

**Patterns of Internet Use, and Information Overload on
University Students**

(MS Research Thesis)



Researcher

Tasaddaq H. Qureshi

Registration no: 37-SS/MSMC/F09

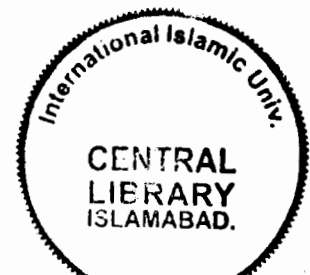
Supervisor

Dr. Muhammad Zafar Iqbal

Department of Media and Communication Studies

International Islamic University - Islamabad

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- 1 Use of Internet in higher Education
- 2 Communication and information

DATA ENTERED

Angel
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In
the name of
ALLAH

(Jalla-jalaluhu)
the one,
who is all alone!

INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD
FACULTY OF SOCIAL SCIENCES
Department of Media and Communication Studies

FINAL APPROVAL

It is certified that we have read this thesis submitted by Mr. Tasaddaq Hussain. It is our judgment that this thesis is of sufficient standard to warrant its acceptance by the International Islamic University Islamabad for MS Degree in Media and Communication Studies.

COMMITTEE

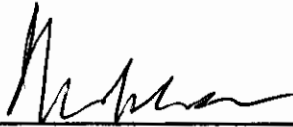
Supervisor

Dr. Zafar Iqbal



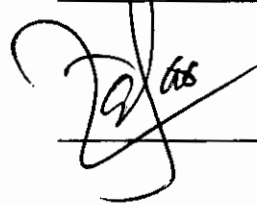
External Examiner

Prof. Dr. Masrur Alam Khan



Internal Examiner

Syed Inam-ur-Rehman

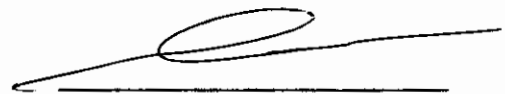



Chairman (DMCS)

Dr. Zafar Iqbal

Dean, FSS

Prof. Dr. Nabi Bux Jumani



DEDICATION

Dedicated to all my teachers, from class one to MS, who have been a glowing candle for me in the dark nights of my life, and enabled me (with the grace of Allah jalla-jlalu) to become MS degree holder; specially to Dr. Muhammad Zafar Iqbal, who guided me point to point, each and every time. I offer my humble and heartiest gratitude to him for his kind attitude, skillful guidance and keen interest throughout my MS, particularly in the supervision of this research work. Indeed it is an honor and pleasure for me to work under the supervision such a great and honorable personality.

*Not enjoyment and not sorrow
Is our destined end of way,
But to act that each tomorrow
Bring us further than today.*

(Long Fellow)

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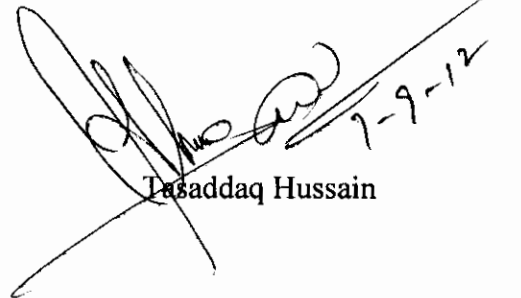

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Tabaddaq Hussain

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Abstract

This study aims at exploring the effects of the information overload on the university students and their patterns of internet use that eventually influence their efficiency. The sample comprises four hundred students, including one hundred each from Quaid-e-Azam University, International Islamic University, National University of Modern Languages and Federal Urdu University Islamabad. A survey research design is adopted, with the Knowledge Gap theory providing a theoretical background. It suggests that majority of students are suffering from Information Overload and its main reason is extra large relevant and irrelevant information of internet. It has been found that specific targeted patterns and skilled patterns of internet use have weak positive correlation while facilitated pattern of internet use and socioeconomic status of the students have no correlation with information overload. It is because of the equal internet facilities provided by all the universities. Computer mediated communication and information overload is described in the form of a new model 'CMC model of IO'. It is suggested that students should be provided a compulsory and specific training of internet use to coup with the frequently faced problem of 'Information Overload'.

Chapter- 1

Introduction

1.1 Background

The Internet is a miracle invention of the 20th century. It is a worldwide system of combined networks of the computers. This global system of interconnected computers consists of a large number of academic, business, private, public, and government networks that are linked by a wide range of electronic, wireless and optical networking technologies and a large variety of information input assets and services are carried by it across the world¹.

The Internet is an extension of the computer. It was introduced by the United States government in 1960s; later on in 1990s its commercialization started. This commercialization popularized it and it was incorporated into every aspect of modern human life. Globally, the usage of the Internet has seen a wonderful expansion. It has been observed that in a short time of nine years (from 2000 to 2009), the Internet users have gone up from 394 million to 1.858 billion².

It has introduced a number of new types of social communications and dealings. The social networking websites like as Twitter, Facebook, and MySpace have shaped new traditions to socialize and interact around the world. It has created a new kind of quickness in functioning hours, site and location, mainly with the extension of high-speed connections. The learning material from pre-school to post-doctoral level is accessible from a huge number of websites, which is very much helpful for students in studies. The facilities which are available today, these were never so unproblematic for public to access learning materials at any stage from anyplace.

¹Please see <http://en.wikipedia.org/wiki/Internet>, we accessed it on December 31, 2011.

²Internet World Stats, updated 31 March 2011. <http://www.antaranews.com/en/news/71940/google-earth-demonstrates-how-technology-benefits-ris-civil-society-govt>, we accessed it on December 31, 2011.

It is an important enabler of both formal and informal education, in general. Frequent techniques used for the access of internet at residence consist of landline broadband, dial-up, and Wi-Fi, satellite and 3G/4G technology mobile phones. This facility is mostly available in libraries and Internet cafes, where computers having appropriate internet connections are available for the consumers, round the clock.

In Pakistan, this facility of the Internet has been available since early 1990s. There were 0.1% internet users out of the 164 million populations. In 2006, 7.2%, while in 2011, 17.6% of the total population of the Pakistan was using internet³.

In August 2002, Prof. Dr. Ata-ur-Rehman as Minister of Science and Technology, launched an IT action plan including the PERN (Pakistan Education and Research Network). This project was financed by the Government of Pakistan in collaboration with Pakistan Telecommunication Company Limited's Research and Development Funds⁴. The Pakistan Education and Research Network attach the universities and research institutes all the way through high-speed Internet. To facilitate the researchers and students in distribution of data and to bring together though video conferencing, is its main purpose. At present, there are fifty-six native educational institutes (including twenty-four universities and institutions from Islamabad) are interconnected. The PERN provides following services to its affiliated universities⁵.

- Access to International Internet Bandwidth.

³ Please see <http://en.wikipedia.org/wiki/internet> in Pakistan. It was accessed on December 3, 2011.

⁴ Please see http://pern.edu.pk/index.php?option=com_content&task=view&id=15&Itemid=30, we accessed it on December 3, 2011.

⁵ Please see http://en.wikipedia.org/wiki/Pakistan_Educational_Research_Network, we accessed it on December 3, 2011.

- Right to use more than eleven thousands Scientific and Research Journals and link to Digital Library.
- Four or more public IP addresses for use by the university.
- Broadband link to other universities.
- Infrastructure for point-to-point videoconferencing.
- Sharing of large-size data amongst universities.
- Cheaper Bandwidth Rates for PERN Universities and
- PERN Launches Video Reflector Service.

The PERN's set of connections was designed, operated and maintained by National Telecommunication Corporation (NTC) which is now called Pakistan Telecommunication Company Limited (PTCL). The Higher Education Commission (HEC) is managing it and interlinks all public and private sector chartered universities/degree awarding institutions affiliated with it. This networking of the universities and institutes will put together the data banks; help teamwork to do research and progress measures and improvement in education and scholarship expertise.

The Higher Education Commission modified it and launched a National Research and Education Network (NREN), with the name of PERN2, for the educational area of the country. It is interconnected with other NRENs of the globe e.g. APAN (Asia), GEANT2 (Europe) and Internet2 (USA). The PERN2 interlinks over one hundred educational and research institutions of the country, in the cities where services are accessible while the left over universities and institutions are connected.

At international level it is worldwide linked through TEIN3. It is considered as the third age group of the Trans-Eurasia Information Network, which provides an internet network across the Asia-Pacific. The researchers and academics in China, Japan, Indonesia, Korea, Laos, Malaysia, Nepal, Pakistan, India, Singapore, Sri Lanka, the Philippines, Thailand, Taiwan, Vietnam and Australia are interlinked through the TEIN3. The Bangladesh, Cambodia and Bhutan are in the process of linking. After joining of these three countries, number of partners of TEIN3 will rise up to nineteen⁶.

Today e-mail, e-commerce, e-government-banking and a lot of e-facilities are being introduced in such a way that we can say 'the world is converting rapidly into an e-world'. Around the globe, majority of the governments is rapidly facilitating their publics. In the short history of Information Technology (IT), a revolution has changed the world and now internet is an integral part of our active social life. Specially, in the field of education, it is an essential tool for teachers, students and researchers (Kumar & Kaur, 2006). Now, the Internet is playing a vital role in this scenario. It has facilitated the world very much but the side-effects are also very alarming. One of the most discussed affects is 'Information Overload' (IO), which disturbs a majority of the users (Wilson, 2001). IO is a situation in which efficiency of an individual in making use of information is in an inferior position by the quantity of appropriate and potentially beneficial information on hand to him (Bawden & Robinson, 2008). Just like the digestive system of human body, cognitive system works properly if its feed doesn't exceeds the limits. If a man gets overdose, his digestive system fails to work properly. Similarly, when a man receives excessive amount of information, his cognitive system fails to entertain it, and such a situation is given the name of Information Overload (IO), which results in two kinds of

⁶ Please see <http://www.tein3.net/> we accessed it on April 26, 2012.

problems, i.e. psychological and, Physical problems. In psychological problems the suffering person feels: stress, decision paralyses, Confusion and frustration, an impair judgment/ Overconfidence and Decreased benevolence to others. While, in Physical problems the suffering person feels: rise in blood pressure, weakened vision, loss of appetite and Insomnia (Skinner, 2008)⁷.

