Internet use (x 2.63) and hence spent less time studying owing to Internet surfing (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 ($B = 0.250$, $t = 4.850$, $p < 0.05$). The findings are indications that the excessive amount of time spent on the Internet served as a distraction from school work, a situation that put students at a disadvantage in as far as academic productivity was involved. These findings clearly suggest that the uncontrolled use of new media is both a hazard and a potential danger to academic productivity.

Keywords: Internet Addiction, Internet Use, Problematic Internet Use, Undergraduate Students, South Africa

Received: 21 April 2018, Revised 5 June 2018, Accepted 13 June 2018

© 2018 DLINE. All Rights Reserved

DOI: 10.6025/ijwa/2018/10/4/127-136

1. Introduction

The Internet has changed the way we communicate, study, access, use information and information resources. It is perhaps one

of the most noteworthy technological advancements of the late 20th century, thereby making communication and information sharing easier and faster than it has been. This study argues that non-academic related use of the Internet could have a detrimental effect on undergraduate students' daily life.

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 & 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 our modern life in accordance with the information technologies that have been growing rapidly (Ozkisi & 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 of Internet use among students (Bashir, Mahmood, & Shafique, 2008; Deniz & Geyik, 2015). According to a study on North American Colleges and Universities, over 80% of Faculty administration believe that web based technology is a key contributor to student success. The study also noted that 62% of faculties 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 & 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.

2. Research Objective/Questions

The aim of this paper was to ascertain the amount 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 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.
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?

3. Research Hypothesis

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

H₀1: There is no significant relationship between the amount of time spent on the Internet and increased level of influence of Internet use.

H₀2: There is no significant relationship between Internet use pattern and an increase in the level of influence of Internet use.

4. Methodology

The survey research design was utilised for the study with data collected and analysed both using both qualitative as well as quantitative research methods. Questionnaires and focus group discussion sessions 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 programme were included in the student with the exception of first year students. First year students were excluded because at the time of collecting data for the study, they had barely spent a semester on campus.

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.). only degree programmes offered for a minimum of 3 or 4 years were considered.

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 11416. 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.

5. 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 very essential for students as it has become a daily necessity for academic work (Bidin, Shamsudin, Asraf, & Sharif, 2011). Previous studies (Odell, Korgen, Schumacher, & Delucchi, 2000; Otunla, 2013; Waithaka, 2013) have also reported daily use of the Internet by students. Internet usage has also been reported to be most 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 of the respondents ?? (70%) 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 Internet 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 was 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.

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

Table 1. Internet use pattern of respondents

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 (x 3.4), followed by social networking (x3.17), Entertainment (x 3.02) with academic purposes in the fourth place (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 comes later than playing games, shopping online or surfing 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 research needs (Deniz & 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 respondents.

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

Table 2. Internet use Influence on Undergraduate Students' routine

From the results in Table 2 above, 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: 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) while many of the respondents also try to spend less time on the Internet and fail ($\bar{x}$ 2.22).

238 (61%) of the respondents reported that they very often/always, have less sleep at night because the spend time sent 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 & Iskender, 2011; Asdaque, Khan, Asad, & Rizvi, 2010; Chong Guan, Isa, Hashim, Pillai, & 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 was the divided attention of replying of chats or surfing of the Internet while attending a lecture (42%). As many as 78% of the respondents check their emails, Facebook 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 problems could be undermined. 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 & Geyik (2015) who found that Internet usage among undergraduate students in Turkey can easily be offline and do not consider themselves as addictive for internet use even though they use it for long hours. This means they can control themselves and utilise the internet for their own interest as long as they want.

Hypotheses Testing

The following null hypotheses were tested in this study:

H₀₁: *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.

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: *Printout of a table derived from the data and findings of the study*

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

From Table 3 above, the analysis of variance (ANOVA) test shows that $F = 23.519$, $df = 354$ and $p = 0.000$. Since $p\text{-value} < 0.05$, 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.

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

Table 4. Regression coefficient

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 etc.) on their daily routines.

H₀2: 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.

ANOVA ^b					
Model	Sum of squares	df	Mean Square	F	Sig.
Regression	2063.289	4	515.822	12.914	.000 ^a
Residual	12062.50	6	302	39.942	
Total	14125.79	2	306		

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

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

From Table 5, the analysis of variance (ANOVA) test shows that $F = 12.914$, $df = 306$ and $p = 0.000$. Since $p\text{-value} < 0.05$, this reveals that there is a joint significant relationship between Internet use pattern of undergraduate students (Internet use for Social Networking, Academic, Communication, Entertainment) and the level of influence the Internet has on their daily routine.

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

Table 6. Regression coefficient

The result from Table 6 shows that the regression coefficient for relationship between Internet use pattern (Internet use for Social Networking, Academic, Communication, 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.

Internet use pattern is proxied by academic, communication, entertainment and social networking. The results show that

entertainment and social networking have a statistically significant positive effect on influence of internet use. Therefore, the hypothesis of no significant effect for the two variables at 5% significant level (95% confidence) 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). Communication internet use pattern has no effect, and we fail to reject the null hypothesis that academic internet use pattern has no statistically significant effect on internet use; therefore, the hypothesis holds. 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 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 not statistically significant.

6. 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 similarly identified these Internet use influences to be a sign of Internet addiction (Q. Jiang & Leung, 2012; Lan & Lee, 2013; Roberts, Yaya, & Manolis, 2014; Stavropoulos, Kuss, Griffiths, & Motti-Stefanidi, 2015).

Several factors contribute to the academic wellbeing of learners, including diet, sleep and state of health (Coniglio, Sidoti, Pignato, & Giammanco, 2012; Q. Jiang & 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. According to Onwuegbuzie & Jiao, (1998) academic difficulties have led to many students dropping out of school. When the Internet, is productively utilised, the academic output is better. Other negative influences identified in this study include spending less time studying due to Internet surfing (230 or 59%) and replying of chats or surfing of the Internet while attending a lecture (223 or 57.2%) may consequently increase students' academic challenges. 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 engaging 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 & 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.

References

- [1] 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.
- [2] Akin, A., & Iskender, M. (2011). Internet Addiction and Depression , Anxiety and Stress. *International Online Journal of Educational Sciences*, 3(1), 138–148.
- [3] 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.
- [4] 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.
- [5] Askoy, R. (2012). *Internet Ortamýnda Pazarlama*. Ankara: Seckin Yayýnlarý.
- [6] 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.

[7] 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>

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

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

[10] Chong Guan, N., Isa, S. M., Hashim, 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>

[11] 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.

[12] 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>

[13] 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>

[14] 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>

[15] 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.

[16] 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>

[17] 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>

[18] 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>

[19] 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.

[20] 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.

[21] 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>

[22] 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>

[23] 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>

[24] 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>

[25] 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>

[26] 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).

[27] 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>

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

[29] 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>

[30] 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.

[31] 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