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INCORPORATING THE INTERNET IN LEARNING BY THE MANAGEMENT SCIENCE STUDENTS AND ITS EFFECT ON THEIR ACADEMIC ACHIEVEMENTS

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Abstract

Purpose: *The study was planned with a clear purpose to examine how Management Science students incorporate the internet in their education and what outcomes it has on their academic performance.*
Research Design: *A quantitative survey approach was adopted. For this purpose data were collected from a sample of 225 Management Science students scattered in five selected universities of Khyber Pakhtunkhwa, Pakistan using non-random proportionate sampling technique.*
Key Findings: *The findings of the study indicate that 55% of students do not possess personal computer/Laptops. A vast majority of the respondents (79%) used the internet at their homes and 80% students agreed to the importance of internet use training. Students'Internet use for chatting with friends and family and for spending leisure time negatively affect CGPA but spending more time on academic online resources enhance their academic results. Similarly, their computer problems solving skills have positive effects on their CGPA but the problems of slow internet connectivity, electricity shortage, and much more information to deal with badly effect students' academic performance.*
Conclusions: *The internet use has a significant co-relationship with the students' academic success. Therefore, the research suggests the authorities to provide training in the light of findings of this study, which would undoubtedly improve the academic output of the Management Science Students in the Universities of Khyber Pakhtunkhwa.*

Keywords*:* Internet use; Management Science University students; Academic performance; Academic use of Internet; Pakistani Undergraduate students.

Background of the Study

The internet technology and web based technological applications are widely used technologies among students to obtain social support and cooperation in their academics (Gemmill & Peterson, 2006). Students are entirely familiar with internet facilities (Badu & Markwei, 2005) and using it in their daily lives. Kumar and Kaur (2006) established that internet use has improved their grades. Similarly, Munozand DuartMontoliu (2008) stated that the use of the internet by students might lead to inequalities in academic performance, while Ying-Tien and Chin-Chung (2006) found that the positive use of internet produce positive results. However, Government of Pakistan is providing a wide range of educational opportunities to the students at a higher level in KP province by establishing new universities in various parts. Presently, there are a total of fifteen public sector general universities in (KP). These seats of learning are providing higher education to both male and female students in a variety of disciplines. These universities offer campus-wide high-speed internet connectivity along with other facilities required for users in higher education institutions. The KP universities in possession of the PERN (Pakistan Educational and Research Networks) connectivity, offer high-speed campus-wide online access to thousands of scholarly journals via the Higher Education Commission (HEC) National Digital Library to their students and researchers. The provision of these facilities cost billions of rupees, which no doubt are commendable but, many local studies exposed the low usage of online educational resources (Ameen & Gorman, 2009; Ansari & Zuberi, 2010; Arif & Ameen, 2009; Bhatti, 2010; Khan & Ahmed, 2013; Ullah, 2007; Warraich & Ameen, 2010).

Furthermore, the survey of local literature showed the scarcity of similar studies in Pakistan. The available studies just covered the use of internet and are out dated too. Since the many years have passed, it seems appropriate to assess the current status of internet usage pattern among the students along with its effects on their academic performance. The researcher's efforts of finding any such study that had investigated the incorporation of the internet in education by the Management science students were unfruitful. Therefore, the purpose of this study is to examine the Management Science students' internet usage patterns, barriers they face in the use of the internet, and the correlation between their internet use, internet use skills, and barriers with their educational performance.

Literature Review

Internet technology has emerged as one of the top components of ICTs that has affected education all around the world. Alabi (2013) thinks that in contemporary societies the young students are the largest population using the internet and its resources. Kumar and Kaur (2006) suggested that high-speed internet should be provided to participants along with trained and skilled staff round the clock to assist students. It was also suggested to block the immoral sites that might affect student's concentration towards academics. In the same year, Ying-Tien and Chin-Chung (2006) stated a strong relationship between student's positive attitude towards the

internet and internet self-efficacy with their grade level. Researchers suggested sorting out of the effective ways for improving student's independent control of the internet and their capability to communicate for better academic results. Suhail and Bargees (2006) investigated the effects of the internet of regular internet users. The study revealed that 31% of students reported deterioration in their grades or college performance and another 21% admitted they were missing their classes or work due to time spent online. The authors also found that 78% of the respondents reported that the internet helped them to improve their grades and about 74% reported improvement in their reading and writing skills by using the Internet. Erdogan, et.al., (2008) witnessed positive effects on the academic performance of the respondents. The studies recommended future research to determine variation in internet use by students. Munoz and DuartMontoliu (2008) found that the use of internet in the education sector by students may lead to inequalities in academic performance due to the negative uses of the internet or due to the institutional barriers, or because of a new form of teaching and learning.

Al-Saif, (2009) did a literature review of the studies on risks associated with the use of internet and its impact upon students community and concluded that the evidence on the impact of internet use on students' academics weremixed and need more research work. On the one hand, it showed that many riskswere associated with the internet use, for example, infiltration of national culture, affecting the social and moral values, and undermining the national and mother languages. However, on the contrary, electronic mail, quick communication through online chat and Social Networking Sites (SNS) has positive effects on the academic and social lives of students.