According to (Chen C. Y., 2003) higher education has become more and more motivated by technology, to facilitate the students in their program of studies and. The environment of gaining proper knowledge that works independent of time and place (such as computer-mediated communication) accomplishes these requirements. The easiness and flexibility of learning from any place and time is made available only through the CMC. Almost all the research studies report information overload as one of the major obstacle that creates troubles in computer-mediated communication of the student⁸. Although it is an unavoidable issue but research scholars have not dealt appropriately with it (Chen C. Y., 2003). It is observed that 'IO' doesn't affect all the users equally; different ways of the usage of the internet give birth to a variety of the affects (Ruff, 2002). The patterns of internet use (POIU) can be categorized on the basis of the following questions:

- 1: What is the purpose of using internet (education, entertainment, information, social contacts)?
- 2: Where do the students use internet (at home, institution's library, net cafe, office or else where)?
- 3: How the internet problems are handled (how much skillful the internet user is? Who

⁷ Skinner, C.A. (2008). Are you suffering from information fatigue syndrome? Retrieved on Oct.10,2011, from <http://mis-asia.com/news/articles/yahoo-web-causes-information-fatigue-syndrome>

⁸ Murray Turoff invented Computer mediated communication in 1970 for commercial purposes; it grew rapidly in Higher Education since the 1980s. In higher education there are three modes of CMC which are as: (1) adjunct mode, (2) online mode and (3) mixed mode (Chen, 2003).

does guide him in case of facing problems; teachers, friends, personal efforts, computer based help)? 4: For how long, the internet is being used by the student? 5: Which type of internet facility (speed of internet/ capacity of computer/nature of power supply) the student is availing mostly?

Generally these different situations shape the intensity of information overload. So the study of the patterns of internet use is an important aspect for CMC's research. To resolve the problem of IO systematically, order of the affecting reasons must be observed carefully and analyzed. The analysis of POIU can help a lot in such a situation. This study is based on a survey in which responses of the student of four prominent universities of Islamabad are entertained.

This research study will see the problem of 'information overload in university students' in special perspective of 'Knowledge Gap' theory (Tichenor, Donohue, & Olien, 1970), as it has already been given special appreciation in the near past (Bawden & Robinson, 2008). Uses and Gratification theory (Rosengren, 1970), Social Learning Theory (Bandura, 1977) and Cognitive Load Theory (Merrienboer, J, & Sweller, 2005) have been studied with special reference to information overload, by (Khaleeq, 2008); (Wei, 2008) and (Chen & Chang, 2009) respectively, but we find it comparatively more suitable because of our own environment, as it is dominantly socioeconomic-status oriented (Taylor, Zhu, Dekkers, & Marshall, 2003).

1.2 Problem Statement

Today, majority of the students is suffering from information overload. However its main source is yet not clear. Patterns of internet use can play a significant role to shape the intensity of this fatigue, so it is appropriate to probe out, 'what is the association of the patterns of internet use

1.3 Objectives of the Study

The main objectives of this research study are as:

1. To observe the effects of the information overload on university students.
2. To observe the patterns of internet use, followed by the university students.
3. To analyze the correlation of information overload with varying patterns of internet use.
4. To observe the correlation of information overload with socio-economic status.

1.4 Significance of the Study

This research study will be beneficial to identify the effects of the 'Information Overload' on university students. It will point out the users, who are an easy prey of the fatigue of IO? It will be a positive feature for those who want to know the effects of IO and are eager to apply the techniques for its encounter. It will expose the severances and intensity of the IO relating to the POIU. It will facilitate the universities' administration to bring up to date their digital libraries and computer laboratories. As a result, the standard of academic activities will be geared up to compete with the world. It will be a significant addition in CMC research and research scholars will find it a glowing candle in future.

Chapter-2

Literature Review

In this chapter previously conducted research works regarding the patterns of internet use and information overload are reviewed with special reference to the university students. All the research works are critically studied; keeping in mind, what was done, how it was done and what the results were obtained. Valuable suggestions given by the researchers are entertained properly and accommodated in this study (Wimmer & Dominick, 2009). Entire chapter is divided into four sections viz. Patterons of internet use, information overload, theoraticle framwork and hypotheses.

2.1 Patterns of Internet Use (POIU)

Internet is on use among students in many different ways and they gratify different needs as a result of the time they spend on it. Some studies suggest that students of net can be categorized into classes including frequency of use, need of use and satisfaction on the use of net. Jadoon, et al. (2011), continuing on this, cited that mostly the internet is accessed by the students for education and other personal purposes. However, the internet is not properly utilized for the enhancement of the education. It was recommended that awareness should be augmented. Training in computing skills and availability of requisite facilities are essential to make possible enhanced consumption of these digital assets. Information overload is not studied directly; however some of its symptoms are observable like: insufficient amount of computers, shortage of the time, non-cooperative employees, lack of the training of internet use etc. Fordjour, et al. (2011) added a different aspect into the discussion and exposed that significance of information taken using information retrieval tools depend mostly on the faculty of the students but did not

depend on the Level of Students. It was also observed that the students' majority from the Faculty of Sciences got their required information 'always' but the majority of the students of the Faculty of Arts 'never' got their intended information. M.Sc. students were found mostly getting their required information 'sometimes' but they got their required information more than the students of M.A, M.Phil and Ph.D. It was concluded that the students of the Faculties of Science, Arts and Social Studies, were fully aware of information retrieval system. It was observed that the use of information retrieval systems is a trouble with all the students of different faculties. Everyday disturbance of the Internet, insufficient time and no facility of training programs to educate students about the usage of appropriate tools, to acquire appropriate information were the most important causes for the troubles in retrieval of information they were trying to get. There is also a differing opinion, of Hazelhurst, et al. (2011), about the patterns of internet use, he believes that a majority of the internet browsing by University students is non-academic in nature, the web is primarily a social space for students, students with higher internet usage have a lower average than students with lower internet usage, the difference is small, but meaningful and statistically significant, the internet usage of good students has a significantly different profile to that of weak students, light users are disproportionately represented among good students. These findings are comparatively different, which show that students having different localities and environmental references use internet in a different way and its effects are also different. This study provides sufficient grounds for a new study in a new setup, to probe out the reason that results in different effects, where as the causes are same.

Different levels of the students and their patterns of internet use are especially studied by the researchers. Safdar, et al. (2010) believes that the attitude and behavior of internet use of bachelor and intermediate level students is not similar. The research study was conducted

through convenience sampling method. It observed that eighty-nine percent respondents were those students who had their own PC, at their home. Fifty-nine percent of them had internet connection too. Every fifth student was properly trained and dominant majority of them was able to get assistance either from friends or elder family members. It is an indicator of high socioeconomic status. Students having PC at home were of the opinion the English was a problem for them, as it is clear that information at the internet is offered mostly in it. Information overload is not studied in this case directly; however it shows that the symptoms of information overload are present for some extent. It has introduced a new phenomenon of 'foreign language problem' which deserves a thorough study, especially with reference to the information overload. Similarly, Bashir, et al. (2008) conducted a survey about the behavior and performance of the students towards the internet utilization in their studies and everyday life. It was concluded that the internet was used by the majority of the students for their research work and course related studies. The students are mostly fresh users of the Internet; they use it in their departments, at the university library, and at their residences. They learnt mostly, the use of Internet by themselves or friends without attending any formal training from any institution. The students use the internet to save their time and make the work easy. It was proposed in the paper that the students should be facilitated by the university authorities by offering proper guidance programs of the internet use. It was also recommended that techniques of searching on the internet should be incorporated in the set of courses of all departments for the better use of internet. In this study survey method was applied, patterns of internet use were observed and recommendations were made; but information overload was not entertained, perhaps it was an early stage of research, now it is the proper time to study the most frequent problem of the internet users. Another exclusive study of this nature was that of Unnikrishnan, et al. (2008), a cross sectional

survey for the evaluation of the patterns of internet and computer use in the course of the postgraduate and undergraduate students of medical studies. The Population of the study was five hundred medical students, among those four hundreds were undergraduate and one hundred were postgraduate. Majority of post graduate students (77%) was satisfied with computer assisted schooling. Every fifth (20%) student of first and second year class was not satisfied with the computer assisted teachings. first and second year students were not satisfied. Nearly half (50.5%) of the first and second year students used the Internet most often to communicate socially. Nearly every fifth (21%) student of Pre final and final year class used Internet most often for the class work given by the teachers. The most popular use of the internet was for the E-mailing; 87% post graduate students were found engaged in it. It was also observed that there is an important association between the reason of internet use and the year of study. It was especially noted that with the progress of students through their curriculum, the use of computer for entertainment decreases and the use for general information and research work increases. An outsized bulk (92.5%) of the first and second year class and nearly whole of the postgraduate students (98%) believed that the internet and computer use should be encouraged in educational institutions. This cross sectional survey shows that with the passage of time students become mature and their patterns of internet use improve from non-academic to academic activities. The students feel that internet facilities should be promoted in teaching institutions, but neither information overload nor the symptoms of information overload were observed.

