The impact of the internet on academic results and how it is perceived by students

Roland Sahatcija
Mediterranean University of Albania, Albania

Ariel Ora
Carleton University, Ottawa, Canada

Anxhela Ferhataj
European University of Tirana, Albania

Abstract

Internet is a high-impact ever-changing domain. It is an important element of the educational system. Internet users increase with each year. The internet is widely used. Its main feature is the speed with which information is disseminated.
This research's principal objective is the study of the impact of the internet on academic results and student perception of the internet's impact on academic results. The research instrument utilized in this study is the questionnaire, which was distributed online. The study sample consists of 90 Albanian university students.
The data was analyzed using software SPSS 20 and JASP-0.8.0.1. The hypotheses were supported with a confidence interval 95%. This study employed the following statistical analyses: crossed tabulation, frequency tables, Pearson correlation coefficient, regression analyses, and student tests.
The study concluded that the internet impacts students' results and perception of the internet's impact on academic results. Students use the internet mostly for social media, films and music. However, engagement on social media sites has a negative impact on the academic performance of students.

Keywords: internet use for academic study, internet use for social media, internet use for entertainment, student academic results, student perception of the impact of the internet on academic results.

Introduction

The internet plays a crucial role in the life of people. It can be an important source of information. According to data from Internet World Stats (2017) there are 1,823,233 internet users in Albania. Its expansion has transformed the methods of communication. It has brought major changes in various fields and the number of internet users is increasing each year. The internet has had a positive impact on the development of the educational system (Bush, 2008; Zickuhr, 2014). In recent years, universities have implemented the use of internet in their study programs (Carmona, 2013). However, it is important to understand the impact it has on student performance. Academic performance is even more important to students. It is a measurement of the student's academic standing. This study offers information about the internet's impact on student academic life and internet use time. For this reason, the scope of

the study is to analyze the impact of the internet on student academic results and student perception of the internet's impact on academic results. Moreover, students use the internet by engaging on social media, playing games, watching movies, or listening to music. Therefore, another objective of this study is to create an all-around view on the purpose of internet use by students.

1. Literature Review

Several research studies are focused on this particular field. Kubey, Lavin and Barrows (2001) concluded in their study that excessive internet usage can impact negatively the learning process. Similarly, Akhter (2013) argues that devoting too much time to the internet can have a negative effect on a person's physical health, family life, and academic performance. On the other hand, internet use for academic purposes can have a positive impact on student learning (Edmunds, Thorpe, & Conole, 2010; Brown, Ellore, & Niranjan, 2014; Englander, Terregrossa, & Wang, 2010; Mbah, 2010). Social media can have a negative impact on student results (Brown, Ellore, & Niranjan, 2014; Kirschner & Karpinski, 2010). Türel and Toraman (2015) reached the same conclusion. Young (2006) concluded that student high achievers have high internet usage.

The internet is an important element that can be used by universities (Sahin, Balta, & Ercan, 2010). Simultaneously, it can be a valuable information source for students (Aduwa-Ogiegbaen & Iyamu, 2005). Students can access online resources and obtain search results faster (Alshammari, 2014). Peter Jegrace Jehopio, Ronald Wesonga and Douglas A. Candia (2017) argue that students who use the internet for academic purposes, have higher academic results than other students. This shows that such students use online resources in order to expand their learning and knowledge of the subjects that they study in the classroom (Leung & Lee, 2012). A study concluded that there exists a significant negative correlation between hours consumed on the internet and academic achievement (Mishra, Draus, Goreva, Leone, & Caputo, 2014). Therefore, an increase in the independent variable (hours spent on the internet) causes a decrease in the dependent variable (academic results). There do not exist significant statistical differences between genders on internet usage for social media and online gaming, however female students tend to focus on social media and male students on online gaming (Fernández, Peñalba, & Irazabal, 2015; Akhter, 2013).