Udende and Azeez (2010) examined the relationship between the student's internet use and their academic performance and discovered that the less frequent use of internet by Nigerian students was due to many reasons such as lack of internet use skills, non-availability of internet in many of university departments, lack of their own laptop/desktop, and shortage of electric supply. Researchers established the significant relationship between student's academic performance and use of the internet as they noted adverse effects of these internet related problems on the academic performance of the students. Goyal, et.al., (2011) believe that the use of internet technologies in the educational arena has changed the conventional ways of learning. The study found a significant relationship between internet usage with students' performance; therefore, they suggested that management and decision makers in universities need to give high importance as to how students can use the internet efficiently and effectively or re-evaluate the educational system in terms of a more current context. Safdar, et.al., (2010) revealed that students regularly use the internet for educational purposes without formal training. Researchers recommended the provision of on-campus internet access along with appropriate formal training programs to train the students to use reliable academic resources like e-journals, e-libraries, e-books, and online databases in their projects and homework. Asdaque, et.al., (2010) found that in Pakistan the universities students have recently got opportunities to use internet facilities for acquiring information related to their courses; therefore, students have inadequate knowledge of how to use this medium effectively. Furthermore, it found that the number of hours spending on

the internet will affect the CGPA of students unless the internet is used for study purposes. Therefore, researchers recommended conducting further research on how the students at universities seek information online.

Hemmi, et.al., (2009) examined the usability of social media in higher education. Researchers stated that students deal with more complex tasks; therefore, they need to understand the importance of SNS for learning and certain efforts should be made to incorporate social media in higher education to boost the educational results of the students. On the contrary, Englander, Terregrossa, and Wang (2010) expressed a negative relation of SNS with the educational performance of students in higher education. Similarly, Kirschnera and Karpinski (2010) also studied the correlation between the useof SNS, especially Facebook,and the academic achievements and reported a negative correlation between the time spent in hours by students on the internet and their academic success in terms of self-reported GPA. However, Hamat, et.al., (2012) have stated that SNS has gained popularity among young learners and can play a significant role in informal learning. Therefore, students should be encouraged by the instructors and educators to utilize this medium effectively. Ahmed and Qazi (2011) study concluded that SNS adversely affect academic performance because SNS were not used in a positive way that could improve learning. In the same way, Helton (2011) explored the effects of Facebook habits on academic success and confirmed the relationship between time students spent on Facebook and academic success. The author suggested that in future studies should be conducted to investigate the use of Facebook and to identify the distracting aspects to help students who can achieve higher Grade Point Average (GPA).

Wanakak (2011) conducted doctoral research to investigate the internet use and its impact on students through mixed method research. Results showed that students used the internet for a longhours especially for educational, entertainment and socialization. They used Facebook and Skype for sharing and communication with friends and family. Apart from internet addiction problem some other problems identified due to the excessive use of internet such as physical problems, mental problems,relationship problems and poor academic performance. Chandio (2011) found that students use the internet to access information relevant to their courses, assignments, and research projects. The author stated that it is essential to know a student's internet behavior and recommended the involvement of student's in research activities for enhancing their research abilities and academic competence. Sheikh, et.al, (2013) found that university students are aware of the importance of the information available on the internet. Findings revealed that majority of the respondents believe internet search engines as a time-saving source to access the required information than books. The only barrier encountered in the acquisition of information was slow internet speed in universities. To improve the quality of higher education researchers recommended high-speed internet connectivity and trained staff for guiding students.

Saisanet. al., (2013) studied the sign and symptoms of excessive internet use on college students' academic performance. The study revealed that students sometimes ignore their classes, often delay in their educational projects because of the excessive usage of the internet. This

problem has adversely affected and declined students' study habits. Ezemenaka (2013) studied the impacts of internet-enabled phones on the academic performance of the students at the University of Ibadan, Nigeria. The researcher found no relationship between the uses of internet-enabled phones and academic performance. However, he suggested that it is essential to observe the use of the internet-enabled phone in classrooms and outside classrooms.

Usman, et.al. (2014) examined the relationship between Internet Addiction (IA) and academic performance of the university students at University Technology Malaysia (UTM). The results showed that the effects of IA on student's academic performance were less and not very critical, but the researchers suggested the university administrators to take early preventive measures in order to save students from the adverse effects of internet addiction. They further advised the university authorities to conduct seminars, workshops and other such campaigns for the awareness of the students regarding the harmful and adverse effects of the excessive use of the internet on academic achievements. In another study, 2014, Sharachi, et al. studied the amount of internet usage among students of Khafr County and its impacts on their studies. Study expressed that the internet technology found at various places like homes, educational institutes, shopping centers, and in public places,airports, hospitals, courts have entirely changed people lives by strengthening and expanding the mutual relationships. However, its excessive use sometimes decreases social relationships and isolates people.