Another relevant study was conducted by Suhail & Bargees (2006); their focus of the study was the analysis of the positive and negative effect of the internet use on the students of undergraduate level; who were excessive users of the internet. It was observed, the majority of the students were using Internet to improve their educational achievements and positive effects

were observed in them. It gives us a clear indication that internet is taken as a positive count in educational institutions especially by the students; however it seems a very preliminary response. Every new thing has an attraction in it for its viewers, but after a comprehensive dealing, its entire position becomes clear. Side-effect of internet usage in the form of information overload has been observed all over the world, it is forcing to conduct a comprehensive study on it.

A very grass roots level study regarding the patterns of internet use, was conducted by Roknuzzaman (2006), the main objective of the study was to investigate the physical and technological connections for the access of internet access in the campus of the second large university of the Bangladesh. Primarily qualitative and quantitative approaches were used simultaneously, in this case study. It was noted that the deficiency computers was a major trouble, eighty-one percent of the respondents pointed it out. Almost the same fraction (79%) of students recognized monetary inabilities for the purchase of the computers and to retain the facilities in the labs. Thirty-seven respondents (64%) expressed their view about the shortage of IT-literate people, while thirty-five (60%) reported having acute space problem to organize computers and Internet technology in their departments or institutes, and thirty-two (55%) respondents talked about their dissatisfaction on the 'computer-processing speed'. twenty-six (47%) of the establishment was of the opinion that interrupted power supply was another problem for proper utilization of computer and Internet access. Funding problems were found more significant and symptoms of information overload were also observed. Here, the correlation of socio-economic-status with the sense of information overload needs more investigation. 'Patterns of internet use and information overload in university students' will provide a reasonable and satisfactory investigative report on it. It gives a clue that power breakdown can also be a reason of mental exhaustion, which is considered as information

overload, but no one has studied this aspect of internet use, we can accommodate it properly. Usage of the Internet and related issues among teachers and students of engineering colleges in three Indian states viz. Haryana, Punjab and Himachal Pradesh were studied by Kumar & Kaur (2006). A well structured questionnaire was distributed among one thousand, nine hundreds and eighty teachers and students. Main objective the survey was to examine the patterns of Internet use, the Internet skills of the engineering professionals, its impact on their educational competence and troubles faced by them during the internet utilization. It was concluded that internet provides information but not in a fully organized way, therefore the users are unable to get their specific information from the Internet easily. To make the Internet more beneficial, the library staff who has attained a good deal of efficiency in the collection, organization and retrieval of information should feel duty-bound to see that the students are able to gain exact information. It was suggested that there is a vast scope for future research in different types of users' behavior and attitudes towards the Internet. It was also suggested that the timings of the Internet service should be made available round the clock, more computers with the latest specifications and multimedia kit should be installed, more efficient technical staff should be appointed and they should always be present in the Internet section for expert advice. Slow connectivity problem should be solved by increasing the bandwidth, sites providing only entertainment should be blocked, and orientation training programs should be organized by the colleges at regular intervals so that the maximum users can improve their excellence. It is a comprehensive research; however the suggestions given by the researchers are demanding replication. It will be tried to accomplish a follow up study that will bring to light, the correlation of the facilities provided by the universities with the information overload in students. Rajani & Chandio(2004) conducted a survey, and obtain a sample from Pakistani adults, young adulthood

(teens), and senior citizens, teachers, doctors, students, organizers, employed and unemployed. It was observed that greater part of the consumer have the same opinion with the potential of the Internet as informative source for general public and accepted the effort involved in effectively utilizing this important source of the information and other comprehensions. It was too exposed that the students use the Internet mostly for the academic motivation. It was a preliminary stage of research which confirmed that the students use internet mostly for academic cause. The research work of Taylor, et al. (2003) is very much relevant to this study, theoretically. They conducted a survey in Central Queensland (CQ), Australia; which examined differences in home Internet usage patterns between young and old, male and female, urban and rural, married and unmarried, well-educated and less educated, rich and poor, and employed and unemployed people. It was hypothesized Internet usage patterns of young and old, male and female, people in urban and rural areas, married and unmarried, well-educated and less educated, rich and poor, and employed and unemployed respondents are not at the similar level. Dissimilarities were examined in the domestic Internet use across these parameters and the associations between home Internet consumption patterns, socio-economic and demographic factors in Central Queensland, Australia. Identification of internet usage patterns and their associations with demographic and socio economic parameters in CQ, was the basic purpose of the study. Nine parameters and eight Internet usage patterns were concerned. In this study usage patterns were divided in eight categories: 1- Education, 1- work, 3- email, 4- entertainment, 5- information search, 6- community networking, 7- online purchase, 8- home finances. Personal profile was consisting nine categories: 1- Gender, 2- Martial status, 3- Location, 4- Age, 5- Education levels, 6- Combined family income, 7- Employment status, 8- Number of kids, 9- house possession. It was suggested that more studies should be carried out about the strong performance of the

youngsters in using Internet for entertainment and information at their own residences. It is clear from the above cited literature that the way in which the students use internet depends upon three main aspects; (a) target/aim/purpose of using the internet, (b) location/environment in which a student uses the internet and (c) the facilities which are available to him physically and mentally. The students' characteristics such as motivation, prior online learning experiences, cognitive abilities, and learning styles have also a significant impact on their success in their studies (Simonson et al., 2000). Keeping this background in mind, this study aims to determine personal factors that lead the individuals to distinguish that they are overloaded with information or not. Different causes of information overload, discussed here by the research scholars can be accommodated by the heading of the patterns of internet use with three main dimensions; (1) target-wise, (2) skill-wise and (3) facility-wise.

1: Target-wise Patterns of Internet Use: Unidirectional target (dealing with single target at a time, ignoring all other things), Bidirectional target (dealing with two targets at a time), Multidirectional target (dealing with more than two targets at a time), and no directional target (dealing randomly without any specific target).

2: Skill-wise Patterns of Internet Use: Computer operating skills (documentation, editing and maintaining), Internet operating skills (browsing, downloading, mailing, Conferencing, contacting and resolving the everyday problems), English language skills (reading, understanding and writing efficiency), Subject dealing skills i.e. command on the subject under process in CMC (Chen, 2003), How long and how much internet using experience one has?

3: Facility-wise Patterns of Internet Use: Mechanical facilities (computer, internet and related appliances having smooth run). Environmental facilities (physical: place of work, body

fitness/good health, weather/surroundings, and psychological facilities: stress less mood, no time pressure and having full support of the teachers). Operational assistance /administration's favor, who guide the user in case of a hardware/software/textural /retrieval problem, informational facilities (quality, quantity and construction of information.

2.2 Information Overload

While going through the literature, it seems that the term information overload (IO) has been discussed in different times by the constructs and terms like: Information revolution (Veneris, 1984); sensory overload (Lindsey, 1959; Meier, 1963); information input overload (Miller, 1960); information pollution (Bray, 2008); information explosion (Alvarado et al., 2003); Informatization (Rogers & Everett, 2000); information fatigue syndrome (McCune, 1998); cognitive overload (Vollmann, 1991; Herrod, 2000; Chen, 2003); Knowledge overload (Hunt & Newmann, 1997), an overabundance of information (Mundell, 2008) and content overload (Himma, 2007). Information overload in students have been studied vastly, the work of Holton & Chyi (2011), regarding the Information Overload and Factor of Time, explored the novel areas of information overload, especially with regard of news and information, and empirically observed the factors associated with the degree of information overload as well as how people perceive the amount of time required to consume information. Its findings revealed that majority of today's news and information consumers feel overloaded with the amount of news they are confronted with. The news interest, Gender and use of specific news platforms and outlets predict the degree of the overload. This study addressed the research question; A: To what degree do people feel overloaded with the amount of news available these days? B: What factors

the perceived degree of information overload? C: Do people perceive certain news platforms as more time-consuming than others.

A questionnaire was structured, adopting the question from the Pew Research Center's 2008 Media Consumption Survey. Majority of the respondents indicated that the most time is needed to read an article in the print newspaper, followed by Web sites, blogs, Face book, and Twitter. It was concluded that more than 70% of Internet users were at least somewhat overloaded with the news and information available. It was also concluded that more traditional platforms are perceived as more time-consuming than newer delivery mechanisms. It was also concluded that those who enjoyed the news more were less likely to feel overloaded by the amount of it available. It meant that information overload, despite being a consequence of information surplus, is also mediated by personal traits such as interest in following the news. Besides the problem of information overload there are many other problems which ultimately result in information overload. From this angel, a study was conducted by Coi, et al. (2011), who believes that problematic internet use (PIU) is an increasing crisis in the Chinese young people. In the study, the occurrence of PIU and the relationships between PIU and psychosomatic symptoms and life satisfaction among young people in colleges and high schools was observed. According to its results, just about 8.1% of respondents showed PIU; young people with PIU were related with males, high school students, urban, eastern and western areas, upper self-report family economy, service type mostly used for entertainment and relieving loneliness and more

An important research study on 'digital divide' was conducted by Munoz (2010). It was observed that 'digital divide' must be studied with more details rather than difference between those who have or have not the internet access like: (1) skills of the internet, (2) time spared for the internet use and (3) the purpose of internet utilization, which are also important to discuss. He observed that: (a) the Internet effects on the performance of the academic activities are indirect, (b) the students having more favorable background for achieving better academic results were observed more positively influenced by the internet. It supported the Knowledge Gap theory, which assumes that most benefit availing students are those who take most advantage of it, in academic performance. Beneficial uses of internet that increase the resources of the students in study, is its use as a social medium to discuss and extend the information achieved in proper learning. This utilization of internet is not randomly distributed within the population, it is found more in students who have more Internet skills and belong to the families having high socio-economic status. It confirms the hypothesis of the appearance of a 'usage gap' that takes apart to those who use the Internet in extra time and those who use it for education and work (Van, 2006). It is a fine development in computer mediated communication (CMC) research. In majority of the cases it is a major factor of creating trouble in internet users. Similarly, Prasitratarnaporn (2010) conducted a cross-sectional field study to observe the theoretical model of the effects of personal factors (socio-demographic variables and personality traits) on an person's opinion of information overload. The data were gathered by a questionnaire and analyzed using SEM techniques and descriptive statistics. A questionnaire in the English and Thai language was prepared; as a final point, the Thai version was used in the full study. Sample size of four hundred respondents was selected for the study.

an individual's perception of information overload. Respondents having strong reserve or emotionality traits were likely to experience overload mainly because of their lack of skills in dealing with the content of information rather than the amount of the information. Those who exhibited higher level of complexity were expected to experience overload as a result of their strong desire to use the information rather than any lack of ability in dealing with the content of information. The respondents who were highly imaginative were the least likely to experience overload and if they do then it was likely to be because of the amount of information they seek and use rather than any lack of skills in dealing with the contents of the information. It was concluded that information overload repeatedly causes other personal troubles and in such situations it is significant to differentiate and care for the fundamental causes and not just the symptoms which often present in the form of stress related problems. It was the first study of this type ever conducted in the Thailand. It provides a line of action for more advanced study of the Information overload in university students, because of a new dimension of the personality traits.