Suhail and Bargees (2006) wrote on the advantages of internet use. They argued that internet use assists students in developing communication skills, conduct research, and has a positive impact on managing study-time. Another advantage of the internet its facilitation in bringing about new ideas (Jones, Johnson-Yale, Perez, & Schuler, 2007). Matthews and Schrum (2003) concluded in their study that there exists a significant positive correlation between academic performance and the perception of the internet as an important academic instrument. Several researchers have concluded that internet use with respect to social media and entertainment has a negative impact on student academic results. An increase of such internet use causes a decrease in academic results (Kim, 2011).

Main Research Question:

1. Does the internet have an impact on student academic results and student perception of the impact of the internet on academic results?

Other Research Question:

1. How do students spend time on the internet?
2. What type of devices are used by students to access the internet?

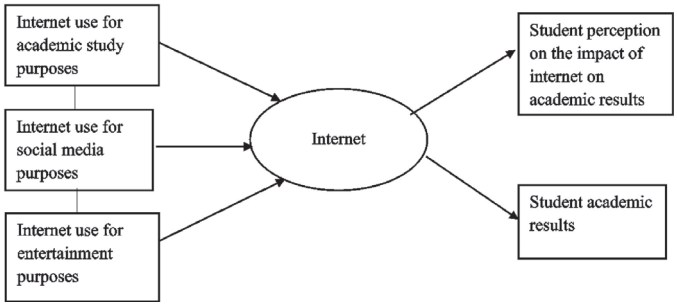
Main Hypothesis:

H1: There exists a significant correlation between the internet and academic results and student perception of the impact of the internet on academic results (α=0.05).

Other Hypotheses and Sub-Hypotheses:

- H1a: There exists a correlation between internet use for academic purpose of study and student academic results (α=0.05).
- H1b: There exists a correlation between internet use for social media and student academic results (α=0.05).
- H1c: There exists a correlation between internet use for entertainment (games, films, and music) and student academic results (α=0.05).
- H2a: The time spent on the internet by students for academic study, social media, and entertainment is the same (α=0.05).
- H3a: There exists a correlation between internet use for academic study and student perception of the impact of the internet on academic results (α=0.05).
- H3b: There exists a correlation between internet use for social media and student perception of the impact the internet on student academic results (α=0.05).
- H3c: There exists a correlation between internet use for entertainment (games, films, and music) and student perception of the impact of the internet on academic results (α=0.05).

The conceptual model employed in this study is as follows:



Methodology

The research approach employed in this study is quantitative research. The research method used is descriptive analysis. The research instrument is the questionnaire (Dorji & Lekey, 2015). The questionnaire applied to this study consists of 14 questions. The measurement of student sentiment is obtained through a 5-point Likert scale, ranging from "Strongly disagree" to "Strongly agree". The questionnaire presents 5 aspects: internet use for academic results, internet use for social media, internet

was tested through the application of the reliability coefficient Cronbach's Alpha. The value of the reliability coefficient Cronbach's Alpha for the research instrument is 0.815 (Table 1). This conveys that the obtained data are valid and can be applied to the analysis. Table 2 provides in detail the values of each variable, noting the values vary from 0.786 to 0.811.

Table 1: Reliability coefficient Cronbach's Alpha

	Cronbach's α
scale	0.815

Note. Scale consists of items Academic results and Student perception of the internet's impact on academic results, Internet use for social media, Internet use for entertainment, internet use for academic study

Table 2: Reliability coefficient Cronbach's Alpha for each variable

	If item dropped Cronbach's α
Academic results and Student perception of the impact of the internet on student academic results	0.811
Internet use for social media	0.786
Internet use for entertainment	0.789
Internet use for academic study	0.805

2. Empirical Analysis

In order to study the impact of the internet on the dependent variables, the correlation coefficient Pearson is employed. Table 3 provides the values of the Pearson coefficient. Data obtained shows that the most significant and strong correlation between dependent and independent variables, exists between internet use for academic study and student perception of the impact of the internet for academic study and student perception of the impact of the internet on academic results $p<0.001$ (0.604). It must be noted that all correlations between the independent variables and student perception of the impact of the internet on academic results, are statistically significant. In Table 3, the strongest correlation exists between the independent variables: internet use for social media and internet use for entertainment $p<0.001$ (0.613). The dependent variable, academic results has a significant and strong correlation to the independent variable, internet use for entertainment $p=0.046$ (0.222). Moreover, the values of the other two variables to grade average are around zero. This conveys that they do not have an impact on the dependent variable, academic results. This analysis serves the purpose of providing the answer to the main research question.