The use of the internet for academic purposes by students in different groups; social sciences, agriculture, engineering, and computer sciences in Malaysian institutions of Higher Education were investigated by Ayub, et.al., in 2014. The survey found a weak correlation between total time spent on the internet and time spent on the academic use of the internet. The study recommended that the students in higher education need to be aware of the usability of both academic and non-academic internet resources so that the amount of time spent on the browsing internet can be spent wisely and profitably. Mishra, et, al. (2014) also examined the impact of excessive internet usage on the student's academic success. The findings revealed an inverse relationship between internet use and the academic success of students. The study reported that the more time spent on online internet activities does not mean academic success. Onthe other side, the struggles to minimize the time spent on online internet activities do not seem significant in improving the chances of academic success. The author recommended re-evaluating the entire infrastructure related to the internet facilities available in order to engage students more positively in their use of the internet for academic pursuits.

The review of the literature shows that the internet plays a significant role in educational success. However, the review shows that it has diverse effects on the performance of students. Therefore, by studying the internet use of different communities in various situations will help governments and educational institutions to formulate rules and policies and to train them accordingly. Such efforts will bring significant improvements in the students' learning attitude and academic performance.

Objectives

To gauge the incorporation of internet use by the Management Science students' in their education, this study is conducted with the following research objectives:

- To find out the correlation between the Management Science University students' internet use and their educational performance.
- To find out the effects of internet use skills and barriers they face on their educational performance/CGPA.

Methodology

This empirical study uses the survey method due to its aptness to study characteristics, opinions, and beliefs of a large and dispersed population and by studying comparatively a small number of units selected from the larger group at less cost (Busha & Harter, 1980; Powell & Connaway, 2004). There were a total of 725 students of Management Sciences studying in final year/semester in all the five universities selected from the total fifteen public sector general universities existed in the Khyber Pakhtunkhwa province of Pakistan. The required data were collected from the purposefully selected five universities as research site: the University of Peshawar, University of Malakand, University of Mansehra, Abdul Wali Khan University Mardan and Gomal University, Dera Ismail Khan. This selection was made due to the reasons that these universities had high enrolment of students among all public sector universities in KP, and secondly, these universities possessed Management Sciences disciplines from which the researcher planned to collect the data.

The study sample size, *N=251* was determined through an online sample calculator by taking 95 confidence level. Furthermore, the non-random proportionally stratified sampling technique was applied to collect data from the dispersed population divided into five subgroups having unequal number of students in each. In such sampling, the number of units allocated to various strata's is proportional to the representation of the strata in the target population. The survey instruments were distributed among 251 Management Science university students. The data was collected through structured questionnaires as Powell and Connaway (2004) have stated that the questionnaire as a data collection tool is cost-effective, anonymous, time effective and reduces the bias of researcher. For designing a questionnaire, the related literature was thoroughly reviewed and a tentative list of questions prepared as a draft instrument. The draft questionnaire consisted of three sections: (1) demographics of the respondents (2) Internet use patterns, including: internet use experience, purposes of internet use, time spent on the internet for different purposes, effectiveness of internet resources and activities, the use frequency of internet resources and activities, and respondents' satisfaction from the internet resources; and, (3) Internet usage skills and barriers faced by the Management Science university students in the use of internet. The draft instrument was reviewed by a panel of five experts from the field of Library and Information Science for content validity. It was revised in response to the feedback received from experts. The revised version was used for the pilot study by distributing these among 30 graduate students, fifteen males and fifteen females, selected non-randomly for the pilot study. Students participating in the pilot study were asked to give comments and suggestions regarding the improvement of the questionnaire. The minor changes suggested during the pilot study were incorporated to finalize the questionnaire. The Cronbach's coefficient alpha calculated for the instrument at the time of the pilot study was .76, which was good. When it was checked after the pilot study, for the overall questionnaire as well as for each question the

Cronbach's coefficient alpha value was in between.70 and.89). The final instruments were provided personally and by post to respondents with the prior permission of the concerned Vice-Chancellors of the selected universities.

Furthermore, to increase the response rate, follow up visits were made from time to time. A total of 251 questionnaires were distributed personally and through posts among the Management Science' students in the five selected universities and about 225 (89.64%) students responded to survey, that was an outstanding response rate. The collected data were entered in the SPSS 20.0 and descriptive and inferential statistics were used for analysis. The descriptive statistics such as percentages, means, and standard deviations were used. Among inferential statistical techniques, Spearman-roh test of association was used to determine the association between internet use and students' CGPA. The reason to apply this test was that previous researchers Li and Kirkup (2007) and Saghir, et.al., (2009) have also used it successfully for the same purpose.

Demographics

The detail demographics of the respondents (Table 1) show that the number of male was 97 and females 128. Furthermore, it was encouraging that 101 (45%) students possessed personal PCs but 124 (55%) respondents did not possess personal PCs. Similarly, 79 of the respondents achieved up-to 3.0 out of 4.0 CGPA, and about 70 (31%) had CGPA between 3.01-3.50. It is interesting to note that 80% of the respondents considered the internet use training as important. So for the internet use places were concerned data shows that the maximum number of students (79%) used the internet at their homes as compared to rest of the places where the internet facility was available.