According to Weis (2009), with the advent of the Internet, there is not only a greater capability for one to find needed information; there is also a greater demand to stay informed about current events in the world. This situation is enough to cause information fatigue syndrome, analysis paralysis, or information overload. The information overload is the sense of being besieged by one's information demands. According to Ellington (2005), e-mail, personal web browsing, instant messaging, and seven other sources of information overload exist in an undergraduate student's lifestyle. The research questions of the study are: (1) to what extent are students experiencing information overload, and what are the primary sources of this overload? (2) How do students cope with information overload? (3) What is the relationship between social

surveys was administered during the spring 2009 semester of a public university. It was a quantitative extension of Ellington's (2005) research. Out of total (343) respondents, 92 were male and 249 female, with two respondents unreported. It was concluded that social networking site usage behaviors are not linked with the frequency of experiencing information overload in undergraduate students. It was also observed that the number of coping strategies used by respondents had no significant correlation with the frequency of experiencing information overload. Female respondents showed a slight correlation in viewing SNSs as a source of information overload, whereas males did not exhibit this perception. There was a tiny correlation, but it was statistically significant positive correlation between frequency of experiencing information overload and GPA. It was suggested that information overload is still a remarkably fertile field for researchers; qualitative research can shed light into what factors contribute to information overload, eventually yielding a way to measure information overload as a latent variable. It was recommended that investigations in future will be more helpful to know whether computer mediated communication is more a blessing or a curse when considered in the context of information overload.

A study aiming at the answer of nine questions was conducted by Reeves, et al. (2009). The questions were as: (1) How do users of research content discover the existence of research content which may be useful in teaching and learning? (2) How do they assess whether particular content will be relevant to their needs? (3) How do they access the content they feel to be useful? (4) What problems do they face in using research content in learning or teaching situation? (5) What could be done to make their use of research content easier? (6) How do they use the research content they discover? (7) Do they differentiate between formal, peer-reviewed content and other content they discover through the internet? (8) Do they use content from undergraduate

or masters' dissertations as well as doctoral theses? (9) Do they use student-generated 'research' content on wikis or web-sites? A general online-survey, discipline and institution-themed Focus Groups recordings of student searches and case studies based on semi-structured interviews were employed in the research method. It was concluded that currently, the Universities are not successful in bridging the gap of students' skills-shortage and their academic practice. Yet higher educational institutions are not able to adopt a proper line of action for an improvement in educational system; due to the clear 'digital divide' within their own teaching staff. It was mentioned as well that the students in all universities are uneasy; they cannot get the research material online, and without any type of delay. They also feel difficulties with the complexity of academic discourse. It was noted that most of the students were facing serious complications in accessing research contents and were all eager to talk (sometimes at length) with reference to their dissatisfactions. Main barriers were mentioned as: (1) deficiency of the expertise in the use of search engines. (2) deficiency of the appropriate research guidance to the actual research behaviors of students, (3) difficulty in accessing research content once it has been identified, usually because the local library does not subscribe to certain online journals, (4) lack of adequate ICT skills and (5) the material of the research works is not easily readable.

This is also supporting the idea that due to the lack of facilities students are facing different problems, but it was not recognized as information overload, which is a well defined problem of internet world.

Another study about the technological confidence of youths by investigating their computer and Internet problem solving behaviors in their daily lives is very interesting, in which these research questions were dressed: A: In what ways and to what extent do youths experience computer and Internet problems? B: In what ways and what resources do youths use to solve their computer

and Internet problems? C: To what extent and how do demographics, Internet skills, Internet problem solving behaviors, affect Internet use? (Council, 2006). Data was collected for this paper, as a part of a larger research project on the Internet among youths in Singapore, sponsored by and in collaboration with the National Youth Council of Singapore. In this study following variables were utilized to measure Internet use, Internet skills, Internet related problem solving behaviors and demographical information. Data from both the quantitative survey and qualitative interviews were triangulated to allow comparison of information sources and the verification of the validity of information received (Gordon, 1987). It was concluded that relationships between problem solving behaviors, internet skills and Internet use were fairly positive. It was also concluded that respondents who rated themselves as being confident in independently solving computer problems, were more likely to be males, older and have attained a higher education. It was suggested that since adoption and penetrations are already extremely high among Singaporean adolescents, researchers of the future should concentrate on how to build knowledge sharing networks among youths to contribute to a virtual cycle of Internet help to enhance the quality of youths' Internet connections.

Information overload that leads to a reduction in an individual's performance was discussed very acutely, by Koots (2006) in a research article. He pointed out the main causes of information overload along with five dimensions that influence ones information capacity and the information load was also discussed. Proposed solutions for information overload and further identified managerial and technical solutions are also evaluated. Three dimensions of information overload are discussed in literature as (1) Personal (individual) information overload; (2) Organizational information overload and (3) Customer information overload (Edmund & Morris, 2000). It was concluded that all the reviewed literature agree that information

overload has a negative effect on the performance of an individual. It is observed that information overload leads to ignorance, omission of information, difficulties in identifying relevant information and abstraction of information; all these effects lead to reduced decision accuracy. The information overload increases the time to search through all information. Consequently it causes delay in seeking information and decision making, which results in loss of time. It was mentioned that this research article concentrates only on personal information overload; the results cannot be used for other overload dimensions like organizational overload.

Six general response to the regular exposure to information overload were identified by Eppler & Mengis (2004) as: (1) the allocation of less time to each input, (2) the disregard of low-priority inputs, (3) the re-drawing of boundaries in certain social transactions to shift the burden of overload to the other party in the exchange, (4) the reduction of inputs by filtering devices, (5) the refusal of communication reception (via unlisted telephone numbers, unfriendly facial expressions, etc.) and (6) creation of specialized institutions to absorb inputs that would otherwise swamp the individual. Chen (2003) conducted a study to observe: (a) the difficulties that link up the perceptions of information overload in computer mediated communication, to the students, (b) the impact of the difficulties on students' learning in online discussions, and (c) the students' strategies for avoiding or managing those difficulties. Four research questions were developed to conduct the study; (1) while learning through the medium of computer mediated communication, what difficulties do students experience, that contribute to their perceptions of information overload? (2) Do those difficulties affect students' levels of information processing (surface or deep processing) as observed in their discussion messages? 3. Do those difficulties affect students' interaction with others in online discussions? 4. What strategies do students employ to avoid or manage those difficulties in order to engage in quality learning (defined as

learning that is achievable by deep reflective thinking and interaction with others)? A mixed-method design was employed in the study, combining both qualitative and quantitative approaches to collect, analyze, and report findings. For this study a two-stage purposive sample was used, one for selecting sample classes and another for selecting interviewees from sample classes. The respondents were student volunteers from the selected classes. Questionnaire was consisting of these items: (1) English reading and writing proficiency, (2) prior subject knowledge, (3) technology use experience and (4) online course experience.

It was concluded that information overload is generally not an outcome of only a single variable; mostly it is the result of a mixture of a number of variables. It was suggested that students' cognitive awareness and the construction of the course tended to manipulate the special effects of information overload on their education. It was also observed that interviews with ten graduates near the starting of the semester exposed that different students have experienced a different degree of information overload while, near the end of the semester the results showed that students used a variety of approaches to handle these problems. It was also suggested that in order to promote quality interaction in computer conferencing, not only the medium, instructional methods, and moderating strategies, but also students' personal characteristics, amount of invested mental effort, meta cognitive awareness, and the course structure should be considered.

2.3 Theoretical Framework

This research study will see the problem of 'information overload in university students' with special reference to the 'Knowledge Gap' theory (Tichenor, Donohue, & Olien, 1970), as it has already been given special appreciation in the near past (Bawden & Robinson, 2008). Uses and

Gratification theory (Rosengren, 1970) , Social Learning Theory (Bandura, 1977) and Cognitive Load Theory (Merriënboer, J, & Sweller, 2005) have been studied with special reference to information overload, by (Khaleeq, 2008); (Wei, 2008) and (Chen & Chang, 2009) respectively, but we find it comparatively more suitable because of our own environment, as it is dominantly socioeconomic-status oriented (Taylor, Zhu, Dekkers, & Marshall, 2003).