Table 3: Pearson Correlations

		Internet use for academic study	Internet use for social media	Internet use for entertainment	Student perception of internet's impact on academic results	Academic results
Internet use for academic study	Pearson's r	—	0.252*	0.261*	**0.604*** **	0.099
	p-value	—	0.023	0.018	< .001	0.380
	Upper 95% CI	—	0.446	0.454	0.726	0.310
	Lower 95% CI	—	0.035	0.046	0.444	-0.122
Internet use for social media	Pearson's r		—	0.613***	0.221*	-0.067
	p-value		—	< .001	0.048	0.550
	Upper 95% CI		—	0.733	0.419	0.153
	Lower 95% CI		—	0.455	0.002	-0.282
Internet use for entertainment	Pearson's r			—	0.226*	0.222*
	p-value			—	0.043	0.046
	Upper 95% CI			—	0.423	0.420
	Lower 95% CI			—	0.008	0.004
Student perception of the internet's impact on academic results	Pearson's r				—	0.036
	p-value				—	0.750
	Upper 95% CI				—	0.252
	Lower 95% CI				—	-0.184
Academic results	Pearson's r					—
	p-value					—
	Upper 95% CI					—
	Lower 95% CI					—

* p < .05, ** p < .01, *** p < .001

How do students spend time on the internet?

Table 4 provides data on internet use for academic purposes. The data shows that a great number of students have chosen to spend internet time for academic study, the 1-2 hours and 3-4 hours' alternatives, equally. However, internet use for this purpose

is not applied by all the students.

Table 4: Academic purposes

	Frequency	Percent	Valid Percent	Cumulative Percent
Does not use	5	6.2	6.2	6.2
1-2 hours	28	34.6	34.6	40.7
3-4 hours	28	34.6	34.6	75.3
5-6 hours	12	14.8	14.8	90.1
More than 6 hours	8	9.9	9.9	100.0
Total	81	100.0	100.0	

Students are very much engaged on social media sites. Table 5 shows that 21 students use more than 6 hours on social media, however the values of other alternatives are also high. The values demonstrate that students have formed dependencies from social media.

Table 5: Social media

	Frequency	Percent	Valid Percent	Cumulative Percent
Does not use	4	4.9	4.9	4.9
1-2 hours	20	24.7	24.7	29.6
3-4 hours	23	28.4	28.4	58.0
5-6 hours	13	16.0	16.0	74.1
More than 6 hours	21	25.9	25.9	100.0
Total	81	100.0	100.0	

A large number of students, about 27.2% of the study sample, do not use the internet for online gaming. However, the other part engages in online gaming. Table 6 shows that 15 students use 1-2 hours for social media, 16 use 3-4 hours, 15 use 5-6 hours, and 13 use more than 6 hours. It can be inferred that students spend a considerable amount of time on social media.

Table 6: Online gaming

	Frequency	Percent	Valid Percent	Cumulative Percent
Does not use	22	27.2	27.2	27.2
1-2 hours	15	18.5	18.5	45.7
3-4 hours	16	19.8	19.8	65.4
5-6 hours	15	18.5	18.5	84.0
More than 6 hours	13	16.0	16.0	100.0

What type of devices are used by students to access the internet?
Students mostly use Smartphones to access the internet. This conveys that they are in the initial phases of Mobile-learning (use of smartphones to learn). A considerable number of students, around 21%, use the desktop in order to access the internet. Detailed data is provided in Table 8, as well as diagrammatically in Graph 7.