Table 1

The Frequency-wise Distribution of Respondents by Gender, Ownership of PCs/Laptops, CGPA, Students Opinion Regarding the Internet Use Training and Internet Use Places. (N=225)

Group	Frequency	%
Gender		
Male	97	43%
Female	128	57%
Ownership of PCs/Laptops		
Yes	101	45%
No	124	55%
CGPA		
2.0-2.50	36	16%
2.51-3.0	**79**	35%
3.01-3.50	70	31%
3.51-4.0	40	18%
Internet use training is important	180	80%
Internet use training is not important	45	20%
The internet use places		
Home	178	79%
Library/Computer Lab	145	64%
Hostel	98	44%
Internet Cafes	**23**	**10%**
Friend's house	18	8%

The Correlation between Students' Internet use Experience and CGPA

Table 2 shows that the detail of the correlation between the students' internet use experience and the CGPA. The p-value of Spreaman-roh test shows that no significant relationship exists between the internet use of Management Science students and their CGPA. As the p-value was more than .05.

Table 2

The Correlation between Management Science Students' Internet Use Experience and CGPA

	Spearman Correlation	***P-value***
Correlation between the Internet users experience & CGPA	*-.031*	*.734*

The Correlation between Respondent's Internet Use Purposes and CGPA

The Spearman's Correlation statistics regarding the internet use purposes and the University students' CGPA (Table 3) showed a statistically significant but negative correlation between the CGPA and two internet use purposes, i.e. chatting with friends and family members (r=-.104, p=.007) and spending leisure time (r=-.099, p=.010) having P-value < 0.05.The more the students used the internet for these two purposes, the more the reported reduction in their CGPA. Besides these, no association was observed between the students' CGPA and the rest of the internet use purposes.

Table 3

The Correlation between Respondents' Internet Use Purposes and CGPA

	Purposes of internet use	**Spearman's Correlation**	**P-Value**
1	Complete assignments/research projects (download and consult free academic e-resources: e-books/journal articles/thesis and dissertations/manuscripts/technical reports/ indexes and abstracts etc.)	.006	.088
2	Download software	-.044	.253
3	E-mail	-.064	.097
4	Chatting with the purpose to communicate academic information with teachers/supervisors/colleagues	-.008	.831
5	To search for admissions and scholarships	-.021	.595
6	Use Social Networking Sites (Facebook, Myspace, Meet me… etc.)	-.0513	.173
7	Read e-newspapers and general magazines	-.025	.514
8	Chat with friends and family members	-.104	**.007***
9	See weather reports	.018	.646
10	Spend leisure time	-.099	**.010***
11	Search for jobs	.035	.368
12	Use online shopping and trading websites	.147	.056
13	Watching movies/dramas/shows/photographs	.032	.403
14	Watching and listening music (Audio Visual)	-.063	.102
15	Watching sports	.026	.505
16	Playing games	-.023	.552

*Correlation is significant at the 0.05 level.

The Correlation between Students' Time Spent on the Internet for each Purpose and CGPA

The Spearman's-roh test of the correlation coefficient was used to test the relationship between the time spent on the internet for different purposes and students' CGPA. Time spent on the internet was taken as an independent variable. The data in Table 4 indicate statisticallysignificant negative correlation between students' CGPA and downloading software, e-mailing,chatting with friends and family members,seeing weather reports,spending leisure time,searching for jobs,using online shopping and trading websites,watching movies/dramas/shows/photographs,watching and listening music (Audio Visual),watching sports,and playing games (*P*-values < 0.05). However, there was a positive correlation between CGPA and internet use to complete assignments/research projects (download and consult free academic e-resources: e-books/journal articles/thesis and dissertations/manuscripts/technical reports/indexes and abstracts, etc.) (r=.134, p=.000). The insignificant relationship was found between students' CGPA and the internet resources: chatting with the purpose to communicate academic information with teachers/supervisors/colleagues; SNS (Facebook, Myspace, Meet me… etc.); and reading e-newspapers and general magazines as these had *P*-values > .05.

In other words, students spending more time on the academic resources online positively affected their CGPA. However, use of the internet for non-academic purposes decreased their academic performance.

Table 4

The Correlation between Students' Time Spent on the Internet for each Purpose and CGPA

Purposes of internet use		**Spearman's Correlation**	**P-Value**
1	Complete assignments/research projects (download and consult free academic e-resources: e-books/journal's articles/thesis and dissertations/manuscripts/technical reports/ indexes and abstracts etc.)	.134	**.000***
2	Download software	-.082	**.034***
3	E-mail	-.129	**.001***
4	Chatting with the purpose to communicate academic information with teachers/supervisors/colleagues	-.029	.446
5	To search for admissions and scholarships	-.103	.207
6	Use Social Networking Sites (Facebook, Myspace, Meet me… etc.)	-.052	.180
7	Read e-newspapers and general magazines	-.022	.568
8	Chat with friends and family members	-.195	**.000***
9	See weather reports	-.195	**.000***
10	Spend leisure time	-.078	**.042***
11	Search for jobs	-.109	**.005***
12	Use online shopping and trading websites	-.098	**.011***
13	Watching movies/dramas/shows/photographs	-.135	**.000***
14	Watching and listening to music (Audio Visual)	-.155	**.000***
15	Watching sports	-.178	**.000***
16	Playing games	-.143	**.000***