Knowledge-gap theory, states that as the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status (SES) tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease (Tichenor, Donohue, & Olien, 1970). It was argued that there are five possible reasons for a knowledge-gap: (1) communication skills of high and low socioeconomic status are not equal, education level is not equal so their information processing tasks like reading, comprehending and remembering are not equal; (2) their previously acquired knowledge (amount of stored knowledge) is not equal, those belonging exposure; (3) higher socioeconomic status of the people might have more relevant social contacts, they might associate with the people who are also exposed to public affairs and science news and might discuss such topics with them; (4) the mechanisms of selective exposure, acceptance, and retention might be operating (persons of lower socioeconomic status might not find information public affairs or science news compatible with their values or attitudes, or they just might not be interested in such information); (5) nature of the mass media system itself (it is geared towards persons of higher socioeconomic status), much of the news of public affairs and science appears in the print media and the print media are oriented toward the interests and tastes of higher status persons. In a later study, knowledge gap theory was refined and explored some

Tichenor, & Olien, 1975). The modifications were: A-Knowledge gap is likely to decline, if there is a perceived conflict over a local issue. B-Widening knowledge gaps are more likely to occur in pluralistic communities with numerous sources of information than in homogenous community, with informal but common communication channels. C-When an issue has immediate and strong local impact, the knowledge gap is likely to decline. Two more explanations for the existence of Knowledge Gap have also been suggested. One is that, it is the result of basic communication skills and other factors associated with socioeconomic status, this line of thinking explains it in terms of 'trans situational factors'. The other is that gap is due to differences in motivation; individuals of low socioeconomic status might acquire information just as rapidly as those of higher socioeconomic status, when they are motivated to do so this line of thinking explains it in terms of 'situation-specific factors' (Ettma & Kline, 1977). After it, there was another improvement observed in knowledge gap studies i.e. a widening of the knowledge gap might not occur if people of lower socioeconomic status have a particular need or desire to acquire the information. To examine the media effects on knowledge gap, three types of media outlets have been used: 1) Television, 2) Newspaper and 3) Internet. Shim (2008) believes that internet exposure increases public's general knowledge in health issues. According to Hwang & Geong (2009) the knowledge gap narrows between high socioeconomic and low socioeconomic individuals for health and science knowledge and widens for political issues knowledge, setting, knowledge measurement and experimental designs.

2.4 Hypotheses:

H1: More the 'specific targeted patterns of internet use' less the 'information overload' in university students.

H2: More the 'skillful patterns of internet use' less the information overload in university students.

H3: More the 'facilitated patterns of internet use' less the information overload in university students.

H4: Higher the 'Socioeconomic Status' lower the information overload in university students.

Chapter-3

Methodology

Research Methodology

This is a quantitative research study; the content analysis approach is applied. To collect data analytical survey technique is used, which describes why the situation exists at the moment. It allows an overview about the nature of the whole population being studied (Wimmer & Dominick, 2009).

3.1 Population

2896 AH
All the boys and girls enrolled in universities (Government / Private) of the Islamabad, in the academic session of 2011-12, are the population of this research study. Today, information overload in university students is a genuine problem around the Globe, so the student community easily accessible, is selected as a population (Bawden & Robinson, 2008).

3.2 Sample Size

Sample size is four hundred students. These are selected from four universities of the Islamabad (IIUI, QAU, NUML and FUU). These students are representative of the students of all the universities; so, the result will be applicable to all the universities of the Islamabad (Chaudhry & Kamal, 1996).

3.3 Sampling Methodology

It is a clear phenomenon that mostly for the content analysis in mass media, multistage sampling⁹ technique is applied (Wimmer & Dominick, 2009). In first step, through stratified sampling,

⁹ Multistage sampling is a complex form of the cluster sampling. Using all the sample elements in all the selected clusters may be prohibitively expensive or not necessary. Under these circumstances, multistage cluster sampling becomes useful. Instead of using all the elements contained in the selected clusters, the researcher randomly selects elements from each cluster. Constructing the clusters is the first stage. Deciding what elements within the cluster to use is the second stage. The technique is used frequently when a complete list of all members of the

entire population is divided into eleven different strata (HEC recognized eleven Universities). In second step, four universities are selected by simple random sampling. In third step four faculties (Natural Science, Social Sciences, Computer Sciences and Languages) are selected by purposive sampling. In fourth stage, one hundred students are picked up from these four faculties of each university, equally, through convenient sampling.

3.4 Unit of Analysis

‘University Student’ a boy or girl who is enrolled in BS, MSc, MS or PhD class, in academic session 2011-2012, is our unit of analysis.

3.5 Conceptual Definitions of the Key Variables

Five key variables are used here in this study, which are as following:

- (1) Information overload (IO)
- (2) Specific targeted patterns of internet use (STPOIU),
- (3) Skillful patterns of internet use (SPOIU),
- (4) Facilitated patterns of internet use (FPOIU) and
- (5) Socioeconomic-status (SES).

1: Information Overload:

Eppler & Mengis (2004) defines that with little information; individuals have little to process and consequently make poor decisions. The processing capabilities and quality of decision making, increases with the increase in amount of information, but, after a certain point, when the information exceeds its limits, the processing capabilities start decreasing. Beyond that point,

population does not exist and is inappropriate. Retrieved from, http://en.wikipedia.org/wiki/Multistage_sampling on February 15, 2011.

any received information will not be processed properly. It may lead to confusion and could have a negative impact on the individual's ability to set priorities as well as to remember previous information. It is not difficult to see the affects on both, the individuals and the organizations. The point, from where information processing capabilities start decreasing, the information overload begins to increase. According to Abdel-Khalik (1973) information overload occurs when the decision maker estimates to have to handle more information than he/she can efficiently use. It refers that just like the digestive system of human body; cognitive system works properly if its feed does not exceeds the limits. If a man gets overdose, his digestive system fails to work properly. Similarly, when a man receives excessive amount of information, his cognitive system fails to entertain it, and such a situation is given the name of "Information Overload". This situation of information turmoil results in two kinds of problems, i.e. psychological and, Physical problems. In psychological problems the suffering person feels:

1: stress, 2: decision paralyses, 3: Confusion and frustration, 4: An impair judgment/ Overconfidence, 5: Decreased benevolence to others. While, in Physical problems the suffering person feels:

1: Rise in blood pressure, 2: Weakened vision 3: loss of appetite and 4: Insomnia.

2: Specific Targeted Patterns of Internet Use:

While using the internet, if a student works on a single target/topic at a time, it will be referred as specific targeted pattern of internet use.

3: Skillful Patterns of Internet Use:

While using the internet, if a student is having sufficient skills to operate it, this pattern of internet use is referred as skillful pattern of internet use.

4: Facilitated Patterns of Internet Use:

While using the internet, if a student is having sufficient facilities to operate it (e.g. pleasant environment, teachers' guidance and proper training etc.), this pattern of internet use is referred as facilitated pattern of internet use.

5: Socioeconomic-status:

Family head's financial position and status in the society, represents the socioeconomic status of the student.

3.6 Operational Definitions:

No.	Variables	Symbols	Operational form of the variables.
1	Specific targeted patterns of internet use (Independent Variable)	STPOIU	1.1: Concentrating at a single target at a time, e.g. 1.3: Education, 1.4: Entertainment, 1.5: Communication, 1.6: General information,
2	Information overload (Dependent Variable)	IO	2.1: Relevant information is always extra large, 2.2: Irrelevant information is extra large, 2.3: Disappointment becomes a temperament, 2.4: Feeling of the loss of time Increases 2.5: Information is ambiguous and confusing, 2.6: Accurate decision becomes difficult, 2.7: Remembering facts, recalling detail becomes difficult.
3	Skillful patterns of internet use	SPOIU	3.1: Experience of Internet Use in years. 3.2: English Language Skills

	(Independent Variable)		(Reading, writing and understanding). 3.3: Prior Subject Knowledge (Marks in GAT or last examination). 3.4: Internet information utilization skills (searching, editing, transferring and downloading)
4	Facilitated patterns of internet use (Independent Variable)	FPOIU	Internet facilities provided in the University. 4.1: Teachers' guidance of internet use, 4.2: Updated Digital Library, 4.3: Supporting Courses 4.4: Comfortable environment. 4.5: Satisfactory schedule of library timings.
5	Socioeconomic-status (Independent Variable)	SES	5.1: Per month Income of the head of family of the student.

3.7 Instrument for data collection

A well structured questionnaire, consisting of 33 items with multiple choice options, is used for data collection (see appendix-B)

Chapter – 4

Results and Findings

The population or universe of this research study is ‘the students of BS to PhD level, studying in universities of the Pakistan. Sampling frame encompasses all the students of Quaid-e-Azam University, International Islamic University, National University of Modern Languages and Federal Urdu University Islamabad; and sample size is four hundred students. The sample is taken through multistage sampling technique. All the four universities are divided in different faculties but only the faculties of Social sciences, Natural sciences, Computer Sciences and Languages are picked up for the study. In the next stage, each faculty is divided in four classes (BS, MSc, MS and PhD). Thereafter, all the students are divided on gender wise basis, questionnaire is distributed according the convenience sampling method and responses are collected.

In this chapter, data collected through a 33 items’ questionnaire is analyzed in four steps. In first step, all 33 variables are computed; their frequencies and percentage is obtained through the statistical package for social sciences (SPSS-16.0). In second step, data is derived through the calculation of symptoms of information overload, specific targeted patterns of internet use, skilled patterns of internet use, facilitated patterns of internet use and socioeconomic status of the students. In this step, data is simplified and compressed into two categories, low and high. In third step information overload is analyzed along with all other relevant variables, thoroughly. In fourth step, hypotheses are tested with the help of ‘Statistical Package for Social Sciences’ (SPSS). Linear Correlation of information overload with skilled patterns of internet use, facilitated patterns of internet use and socioeconomic status, is calculated respectively.

thousands while, 68 (17 %) are those who have up to 20 thousand rupees monthly income. Major profession of the respondents' family head is service, 176 (44 %) students are found in this category; 95 (23.8%) are of Business; 61 (15%) Agriculture and 68 (17 %) of the students are affiliated with professions other than mentioned before.