Table 8: Devices used to access the internet

	Frequency	Percent	Valid Percent	Cumulative Percent
Laptop	12	14.8	14.8	14.8
Computer desktop	17	21.0	21.0	35.8
iPad	6	7.4	7.4	43.2
Smartphone	38	46.9	46.9	90.1
Tablet	7	8.7	8.7	98.8
Smart Box Android TV	1	1.2	1.2	100.0
Total	81	100.0	100.0	

H1: There exists a significant correlation between the internet and academic results and student perception of the impact of the internet on academic results (α=0.05).
In order to prove hypothesis H1, regression analysis is employed. Table 9 provides data, where Adjusted R^2 is 0.087. The independent variable (internet) explains 8.7% of the variance of the dependent variable (academic results), where F=3.529, Adjusted R^2=0.087 and p =0.019. The value of p is less than α=0.05, which conveys that there exists a significant statistical. Table 10 shows Adjusted R^2=0.346. This conveys the independent variable (internet) explains around 34.6% of the dependent variable (student perception of the internet's impact on academic results), where Adjusted R^2=0.346, F=15.12 and p<0.001. The value of p shows that there exists a significant statistical correlation between the two variables. The analysis demonstrates that between the independent variable and the dependent variables exist significant statistical correlations. Hypothesis H1 is supported with confidence interval 95%.

Table 9: Regression analysis between the internet and academic results

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
Internet	0.348	0.121	0.087	0.968	0.121	3.529	3	77	**0.019**

Table 10: Regression analysis between the internet and student perception of the internet's impact on academic results

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
Internet	0.609	0.371	0.346	0.750	0.371	15.12	3	77	**< .001**

H1a: There exists a correlation between internet use for academic purpose of study and student academic results (α=0.05).
In accordance with the values of the regression analysis from Table 11, it can be

concluded that the Beta coefficient is 0.077, t=0.689 and p=0.493. Internet use for academic study has an insignificant weak positive statistical correlation to academic results. It conveys that it has little impact on the dependent variable. Hypothesis H1 is supported with a confidence interval 95%.

H1b: There exists a correlation between internet use for social media and student academic results (α=0.05).

Social media is correlated negatively to academic results with coefficient Beta =-0.337, t=-2.473 and p=0.016 (Table 11). Between the two variables there exists a significant negative statistical correlation. Social media have a negative impact on student results. The two variables move in opposite directions. Thus, between the variables there exists a negative correlation and hypothesis H1b is supported with confidence interval 95%.

H1c: There exists a correlation between internet use for entertainment (games, films, and music) and student academic results (α=0.05).

There exists a significant strong positive correlation between internet usage for entertainment and academic results with coefficient Beta=0.408, t= 2.990 and p=0.004 (Table 11). The use of internet for entertainment influences an increase in the dependent variable. The two variables move in the same direction. Research conducted by Dr. Patterson and Adam Oei (2014) concluded that playing puzzle games improves executive brain functions. The analysis concludes that hypothesis H1c is supported with confidence interval 95%

Table 11: Regression analysis for each independent variable with academic results

Model		Unstandardized β	Standard Error	Standardized β	t	p
1	(Constant)	2.939	0.626		4.692	< .001
	Internet use for academic study	0.107	0.155	0.077	0.689	0.493
	Internet use for entertainment	0.487	0.163	0.408	2.990	**0.004**
	Internet use for social media	-0.413	0.167	-0.337	-2.473	**0.016**

H2a: The time spent on the internet by students for academic study, social media, and entertainment is the same (α=0.05).

To prove the hypothesis, p in Table 12 is used: One Sample T-Test. All values taken by p are less than α=0.05. From the values of p, it is concluded that there exist significant statistical differences between time spent for academic purposes, social media, online games, films, and music. As a result, hypothesis H2a is rejected.

Table 12: One Sample T-Test

				95% Confidence Interval	
	t	df	p	Lower	Upper
Academic purposes	24.31	80	**< .001**	2.641	3.112
Social media	24.10	80	**< .001**	3.058	3.609
Online games	17.36	80	**< .001**	2.459	3.096

Table 12: One Sample T-Test

				95% Confidence Interval	
	t	df	p	Lower	Upper
Films and music	22.50	80	**< .001**	2.915	3.480

Note. Student's T-Test.