*Correlation is significant at the 0.05 level

The Correlation between Students' Use Frequency of Internet Resources and Activities and CGPA

The results of the Spearman's test for correlation values between the CGPA and the usage frequency of the internet resources and activities (Table 5) show that the CGPA had positive correlation with the use of internet for electronic encyclopedia, dictionaries, and other electronic reference material (r=.103); technical reports (r=.114); electronic newspapers and magazines (r=.104); and SNS (r=.157). This indicates that the participants with high CGPA had a high use frequency of these resources, while a significant but negative association was found between the students' CGPA and the usage frequency of emailing (r=-.117), as it had P-values < 0.05, meaning that students with high CGPA had a low use frequency of the e-mailing internet activity. The usage frequency of the remaining internet resources and activities had no association with the students' CGPA.

Table 5

The Correlation between Students' Use Frequency of Internet Resources and Activities and CGPA

	Internet resources and activities	**Spearman's Correlation**	**P-Value**
1	Free e-books	-.024	.534
2	Free online databases	.049	.203
3	HEC Digital Library databases	.029	.454
4	Free software	-.041	.292
5	Electronic theses and dissertations	.034	.373
6	Indexes and abstracts	.045	.207
7	Electronic encyclopedias, dictionaries, and other electronic reference material	.103	**.007***
8	Technical reports	.114	**.003***
9	Electronic newspapers & magazines	.104	**.007***
10	Research papers delivered in seminars, conferences, and workshops	-.011	.775
11	Presentations available on Slide-share	.065	.094
12	Speeches and lectures available on Youtube	.065	.093
13	E-mailing	-.117	**.002***
14	Online cloud storage (Sky drive, Google drive, One drive)	.048	.215
15	Online Chat	.057	.137
16	Social Networking Sites (SNS) (Facebook, Twitter… etc.)	.157	**.000***
17	Using blogs, wikis, RSS and Tumblrs	-.057	.142
18	Online movies/dramas/shows	.179	.107
19	Online music	.020	.607
20	Sports	-.019	.618
21	Photographs and images	.034	.348
22	Audio-visual resources	-.067	.081
23	Search engines	.048	.216

*Correlation is significant at the 0.05 level.

The Correlation between Students' Satisfaction Obtained from the Use of Internet Resources and Activities and CGPA

In order to investigate the nature of the association between the students' academic success and the level of satisfaction they obtained from the use of different internet resources and activities, Spearman's-rho test was applied and the results(Table 6)revealed that there were only five significant correlations. The results showed that there was a negative association between the CGPA and the level of satisfaction with free books (r=-.157), electronic thesis and dissertations (r=-.114), electronic encyclopedias, dictionaries and other electronic reference material (r=-.110), speeches and lectures available on YouTube (r=-.077), and audio-visual resources (r=-.120) as all of these had P-values of less than .05. It means that students with high CGPA were less satisfied with the above internet resources.

Table 6

The Correlation between Students' Satisfactions Obtained from the Use of Internet Resources and Activities and CGPA

	Internet resources and activities	***Spearman's Correlation***	***P-Value***
1	Free e-books	-.157	**.000***
2	Free online databases	.032	.404
3	HEC Digital Library databases	.018	.633
4	Free software	-.003	.945
5	Electronic theses and dissertations	-.114	**.005***
6	Indexes and abstracts	-.014	.720
7	Electronic encyclopedias, dictionaries, and other electronic reference material	-.110	**.004***
8	Technical reports	.044	.259
9	Electronic newspapers & magazines	.052	.181
10	Research papers delivered in seminars, conferences, and workshops	-.007	.855
11	Presentations available on the Slide – share	-. 004	.921
12	Speeches and lectures available on YouTube	-. 077	**.046***
13	E-mailing	.068	.080
14	Online cloud storage (Sky drive, Google drive, One drive)	-.029	.453
15	Online Chat	.033	.393
16	Social Networking Sites (SNS) (Facebook, Twitter… etc.)	-.051	.185
17	Using blogs, wikis, RSS and Tumblrs	.063	.100
18	Online movies/dramas/shows	-.001	.987
19	Online music`	.018	.643
20	Sports	-.028	.476
21	Photographs and images	-.054	.159
22	Audio-visual resources	-.120	**.002***
23	Search engines	-.005	.903

*Correlation is significant at the 0.05 level

The Correlation between Students' Internet Use Skills and CGPA

The Spearman's Correlation test was run against variables in order to gauge any emerging positive or negative correlation between the internet use skills and CGPA. Table 7 shows thatapositive (r=.095) but weak correlation was found between CGPA and solving computer related problems, as its P-value < .05. It means that higher CGPA was associated with a higher level of computer problems solving skills. Some significant but negative correlations were also noted between CGPA and using e-mail (r=-.105); using the SNS (Facebook, MySpace, etc.) (r=-.111) and using HEC Digital Library databases to download e-books, journals (r=-.132). It means that students with high CGPA had low levels of using email, using HEC databases, and using SNS skills. The rest of the internet use skills mentioned in (Table 7) did not reveal any significant relationship with students' CGPA as they had P-values > 0.05. It means these skills neither positively nor negatively affected the students' CGPA.