Analysis of the data shows that 87% respondents use internet for their academic goal, 69.8% use it for entertainment, 80.5% for general information and 65.2% for communication.

Data shows that 58.2% students concentrate on a single target at a time, while 55.5% deal with more than one target. The response of 79.8% shows that internet provides extra large relevant information, 58.8% are of the opinion that it provides extra large irrelevant information to its users. 51.2% are feeling that the internet makes disappointment a temperament, of its users. 54.5% respond that information of internet is ambiguous and confusing. Response of 54.8% students shows that they feel shortage of time to process the information given by internet. 55% respondents respond that accurate decision becomes difficult for them while using the internet. 51.8% are those who feel that it creates a problem of remembering and recalling. 86.2% students are good in searching capabilities, 79.55 are capable to utilize all the internet information easily and 82.5% are competent in downloading their targeted information and 74.85 are able to install the windows and other software.

53% student acknowledge that teachers help them in case of any problem relating to the internet and 53.8% are using digital library of the university. 83% respond that environment of the library is very pleasant. 55.8% are satisfied with the library timings. 69.5% respondents respond that university provides them proper training of the internet use.

4.1 Step One: General Analysis of Data

In this study, sample of four hundred students is selected from four universities (Quaid-e-Azam University, International Islamic University, National University of Modern Languages and Federal Urdu University) of Islamabad, taking one hundred students from each.

The respondents from the faculties of social sciences are 105 (26.2%), natural sciences and languages respondents are both equal in number; i.e. 103 (25.8%) and computer sciences respondents are 89 (22.2%) of the whole sample (n = 400). Entire population is divided into four categories on the basis of the academic classes; PhD, MS, MSc and BS of the students. Out of the entire sample, 43 respondents (10.8%) are from PhD, 95 (23.8%) from MS, 124 (31%) from MSc and 138 (34.5%) from BS classes. Prevailing knowledge level of the student is measured through marks obtained in their GAT or last attained examination and it is found that majority of the students (218, 54.5%) has 61-80 % marks, 126 (31.5%) have 41-60% marks, 52 (13%) have over 80% marks and only 4 (1%) have less than 40% marks.

Gender wise position of the respondents is nearly in ratio of three by two (3:2). Male respondent are 57.5% (230) and female are 42.5% (170). Majority of the respondents 43.5% (174) is from 22-24 years age group, second to it is over 25 years age group with 31% (124) strength. Age group of 19-21, is third in ranking, 24% (96) respondents are belonging to it while the last category 16-18 years group is consisting only 1.5% (6) students. Respondents having less than 4 years experience of internet use are 105 (26.2%) in number. Some 104 (26%) students are having an experience of 4-6 years, 102 (25.5%) respondents are using internet for more than 8 years while 89 (22.2%) students are found in the category having 6-8 years experience of internet use. Family income of the students ranging 21-40 thousands per month, is consisting of 128 (32 %); 112 (28 %) are belonging to 41-60 thousands income group; 92 (23 %) are having more than 60

4.2 Step Two: Analyses of Derived Data

The values of five variables, Information overload, specific targeted pattern of internet use, skilled pattern of internet use, facilitated pattern of internet use and socioeconomic status of the students, are taken indirectly with the help of their indicators and symptoms, which are directly observed with the help of questions asked in the questionnaire. The response categories are converted into two, high and low.

1: Information Overload (IO)

Information overload is observed through the help of its symptoms. Eight questions (V16, V17, V18, V19, V20, V21, V22 and V23) of the questionnaire are studied; where as V16, V17 and V20 are found most appropriate. Derived value of information overload shows that out of 400 students 273 (68.2%) are high victim of information overload, while 127 (31.8%) are low victim.

2: Specific Targeted Pattern of Internet Use (STPOIU)

Specific targeted pattern of internet use is observed through six questions V10, V11, V12, V13, V14, and V15; however, V14 is found self-sufficient. So the data is taken only from it, which shows that out of 400 students 233 (58.2%) are high level adopters of the specific targeted pattern of internet use where as, 167 (41.8%) are low level adopters.

3: Skilled Pattern of Internet Use (SPOIU)

Skilled pattern of internet use is studied through the observation of seven items (V7, V23, V24, V25, V26, V27 and V28) of questionnaire. Analysis of the data shows that, V4, V7 and V26 are enough to represent the skilled pattern which shows that out of 400 students 361 (90.2%) are high level skilled and 39 (9.8%) are low.

4: Facilitated Pattern of Internet Use (FPOIU)

To observe the facilitated pattern of internet use, five items (V29, V30, V31, V32, and V33) in the questionnaire are administered; however, only V33 is found the most appropriate. It is observed that out of 400 students 189 (47.2%) are highly facilitated users of internet where as 211 (52.8%) are at low level of facilities.

5: Income of the Family Head (SES)

Seventy seven percent students (308/400) belong to the high socioeconomic status where as 23% (92) are from low socioeconomic status. This data is obtained through the observation of item V8 of the questionnaire.

4.3 Step Three: Comparison of IO with All Other Variables:

V1. It is observed that overall 68.2% students are victim of high IO. The students of Quaid-e-Azam University are least victim (60%) of IO, International Islamic University Islamabad is second (68%), National University of Modern Languages is third(71%) while Federal Urdu University students are the highest victim (74%) of IO.

V2. The students of the faculty of computer Sciences are least victim (62.9%) of high IO and students of the Faculty of Natural Sciences are the highest victim (72.8%) of IO. Faculty of Social Sciences (68.6%) and languages (68%) are nearly equal of high IO.

V3. Students of PhD are least affected of IO(62.8%), BS and MS students are a little more affected (68.1% & 68.4 %) while the students of M. Sc. Are the most affected (70.2%) of IO.

V4. The students having good academic background (over 80% marks in last examination/GAT) are least affected (57%) of IO, students having 61-80 % marks are 70.2% victim of IO, 41-60%

examination are the least affected of IO (50%), but it is not a reliable case; it is the response of only four students, which is not representative of the category.

V5. Gender wise there is no significant difference, male students are (67.8 %) and Female (68.8%) victim of IO.

V6. Students having age between 19-21 years are least (65.6%) victim of IO. Students of 16-18 and 22-24 years age groups are nearly equal victim of IO (66.7% and 67.8%). The students over 25 year's age are the most affected (71%) of the Information Overload.

V7. The students having an experience of internet use of over 8 years are minimum victim (60.8%) of IO. 6-8 and 4-6 years experience group students are a little bit more affected by IO (68.55 and 69.2 %). The students having an experience of less than four years are the most (74.3%) victim of IO.

V8. The students having the highest family income (over Rs.60, 000) are 73.9% victim of high level information overload, where as the students with lowest family income (Rs.1-20,000) are 70.6% victim of this problem. Respondents of medium income group Rs.41, 000-60,000 are 67% victim of IO.

V9. The students belonging to the family, who's head is an agriculturist are least (59%) affected of IO, Servicemen are found (70.5%), businessmen are 62.1%, and others are 79.4%.

'High level Information Overload' and its association with variables (V10 to V33), is presented in the following table:

	Different Variables	Information Overload
V10	Usage of internet for Education	67.5%
V11	Usage of internet for Entertainment	68.8%
V12	Usage of internet for General Information	67.7%
V13	Usage of internet for Communication	69.0%
V14	Concentrate on a single target at a time	73.4%
V15	Deal with more than one targets at a time	75.2%
V16	Internet provides extra large relevant information.	77.7%
V17	Internet provides extra large irrelevant information.	87.1%
V18	Disappointment becomes a temperament, by internet.	71.8%
V19	Information of internet is ambiguous and confusing.	69.8%
V20	Time becomes short to me, to process the information.	91.3%
V21	Accurate decision becomes difficult for me.	77.8%
V22	Remembering and recalling becomes difficult.	72.5%
V23	I can read the English fluently	69.7%
V24	I can understand English promptly	72.1%
V25	My Searching capability is good	71.0%
V26	I can utilize all the internet information easily	70.1%
V27	I can download targeted information easily.	68.2%
V28	I can install windows and other soft wares.	64.2%
V29	Teachers help me in case of internet related problems.	68.9%
V30	I use digital library of the University.	67.9%
V31	I use internet in very pleasant environment.	68.1%
V32	Digital Library timing schedule is satisfactory.	69.1%
V33	University provides proper training of using internet.	68.9%

4.4 Step Four: Hypotheses Testing

Hypotheses are tested using the 'correlation' statistics. Data type is 'ranking' in this study and cases are more than 20, therefore 'spearman's rho correlation statistics (r_s / ρ) is used (nunnally, 1978).

H1: More the 'specific targeted pattern of internet use, less the 'information overload' in university students.

Analysis of data shows that association between information overload and specific targeted patterns of internet use is positive but it is a very weak correlation ($r_s = 0.130$, $n = 400$, $p < 0.01$).

It means more the specific targeted patterns of internet use result in a higher level of information overload, in the university students, at 1% significance level; so the hypothesis is rejected.

This research has proved that 68.8% students are victim of high information overload. Specific targeted pattern of internet use is an abridgment of a number of independent variables, which are playing their role autonomously.

The students who deal with more than one target at a time (V15) are at the highest level of information overload i.e. 75.2%. Those who concentrate on a single target at a time (V14) are a bit low victim (73.4%) of IO. The students who are high level users of internet for academic purposes/general information (V10/V12) are least victim (67.5% / 67.7%) of IO.

The students who are high level users of internet for entertainment or communication purposes (V11 and V13) are nearly equal and average level victim(68.8% and 66.9%) of information overload.