H3a: *There exists a correlation between internet use for academic study and student perception of the impact of the internet on academic results (α=0.05).*
The most significant and strong correlation exists between internet use for academic study and student perception of the impact of the internet on academic results with coefficient Beta=0.580, t=6.147 and p<0.001(Table 13). Internet usage for academic study has a higher impact on student perception. The independent variable moves in the same direction with the dependent variable. Thus, hypothesis H3a is supported with confidence interval 95%.
H3b: There exists a correlation between internet use for social media and student perception of the impact the internet on student academic results (α=0.05).
According to the values of Table 13, the independent variable (internet use for social media) has a weak correlation to the dependent variable (student perception of the internet's impact on academic results) with coefficient Beta=0.047, t=0.407 and p=0.686. The impact of the independent variable over the dependent variable is very low. However, because the two variables are correlated, hypothesis H3b is supported with confidence interval 95%.
H3c: There exists a correlation between internet use for entertainment (games, films, and music) and student perception of the impact of the internet on academic results (α=0.05).
Internet use for entertainment is correlated to student perception of the internet's impact on academic results with coefficient Beta=0.046, t=0.395 and p=0.694 (Table 13). Between the two variables, there exists a weak positive correlation. Internet use for entertainment has little impact on the dependent variable. From the analysis it can be inferred that the variables are correlated, thus hypothesis H3c is supported with confidence interval 95%.

Table 13: Regression analysis for each independent variable with student perception of the internet's impact on academic results

Model		Unstandardized β	Standard Error	Standardized β	t	p
1	(Constant)	0.697	0.485		1.436	0.155
	Internet use for academic study	0.741	0.121	0.580	6.147	**< .001**
	Internet use for entertainment	0.050	0.126	0.046	0.395	0.694
	Internet use for social media	0.053	0.130	0.047	0.406	0.686

Conclusions and Recommendations

Internet use is widespread among students. Students spend most of their time on the internet, on social media, films and music. It must be noted that a great number of students use the internet for more than 6 hours, which can lead to internet dependency. Students use in large part smartphones to access the internet. The internet explains 8.7% of the variance of academic results and 34.6% of the variance of student perception of the internet's impact on academic results. It was concluded from the analysis that internet use for entertainment has the strongest correlation to academic results with coefficient Beta = 0.408, t=2.990 and p=0.004, and internet use for academic study has the strongest correlation to student perception of the internet's impact on academic results with coefficient Beta = 0.580, t=6.147 and p<0.001. Social media have a negative impact on student results, thus students need to manage the time that they send on them. Albanian universities can include more internet usage and applications in their study programs, as well as implement contemporary learning methodologies.

References

Adam C, O., & Michael D, P. (2014). Playing a puzzle video game with changing requirements improves executive functions. *Science Daily*, 37. Retrieved July 30, 2017.

Aduwa-Ogiegbaen, S., & Iyamu, E. (2005). Using Information and Communication Technology in Secondary Schools in Nigeria: Problems and Prospects. *Educational Technology & Society, 8*, 104-112. Retrieved July 28, 2017.

Akhter, N. (2013). Relationship between Internet Addiction and Academic Performance among University Undergraduates. *Journal of Science and Technology Education Research, 8*(19), 1793-1796. Retrieved July 26, 2017.

Alshammari, N. (2014). The Use of Technology in Education to Improve Student's Reading Skills in Elementary Schools, Saudi Arabia. *International Journal of Business and Social Science, 5*, 69. Retrieved July 28, 2017.

Brown, U. J., Ellore, S. B., & Niranjan, S. (2014). The Influence of Internet Usage on Academic Performance and Face-to-Face Communication. *Journal of Psychology and Behavioral Science, 2*(2), 163-186. Retrieved July 26, 2017.

Bush, M. (2008). Computer-assisted language learning: From vision to reality? *CALICO, 25*(3), 442-470. Retrieved July 25, 2017.

Carmona, M. (2013). ICT Trends in Education. *1 st Annual International Interdisciplinary Conference*, (pp. 428-430). Azores.