Table 7

The Correlations between Students' Internet Use Skills and CGPA

	Internet use skills	**Spearman's correlation**	**P-value**
1	Using E-mail	-.105	**.031***
2	Using Search Engines to find information	.262	.253
3	Uploading and downloading of information	.197	.327
4	Using the Social Network Sites (Facebook, MySpace, etc.)	-.111	**.047***
5	Online chatting	.155	.184
6	Organize and manage files through (Google drive, Sky drive, and One drive)	.162	.072
7	Solving computer related problems	.095	**.050***
8	Using RSS, Wikis, Blogs	.199	.326
9	Using online directories	.009	.923
10	Using Free online databases	-.105	.144
11	Using HEC databases to download e-books, journal articles, reports	-.132	**.037***
12	Playing online games	.046	.612
13	Making online shopping and trading	.054	.551

*Correlation is significant at the 0.05 level

The Correlation between Barriers to Use of Internetand CGPA

In order to find the association between students' CGPA and the internet barriers students faced while using the internet was measured through Spearman-roh test of correlation. The data in table 8 show that the problem of slow speed of internet connectivity (r= .344), electricity shortage problem (r= .250), distance problem (r=.219) and the problem of too much information to deal with (r=.202) have a positive relationship with CGPA. It means that students with high CGPA were facing these problems with greater intensity.

Table 8

The Barriers Students Faced in the Use of Internet

	Barriers	Spearman's correlation	P-value
1	I lack adequate knowledge about online e-resources	.161	.072
2	The problem of negative attitude of society towards internet usage	-.054	.515
3	Students have less encouragement and restrictions from parents to use the internet due to the availability of immoral sites on the internet	-.008	.930
4	I feel sexual harassment problems	.093	.302
5	The slow speed of the internet (connectivity)	.344	**.000***
6	Electricity shortage problem	.250	**.005***
7	Lack of support from staff working in computer labs and library	.087	.332
8	Difficulty in using the internet due to distance between me and internet stations	.219	**.014***
9	I cannot use the internet due to insufficient time available to me because of my domestic responsibilities	.009	.922
10	Lack of (workstation) in computer labs/libraries to access the internet	.173	.053
11	The problem of too much information to deal with	.202	**.024***
12	I face confidentiality and security issues in the use of an internet	.096	.285
13	I cannot afford the cost of internet	.035	.702
14	I lack information searching skills	.100	.266
15	I face a language barrier in the use of the internet.148	-.048	.597
16	I feel nervousness/anxiety in using the internet	.095	.294
17	I feel the computer anxiety(fear in the use of a computer)	.163	.070

Scale: Strongly disagree=1, Disagree=2, No opinion=3, Agree=4, Strongly agree=5

Conclusions and Discussion

The study found female ratio (57%) higher than the male ratio of 43% which was very encouraging. However, a large number 55% of the respondents did not possess personal computers, the authorities need to ponder upon this issue. Students' opinion regarding the internet use training showed that 80% (180) students agreed to the importance of internet use training. The previous researches from Pakistan (Safdar, et.al., 2010; Asdaq, et.al., 2010) also found that majority of the students used the internet without formal training and both studies recommended to provide formal internet use training to the students.

Similarly, a very high ratio of 79% of the students declared that they used the internet at their homes whereas the less opted place for the use of the internet was friends' houses. The results concluded that students using the internet for the following two nonacademic purposes Chatting with friends and family members (r=-104) and spending leisure time (r=-.099) would certainly decrease theirCGPA. These results are contrary with the results (communication have positive effects) found by Al-Saif (2009). The results regarding the correlations between students' CGPA and the time they spent on the internet for different purposes concluded that students spending more time on internet for academic purposes such asto complete assignments/research