Crosstab Analysis between STPOIU and IO					
			Information Overload		Total
			Low	High	
V10 Usage of internet for Education	Low	% within Usage of internet for Education	26.9%	73.1%	100.0%
	high	% within Usage of internet for Education	32.5%	67.5%	100.0%
V11 Usage of internet for Entertainment	Low	% within Usage of internet for Entertainment	33.1%	66.9%	100.0%
	High	% within Usage of internet for Entertainment	31.2%	68.8%	100.0%
V12 Usage of internet for General Information	Low	% within Usage of internet for General Information	29.5%	70.5%	100.0%
	High	% within Usage of internet for General Information	32.3%	67.7%	100.0%
V13 Usage of internet for Communication	Low	% within Usage of internet for Communication	33.1%	66.9%	100.0%
	High	% within Usage of internet for Communication	33.1%	66.9%	100.0%
V14 Concentrate on a single target at a time	Low	% within Concentrate on a single target at a time	38.9%	61.1%	100.0%
	High	% within Concentrate on a single target at a time	26.6%	73.4%	100.0%
V15 Deal with more than one targets at a time	Low	% within Deal with more than one targets at a time	40.4%	59.6%	100.0%
	High	% within Deal with more than one targets at a time	24.8%	75.2%	100.0%

H2: More the 'skillful patterns of internet use less the information overload in university students.

It is found through the calculation that association between information overload and skilled patterns of internet use is positive and it is also a very weak correlation ($r_s = 0.102$, $n = 400$, $p < 0.05$). It means more the skilled pattern of internet use result in a higher level of information overload, in the university students at 5% significance level; so the hypothesis is rejected.

The data analyzed here in this chapter shows that the students having different skills of internet use are differently affected by the information overload.

Those who are capable of installing 'Widows' and other 'software' (V28) are the least affected (64.2%). Those who can download their targeted information easily (V27) and can read the

English fluently (V23) are also near to the low level of information overload (68.2% and 69.7%). The students who can understand the English promptly (V24), have a good searching capability (V25) and can utilize all the internet information easily (26)are nearly equal prey (72.1%, 71% and 70.1) of information overload.

Cross Tabulation between SPOIU and IO					
			Information Overload		Total
			Low	High	
V23 I can read the English fluently	Low	% within I can read the English fluently	38.6%	61.4%	100.0%
	high	% within I can read the English fluently	30.3%	69.7%	100.0%
V24 I can understand English promptly	Low	% within I can understand English promptly	54.2%	45.8%	100.0%
	High	% within I can understand English promptly	27.9%	72.1%	100.0%
V25 My Searching capability is good	Low	% within My Searching capability is good	49.1%	50.9%	100.0%
	High	% within My Searching capability is good	29.0%	71.0%	100.0%
V26 I can utilize all the internet information easily	Low	% within I can utilize all the internet information easily	39.0%	61.0%	100.0%
	High	% within I can utilize all the internet information easily	29.9%	70.1%	100.0%
V27 I can download targeted information easily	Low	% within I can download targeted information easily.	31.4%	68.6%	100.0%
	High	% within I can download targeted information easily.	31.8%	68.2%	100.0%
V28 I can install windows and other software	Low	% within I can install windows and other soft ware	19.8%	80.2%	100.0%
	High	% within I can install windows and other soft ware	35.8%	64.2%	100.0%

H3: More the 'facilitated patterns of internet use less the information overload in the university students.

It is found through the calculation that .

0.05) It is not significant at 5% level of significance. It means facilitated patterns of internet use have no significant correlation with information overload, in the university students.

Data analysis proves that students who are high level users of digital library of the University (V30) are at the lowest level of information overload (67.9%), among all the observed students at high level of information overload.

Those who use internet in very pleasant environment (V31), their 'Digital Library timing schedule' is satisfactory (V32), seek the help of teachers in case of internet related problems (V29), and avail the opportunity of the proper training of internet use offered by the university (V33) are also at a low level (68.1%, 69.1%, 68.9% and 68.9%) of information overload.

Cross Tabulation between FPOIU and IO					
			Information Overload		Total
			Low	High	
V29 Teachers help me in case of internet related problems.	Low	% within Teacher helps me in case of internet related problems.	32.4%	67.6%	100.0%
	high	% within Teacher helps me in case of internet related problems.	31.1%	68.9%	100.0%
V30 I use digital library of the University.	Low	% within I use digital library of the University.	31.5%	68.5%	100.0%
	High	% within I use digital library of the University.	32.1%	67.9%	100.0%
V31 I use internet in very pleasant environment.	Low	% within I use internet in very pleasant environment.	30.8%	69.2%	100.0%
	High	% within I use internet in very pleasant environment.	31.9%	68.1%	100.0%
V32 Digital Library timing schedule is satisfactory.	Low	% within Digital Library timing schedule is satisfactory.	32.8%	67.2%	100.0%
	High	% within Digital Library timing schedule is satisfactory.	30.9%	69.1%	100.0%
V33 University provides proper training of using internet.	Low	% within University provides proper training of using internet.	32.0%	68.0%	100.0%

H4: Higher the 'socioeconomic status' lower the information overload in university students.

It is found through the calculation that association between information overload and 'socioeconomic status' of the students is negative and it is also a very weak correlation ($r_s = -0.066$, $n = 400$, $p < 0.05$). It means 'socioeconomic status' has no significant correlation with information overload, in the university students.

According to the ranking of the Higher Education Commission¹⁰, the Quaid-e-Azam University Islamabad is number one university of the country. Its students are at the lowest level (60%) of information overload. Information overload in the students of IIUI, NUML and FUU is observed as 68%, 71% and 74% respectively. Students of QAU are at fourth number with 'high SES' (76.0%). SES of the Students of FUU is highest (83%) second to them is the 'high SES' of the students of IIUI (81%); Students of the 'NUML' with 68% 'high SES' are at the fourth position. It is very clear that there is no significant association in SES and IO level of the students of these four universities.

Cross Tabulation of SES and IO with University							
			University				Total
			QAU	IIUI	NUML	FUU	
Socioeconomic Status	Low	% within University	24.0%	19.0%	32.0%	17.0%	23.0%
	High	% within University	76.0%	81.0%	68.0%	83.0%	77.0%
Information Overload	Low	% within University	40.0%	32.0%	29.0%	26.0%	31.8%
	High	% within University	60.0%	68.0%	71.0%	74.0%	68.2%

The profession of the student's family head is also an indicator of the SES. In this study, family heads 'servicemen, businessmen and agriculturists' are found at a level (57.4%, 54.8%

¹⁰ Please see <http://beta.hec.gov.pk/MediaPublication/NewsViews/PublishingImages/Magazine%20Feb-Mar%202012/Magazine%20Feb-Mar%202012.html> .it was accessed on May 5, 2012.

and 45.9%) of 'high SES'. Whereas, the family heads 'servicemen, businessmen and agriculturists' are found at a level (70.5%, 62% and 59%) of 'high IO.

It shows that for some extent there is an association between SES (in terms of profession) and IO, but overall results are not so, it is because of equal and sound facility of digital library and computer laboratories in all the universities.

Chapter- 5

Discussions and Conclusions

5.1 Discussion and Conclusion

In this study, information overload (IO) is observed through its various indicators; V16, V17 and V20 are the symptoms which show the strength of the information overload indirectly. Specific Targeted Pattern of internet use (STPOIU) is indicated by the V14. Skilled Pattern of Internet Use (SPOIU) is calculated through V4, V7 and V26. Facilitated Pattern of Internet Use (FPOIU) is indicated by V 33 and Family Income (SES) of the students is indicated through V8. It is clear that this research study is conducted to analyze the information overload in university students with special reference to the patterns of internet use.

It is observed that 68.2% students are victim of high Information Overload while 31.8 % are feeling low Information Overload. This problem is due to the extra large relevant information, extra large irrelevant information and shortage of time to process the information.

Target wise patterns of internet use are studied through the variables, V10, V11, V12, V13, V14, and V15. The result of the V14 (only one target is concentrated by the student at a time) is found more significant, so the observation of this variable is taken as a specific targeted pattern of internet use.

Skill wise patterns of internet use are observed through different independent variables like marks obtained in last examination/GAT (V4), experience of internet use (V7) and capability to utilize all the relevant information (V26).

Facility wise pattern of internet use is measured through the independent variable V33, which indicates the availability of proper training of internet use to the students by university administration. Socioeconomic status (SES) of the students is noted through the monthly income of their family head (V8).

Finally it is concluded that: Majority of the university students (68.2 %) is suffering from information overload while using the internet. Different factors are possibly responsible of this problem, but the variables under study have shown that extra large relevant and irrelevant information presented in response to a searching activity is the main cause of information overload in university students. These results are comparable to the study of (Kumar & Kaur, 2006).

Specific targeted pattern of internet use has no significant correlation with information overload. These results are contrast to the findings of the Ruff, (2002), who concludes that multitasking (dealing with more than one targets at a time) reduces the feelings of information overload.

Skilled pattern of internet use has also no significant correlation with information overload. It refers that the students having more experience of internet use, having good proficiency of the subject and comprehension of the English language along with the best capabilities of utilizing the internet offered information, feel more information overload. This overload is because of extra large relevant and irrelevant information, not due to any deficiency of skills. This is a global problem as Ruff, (2002), Chen C. Y.,(2003) and (Koots, 2006) have also admitted.

Facilitated pattern of internet use is negatively correlated, but this correlation is as weak as it tends to reach 0. It implies that the students facilitated with proper digital libraries and training of internet use and the students not facilitated are equal, and information overload has no correlation with them.

This result shows that facilitated patterns of internet use never affect the level of information overload. In this study, as a whole, the students are mostly facilitated with the digital libraries, guidance and training of the use of internet. It means that the value of this variable (facilitated pattern of internet use) is nearly constant, therefore correlation is nearly zero.