Dorji, & Lekey. (2015). *The Impact of the Internet on Academic Performance of the students at the tertiary level of Education in Bhutan.* Bhutan: Royal Institute of Management.

Edmunds, R., Thorpe, M., & Conole, G. (2010). Student attitudes towards and use of ICT in course study, work and social activity: A technology acceptance model approach. *British Journal of Educational Technology, 43*(1), 71-84.

Englander, F., Terregrossa, R. A., & Wang, Z. (2010). Internet use among college students: tool or toy. *Educational review, 62*(1), 85-96. Retrieved July 27, 2017.

Fernández, J., Peñalba, A., & Irazabal, I. (2015). Internet Use Habits and Risk Behaviours in Preadolescence. [Hábitos de uso y conductas de riesgo en Internet en la preadolescencia]. *Comunicar, 44*, 113-120. Retrieved July 29, 2017.

Internet World Stats. (2017, June 19). *Internet World Stats.* Retrieved from Internet in Europe Stats: http://www.internetworldstats.com/stats.htm.

Jehopio, P. J., Wesonga, R., & Candia, D. A. (2017). Internet Heavy usage and its Influence on Academic Achievement of University Students. *International Journal of Engineering Science and Computing*, 5757-5762. Retrieved July 28, 2017.

Jones, S., Johnson-Yale, C., Perez, F. S., & Schuler, J. (2007). The Internet landscape in college. *Yearbook of the National Society for the Study of Education, 106*(2), 39-51. Retrieved July 29, 2017.

Kim, S. (2011). *The Effects of Internet Use on Academic Achievement and Behavioral Adjustment among South Korean Adolescents: Mediating and Moderating Roles of Parental Factors.* New York: Syracuse University. Retrieved July 29, 2017.

Kirschner, P. A., & Karpinski, A. (2010). Running head: Facebook and academic performance. *Computers in Human Behavior, 26*, 1237-1245. Retrieved July 26, 2017.

Kubey, R. W., Lavin, M. J., & Barrows, J. R. (2001). Internet use and collegiate academic performance decrements: Early findings. *Journal of communication, 51*(2), 366-382. Retrieved July 25, 2017.

Leung, L., & Lee, P. (2012). Impact of Internet Literacy, Internet Addiction Symptoms, and Internet Activities on Academic Performance. *Social Science Computer Review, 30*(4), 403-418. Retrieved July 29, 2017.

Matthews, D., & Schrum, L. (2003). High-speed Internet use and academic gratifications in the college residence. *The Internet and Higher Education, 6*(2), 125-144. Retrieved July 29, 2017.

Mbah, T. B. (2010). *The impact of ICT on students' study habits. Case study: University of Buea, Cameroon.* Saarbrücken, Germany: LAP LAMBERT Academic Publishing.

Mishra, S., Draus, P., Goreva, N., Leone, G., & Caputo, D. (2014). The Impact of Internet Addiction on University Students and Its Effect on Subsequent Academic Success: A Survey Based Study. *Issues in Information Systems, 15*(1), 344-352. Retrieved July 29, 2017.

Sahin, Y. G., Balta, S., & Ercan, T. (2010). The Use of Internet Resources by University Students during Their Course Projects Elicitation: A Case Study. *The Turkish Online Journal of Educational Technology, 9*, 234-244. Retrieved July 28, 2017.

Suhail, K., & Bargees, Z. (2006). Effects of excessive internet use on undergraduate students in Pakistan. *Cyber Psychol. Behav, 9*(3), 297-307. Retrieved July 29, 2017.

Türel, Y., & Toraman, M. (2015). The Relationship between Internet Addiction and Academic Success of Secondary School Students. *Antropologist, 20*, 280-288. Retrieved July 29, 2017.

Young, B. (2006). A study on the effect of internet use and social capital on academic performance. *Development and Society, 35*(1), 107-123. Retrieved July 26, 2017.

Zickuhr, K. (2014). Teens and Tech: What the research says. *Young Adult Library Services, 12*(2), 33-37. Retrieved July 25, 2017.