projects (download and consult free academic e-resources: e-books/journal articles/thesis and dissertations/manuscripts/technical reports/indexes and abstracts, etc.) produced significant and positive relationships which enhanced their CGPA. However, their CGPA was negatively affected when they used internet for non-academic purposes such as downloading software,e-mailing,chatting with friends and family members,seeing weather reports,spending leisure time,searching for jobs,using online shopping and trading websites, watching movies /dramas /shows /photographs,watching and listening music (Audio Visual),watching sports,and playing games. However, Mishra et. al. (2014) found that spending more time online does not mean academic success. The Spearman's-rho test for the level of satisfaction they obtained from the use of different internet resources and activities inferred that negative correlation between CGPA and the level of satisfaction students obtained with the use of free books (r=-.157), electronic thesis and dissertations (r=-.114), electronic encyclopedias, dictionaries and other electronic reference material (r=-.110), speeches and lectures available on YouTube (r=-.077), and audio-visual resources (r=-.120). It means that students with high CGPA were less satisfied with the above internet resources. Moreover, itmay be inferred that a positive (r=.095) but weak correlation found between CGPA of the respondents and their skill of solving computer related problems.Which indicates students with higher CGPA possessed high computer problems solving skills.However, negative correlations found between students' CGPA and their skills of using e-mail (r=-.105); SNS (Facebook, MySpace, etc.) (r=-.111) and HEC Digital Library databases to download e-books, journals (r=-.132), showing that students' having low skills of using the following internet services negatively affect their CGPA. The co-relation statistics between students' academic performance in terms of CGPA and the problems they faced concluded that those students who achieved high CGPA were faced the problems of slow speed of internet connectivity (r= .344), electricity shortage (r= .250), distance problem (r=.219) and too much information to deal with (r=.202) with higher intensity. Kumar and Kaur 2006 suggested the provision of high-speed internet and Udende and Azeez 2010 also suggested to solve the problem of power supply. Similarly, Sheikh, et al. (2013) also identified the slow speed of the internet as the main problem in the use of the internet.

Recommendations

The recommendations are listed below about the implication for practice from conclusions of this research:

1. To get personal computers by the maximum students, this study strongly recommends the continuation and expansion of the distribution of free Laptops among the university students. Moreover, the authorities may provide easy loans for the purchase of personal computers.
2. The most significant percentage 79% used the internet at their homes followed by Library/Computer labs and hostels respectively. Therefore, it is strongly recommended to further improve the internet facilities at these places by the government and the universities authorities for the effective use of the internet.
3. Keeping the associations between the graduate students' CGPA and their internet use skills, it is suggested to provide training courses focusing on students' computer problems solving skills, using e-mail; SNS (Facebook, MySpace, etc.) and HEC Digital Library Databases to download e-books, journals.
4. Keeping in view the strong relationship of students internet use in the academic performance it is suggested to re-evaluate the educational system in terms of a more current context.

5. The significant problems identified which affected the academic performance of the students' were; slow speed of internet connectivity (r= .344), electricity shortage (r= .250), distance problem (r=.219) and too much information to deal with (r=.202), need to be solved by the authorities on priority basis for the effective and efficient use of the internet facilities and services.

6. Researchers suggested conducting programs, seminars, workshops, etc. for the awareness of students regarding the positive and negative aspects of internet use.

References

Ahmed & Qazi. (2011). A look out for academic impacts of social networking sites (SNSs): A student-based perspective. *African Journal of Business Management,* 5(12), 5022-5031.

Alabi, O. F. (2013). A survey of facebook addition level among selected Nigerian undergraduates.*Journal of New Media and Mass communication,* 10, 70-80.

Al-Saif, A. A. (2009). Risks associated with the use of the internet and its impact upon student's awareness of perverse issue: Literature review. *ActaDicticaNapocesia,* 2(4), 33-38.

Ameen, K., & Gorman, G. E. (2009). Information and digital literacy: A stumbling block to development?: A Pakistani perspective. *Library Management, 30,* 99-112. doi: 10.1108/01435120910927565

Ansari, M. N., &Zuberi, B. A. (2010). Use of electronic resources among academics at the University of Karachi. *Library Philosophy and Practice (e-journal)*. Paper 385. Retrieved from http://digital commons.edu/libphilprac/385.

Arif, M., & Ameen,K. (2009). Acceptance of digital library among female students and effects of limited access of digital library on their performance in research work: A case of International Islamic University. *The International Information & Library Review, 20,* 1-7. doi:10.1016/j.iilr.2009.07.003

Asdaque, M. M., Khan, M. N., and Rizvi, S. A. A. (2010). Effect of internet on the academic performance and social life of universities students in Pakistan. *Journal of Education and Sociology*, 21-27.

Ayub, M. A. F., Hamid, W. H. W., and Nawawi, M. H. (2014). Use of internet for academic purposes among students in Malysian institutions of higher education. *The Turkish Online Journal of Educational Technology*, 13(1), 232-241.

Badu, E. E., and Markwei, E. D. (2005). Internet awareness and use in the University of Ghana. *SAGE Journal Online,* 21(4), 260-268.

Bhatti, R. (2010). An evaluation of user-education programmes in the university libraries of Pakistan. *Library Philosophy and Practice (e-journal)*. Paper 316. Retrieved from http://digital commons.edu/libphilprac/316.

Busha, C. H & Harter, S. P. (1980). *Research methods in librarianship: Techniques and interpretations*. New York: Academic Press.

Chandio, J.A., (2011). Usage trend of internet by undergraduate university students. *Journal of Managerial Sciences*, 6(2), 214-223.

Englander, Terregrossa and Wang. (2010). Educational Review. *Journal of Education*, 62(1), 85-96.

Erdogan, Y., Bayram, S., and Deniz, L. (2008). Factors that influence academic achievement and attitudes in web based education. *International Journal of Instruction,* 1(1), 31-48.

Ezemenaka, E. (2013). The usage and impact of internet enabled phones on academic concentration among students of tertiary institutions: A study at the University of Ibadan,

Nigeria. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 19(3), 162-173.