Finally, the socioeconomic status of the students is negatively correlated with information overload, but this correlation is also as weak as it reaches to 0. It implies that information overload has no correlation with socioeconomic status.

In literature review, it is noted that socioeconomic status has a strong correlation with information overload; therefore it was assumed that our research work will be according to the Knowledge Gap Theory (Taylor, Zhu, Dekkers, & Marshall, 2003). However, the analyses of data implies that there is no correlation of information overload with socioeconomic status; it is due to the reason that Taylor, et.al (2003) collected the data from the respondents who were belonging to rural and urban areas. Their socio economic status was significantly different; their pattern of internet use and the level of available facilities were also diverse. In this research study, respondents are belonging to different residential backgrounds and socioeconomic status, but the internet facilities in their educational institutions are uniform and their internet using experience is also alike. Therefore, socioeconomic status has not affected the level of information overload in the students.

According to the ranking of the Higher Education Commission¹¹, the Quaid-e-Azam University Islamabad is number one university of the country. Its students are at the lowest level (60%) of information overload. Information overload in the students of IIUI, NUML and FUU is observed

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as 68%, 71% and 74% respectively. Students of QAU are at fourth number with 'high SES' (76.0%). SES of the Students of FUU is highest (83%) second to them is the 'high SES' of the students of IIUI (81%); Students of the 'NUML' with 68% 'high SES' are at the fourth position. It is very clear that there is no significant association in SES and IO level of the students of these four universities.

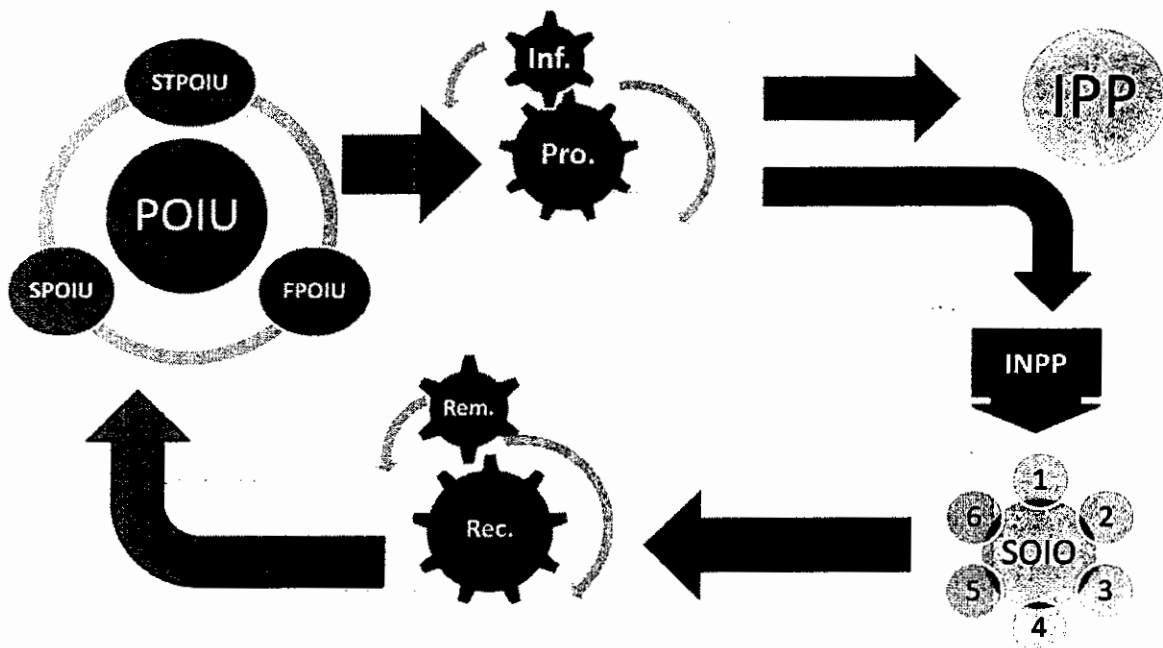
Cross Tabulation of SES and IO with University							
			University				Total
			QAU	IIUI	NUML	FUU	
Socioeconomic Status	Low	% within University	24.0%	19.0%	32.0%	17.0%	23.0%
	High	% within University	76.0%	81.0%	68.0%	83.0%	77.0%
Information Overload	Low	% within University	40.0%	32.0%	29.0%	26.0%	31.8%
	High	% within University	60.0%	68.0%	71.0%	74.0%	68.2%

The profession of the student's family head is also an indicator of the SES. In this study, family heads 'servicemen, businessmen and agriculturists' are found at a level (57.4%, 54.8% and 45.9%) of 'high socioeconomic status'. Whereas, the family heads 'servicemen, businessmen and agriculturists' are found at a level of 70.5%, 62% and 59% high level information overload respectively. It shows that for some extent there is an association between socioeconomic status and information overload, but overall results are not so, it is because of equal and sound facility of digital library and computer laboratories in all the universities.

5.2 Computer Mediated Communication Model of Information Overload:

Computer mediated communication (CMC) is the backbone of 21st century's educational system. In it, the students, teachers, researchers and other concerned persons follow different patterns of

internet use (POIU) which affect directly to the information processing capabilities (IPC). When the information is processed properly, communication is considered as successful, and if it is not processed properly, it may be due to either information overload or some other reasons like stress, confusion, frustration, tiredness and demotivation caused by any other factor (Koots 2011). When the information is not processed properly, its causes are analyzed, symptoms are noted and proper remedy is recommended, in the form of advice to change the pattern of internet use already in practice. Eppler & Mengis, (2003) proposed a conceptual framework to structure research on information overloads, following that idea, a modified framework can be designed as follows, and it can be given the name of 'CMC Model of IO'.



• POIU: Patterns of internet use. • STPOIU: Specific Targeted Patterns of Internet Use . • FPOIU: Facilitated patterns of Internet Use. • SPOIU: Skilled patterns of Internet Use. • Inf. Pro: Information Processing. • IPP: Information Processed Properly. • INPP: Information not Processed Properly. • SOIO: Symptoms of Information Overload. • Rem. Rec: Remedy Recommended.

Figure-1, Computer Mediated Communication Model of Information Overload.

5.3 Limitations of Research Study:

This research study concentrates only on personal information overload, so the results cannot be used for other dimensions of information overload.

Results of the study can be generalized domestically but not outside the country because of different educational environments and digital facilities.

5.4 Suggestions and Area for Further Research:

Students of four faculties are studied in this project; in further studies more faculties can also be included. Extra large relevant and irrelevant information of internet has been found as a major agent of information overload, so in further studies about 'information overload' in university students, this aspect must be concentrated more specifically.

Practical research work of the thesis should be started immediately after the first term. It will facilitate both the student and the supervisor in actual research work, and it will be completed in time. The concerned departments must facilitate the researchers to access the students, teachers and other relevant persons of their studies.

HEC is always trying to create an education friendly environment in the universities, and it has taken a number of measures but the students are not aware of all the facilities. In further research it should be probed, whether the students know about the facilities of internet provided at national and international level, or not.

It should be declared at HEC level that recommended researchers should be entertained by the universities and must be allowed and cooperated to do their work, during the classes. Information overload in university students is not like the organizational information overload, its psychology is different and so it should be studied according to its own environment.

Majority of the university students is facing the problem of 'Information Overload' while using the internet. Therefore, a compulsory and specific training must be given to the students to cope with this problem effectively. Prevailing facilities are not sufficient to cope the problem.

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Appendix – A

List of HEC recognized universities of Islamabad:

- 1: International Islamic University Islamabad (IIUI)**
- 2: Quaid-e-Azam University Islamabad (QAU)**
- 3: Air University Islamabad**
- 4: Allama Iqbal Open University Islamabad (AIOU)**
- 5: Bahria University Islamabad**
- 6: National University of Modern Languages Islamabad (NUML)**
- 7: National Defense University (NDU)**
- 8: Federal Urdu University Islamabad**
- 9: Foundation University Islamabad (FUI)**
- 10: Riphah International University (RIU).**
- 11: National University of Computer and Emerging Sciences.**

Appendix – B

QUESTIONNAIRE

Please read the 'statements' and highlight the star in your choice box.

1: Your University? QAU IIT NUML FUU

2: Faculty: Social Sciences Natural sciences Computer Languages

3: Education: PhD MS M.Sc. BS

4: Marks (%) in GAT / last exam: Over 80 61-80 41-60 Under 40

5: Gender: Male Female

6: Age group (Years): 16-18 19-21 22-24 above 25 Years

7: Internet using experience (Years): Over 8 6-8 4-6 under 4

8: Family income (Thousand Rs. p/m): 1-20 21-40 41-60 above 60

9: Family head's profession: Service Business Agriculture any other

S.No.	Statements	(3) Always	(2) Often	(1) Rarely	(0) Never
10	I use internet for education	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	I use internet for entertainment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	I use internet for general information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	I use internet for communication	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	I concentrate on a single target at a time.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	I deal with more than one target at a time.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	Internet provides extra large relevant information.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	Internet provides extra large irrelevant information.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

S.No.	Statements	(3) Always	(2) Often	(1) Rarely	(0) Never
18	Disappointment becomes a Temperament.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Information is mostly ambiguous and confusing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Time becomes short to me, to process the information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Accurate decision becomes difficult for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Remembering and recalling becomes difficult.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I can read the English fluently.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I can understand English promptly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	My Searching capability is good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	I can utilize all the internet information easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	I can download targeted information easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	I can install windows and other soft wares.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Teachers help me in case of internet related problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	I use digital library of the University.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	I use library internet in very pleasant environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Digital Library timing schedule is satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	University provides proper training of using internet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

..... (Thanks)