Gemmill, E. and Peterson, M. (2006). Technology use among college students: Implications for student affairs professionals. *NASPAJournal*, 43(2), 280-299.

Goyal, E., Purohit, S., and Bhaga, M. (2011). Study of satisfaction and usability of the internet on student's performance. *International Journal of Education and Development using Information Communication Technologies*, 7(1), 110-119.

Hamat, A., Embi, M. A., & Hassan, H. A. (2012). The use of social networking sites among Malaysian university students. *International Education Studies*, 5(3), 56-66.Retrieved from; http://dx.doi.org/10.5539/ies.vn3p56

Helton, B. (2011). The effects of facebook habits on academic success. Journal of Undergraduates Research, 1-9. Retrieved from: http://www.lagrange.edu/pdf/citations/2011/19_Helton_Psychology.pdf

Hemmi, A., Bayne, S., and Land, R. (2009). The appropriation and repurposing of social technologies in higher education. *Journal of Assisted Learning*, 25, 19-30.

Khan, A., & Ahmed, S. (2013). The impact of digital library resources on scholarly communication: Challenges and opportunities for university libraries in Pakistan. *Library Hi Tech News, 30*, 12-29. doi: 10.1108/LHTN-07-2013-0046

Kirschnera, P. and Karpinski, A. (2010). Facebook® and academic performance. *Computers in Human Behavior*, 26(6), 1237-1245.

Kumar, R. and Kaur, A. (2006). Internet use by teachers and students in engineering colleges of Punjab, Haryana, and Himachal Pradesh states in India: An analysis. *Electronic Journal of Academic and special Librarianship,* 7(1). Retrieved from: http://southlibrarianship.icaap.org/content/v07n01/kumar_r01.htm

Li, N. &Kirkup, G. (2007). Gender and cultural differences in Internet use: A study of china and the UK. *Journal of Computer and Education*, 48, 301-317.

Mishra, S. et al,. (2014). The impact of internet addiction on university students and its effect on subsequent academic success: a survey based study. *Issues in Information System,* 15(1), 344-352.

Mohammed, A. (2008). Using the internet as an educational way in the field of journalism. *The Egyptian Journal of Information,* 8(96), 23-28.

Munoz, J. C. &DuartMontoliu, J. M. (2008). Uses of internet and academic performance in the Caralan university system. Readings in Education and Technology: *Proceedings of ICICTE*, Retrieved from: http://www.uoc.edu/in3/pic/universiat_societat_xarxa.html.

Powell, R. R. &Connaway, L. S. (2004). *Basic Research Methods for Librarians* (4rthed). London: Published by Libraries Unlimited.

Safdar, M., Mahmood, K., &Qutab, S. (2010). Internet use behavior and attitude of college students: a survey of Leadership colleges' Network. *Library Philosophy and Practice, (e-journal*). Paper 336. Retrieved from: http://digitalcommons.unl.edu/libphilprac/336

Saghir, A, Ashfaq, M., & Noreen, A. (2009). Gender and information and communication technologies (ICT'S). *The Journal of Animal and Plant Sciences,* 19(2), 94-97.

Saisan, J. et al. (2013). Internet and computer addiction: Signs, symptoms and treatment. Helpguide.org, retrieved from http://www.helpguide.org/mental/internet_cybersex_addiction.htm on Feb 16, 2015.

Sharachi, et al. (2014). A survey of the amount of internet usage among High School students of Khafr County and its impacts on students. *Procedia-Social and Behavioral Sciences,* 114, 610-616.

Sheikh, R. A., et al. (2013). Online information use: An evaluative study of Internet use by students of the University of Peshawar. *Peshawar University Teachers Association Journal* (*PUTAJ)*. 20, 313-320.

Suhail, K and Bargees. Z. (2006). Effects of excessive internet use on undergraduate students in Pakistan. *Cyber Psychology & Behavior*, 9(3):297–307, 2006.

Udende, P. and Azeez, A. L. (2010). Internet access and use among students of the University of Ilorin, Nigeria. *Journal of Communication and Media Research*, 291, 33-42.

Ullah, M. (2007). Use of Internet by medical postgraduate trainees. *Pakistan Library & Information Science Journal, 38,* 16-20.

Usman, N. H., Alvi, M., and Shafeq, S. M. (2014). Relationship between internet addiction and academic performance among undergraduate students. *Procedia Social and Behavioral Science,* 114, 845-851. Retrieved from: www.sciencedirect.com .

Wanakak, K. (2011). Internet use and its impact on secondary school students in Chiang Mai, Thailand. Ph. D dissertation submitted at Edith Cowan University, Thailand.

Warraich, N. F., & Ameen, K. (2010). Perceptions of LIS professionals regarding use of Pakistan National Digital Library databases. *The Electronic Library, 28,* 108-121. doi: 10.1108/02640471011023414

Ying-Tien, W. U and Chin-Chung, T. (2006). University students' internet attitudes and internet self-efficacy: A study at three universities in Taiwan. *Cyber Psychology and Behavior,* 9(4), 441-450.