CHAPTER - II

REVIEW OF LITERATURE

Youngsters of today are growing up surrounded by new changes at home and also increasingly gaining access to computers, the Internet, mobile phone and other information carriers such as video games and CD-ROMs. The new arrival of multimedia technologies like the Internet and mobile and telephony services, and their various applications are part of a revolution similar to those that occurred at earlier innovative periods; saw the development of stream power, electricity, radio and television, the internal combustion engine, and the telephone. These established technologies appear to have provoked considerable changes in society and in our everyday lives, more so in the lives of the youth. The rapid rise of social network sites and other genres of social media
among youth are driven by the ways in which these tools provide youth with a powerful space for socializing, learning, and participating in public life (Boyd 2008; Ito et al., 2008; Palfrey and Gasser 2008). A comprehensive search of the literature was done to collect the related information on the possible factors influencing youth in the use of new media, in particular, to internet and mobile phone usage. Included in this review is methodologically sound research, with an emphasis on western, national, and regional studies that addressed new media.

Internet usage pattern

This study conducted by Society for the Promotion of alternative computing and employment on the access students have to ICT brought out some interesting findings such as access to technology is often limited for arts and science students of Kerala because of various reasons. Kerala has made considerable progress in improving computer literacy of its school students; however, it is yet to create opportunities for them to be equipped in new information and communication technologies as they go for higher education. The diffusion of Internet exemplifies the reality of globalization, and education needs to be geared towards enabling our students to thrive in this new world order. Students of arts and science colleges, as compared to students of professional courses, do not receive exposure to ICTs since their courses are largely modeled on conventional pedagogy. The three-year graduation course does not involve any ICT
related activity. There are no ICT programmes to build on the capacity of the students as visualized by the UGC at the college level. Efforts in this direction are ad hoc, and not systematized. The present study also demonstrates the gender divide in the access to ICT, and the social acceptability of accessing Internet. The socio cultural ethos of Kerala makes Internet out of bounds for girls, unless they are from high income groups who could afford connectivity at home. Although Internet cafes have proliferated the landscape of Kerala, these remain male domains, denying safe and friendly access to women. It was suggested that colleges could provide more networked computers to students, and facilitate fair and equitable access to Internet for both boys and girls. Training in ICT needs to be imparted to both students and the faculty members of arts and science colleges of Kerala. Internet literacy does not imply skill sets alone. It also implies knowledge about safeguards, guidelines with which we need to arm our younger generation and the establishment of women friendly internet cafes to make access easier for females. The study clearly brings out the fact that there is a gender divide in the access to ICT and suggests for women friendly cafes to make accesses much easier for females to promote internet literacy.¹

There has been an explosive growth of Internet usage worldwide and this is expected to continue with its use becoming an integral part of everyday life. The Internet provides tremendous educational benefits; however, excessive Internet use can lead to negative outcomes such as poor school performance and social isolation. The survey conducted to study this consisted of a 69-item, anonymous, self-administered paper-and-
pencil questionnaire. Data collected included socioeconomic variables, academic performance, social support and general well being as well as questions pertaining to Internet use. For the purposes of the study, Internet use was defined as, more than 5 hours a day as “excessive use”. The results of the 2735 adolescents who took part in the study, showed that 1349 (49.3 percent) were male and 1383 (50.6 percent) were female. The mean age of the adolescents was 13.9 years [standard deviation (SD), 1.0]. A quarter of the adolescents surveyed reported that they did not access the Internet every day, while 17.1 percent of adolescents reported using it for more than 5 hours every day. Excessive Internet use was associated with (i) no rules of Internet use at home (x² = 313.1, P <0.001), (ii) less likelihood of having confidants (x² = 15.8, P=0.003), (iii) feelings of sadness or depression (x² = 49.6, P <0.001) and (iv) perceived poorer grade/school work (x² = 226.1, P <0.001). The high figures of excessive Internet use (17.1 percent) reported in the study is not equivalent to Internet addiction as no diagnostic instruments were used. However, the study brought out the fact that school counselors and teachers need to be made aware of the prevalence of problematic behaviors associated with excessive Internet use. Training and resources should also be made available to parents and caregivers so that they can play a greater role in setting boundaries and detecting early warning signs. The result of this study was based entirely on students’ self-report and not supplemented with parent or teacher reports. However, an attempt could be made in the future to study the behavioral, educational and psychological problems of the excessive internet users.2
In partnership with the University of South Africa (Bureau of Market Research Youth Research Unit) and the Film Publication Board an exploratory research study was conducted on new media usage among adolescents. The study investigated the diffusion and adoption of different forms of new media such as the Internet and cell phones among adolescents. It found that new media has diffused at a high rate on South African adolescents who are anticipated to continue to adopt new innovative media developments at a faster pace than adults. Increasing access to and enthusiastic usage of new media by adolescents proves that not only are they innovators in this area but they are also changing their life styles to adapt to the new media and to use them to their own benefit.

The importance of new media is beyond contention and will have an increasing impact on the lives of adolescents in South Africa, as well as on the information and communication industry. The main objective of the research study was to investigate the rate of diffusion of new media in the adolescent market and the extent that adolescents have adopted new media innovations. The exploratory research study was conducted amongst adolescents in grades 8 to 12, ranging between the ages of 13 to 18 years. Researchers applied a self-administrated survey approach whereby learners completed the questionnaire themselves during school time and returned it to their educators. A total of 490 learners completed and returned the questionnaires. The most concerning aspect, however, is the adequate protection of children from potential harmful exposure and other risks. The more access adolescents have, the more they will be at risk of receiving and being exposed to inappropriate material. Increased awareness and adequate measures need to be initiated for children to enjoy these new media and to be protected from potentially harmful
exposure and experiences. The research findings correspond with international findings indicated in this article and contribute to the global understanding of the phenomenon. The exploratory research study revealed that new media has an emotional dimension and are not merely communication media. However, the methodological description of the universe remains very abstract in this study.  

The aim of the present survey was to study the use of the Internet by the researchers at Punjab University, Chandigarh in the three fields of knowledge, sciences, social sciences and humanities, so as to determine its impact on the academic routine. For this purpose, 200 questionnaires were distributed, 80 to researchers in sciences, 80 to researchers in social sciences, and 40 to researchers in humanities. This was in proportion to the total number of researchers working in these fields. The survey indicates the following results.

The researchers in Sciences were more positive about the use of Internet and its impact on their educational experience. All of them had a positive attitude toward the Internet and felt comfortable gaining information through it for academic and personal purposes. About 70 percent of researchers in social sciences and 20 percent of the researchers in humanities agreed to the fact that internet had important information resources.

1. 80 percent of the researchers in sciences used the Internet facility provided in their respective departments, whereas only 20 percent went to cybercafés to have an
access of Internet. 90 percent of the researchers who used Internet in social sciences also used Internet in their respective departments whereas 10 percent of them used cybercafés. A majority of the researchers who used Internet in humanities went to cybercafés.

2. 90 percent of the internet use was for academic purposes by the researchers in science, whereas it was only 30 percent in social sciences and 5 percent in humanities.

3. 80 percent of researchers in sciences use the internet for 3-4 hours per week whereas about 20 percent used it for about 8-10 hours per week. In the social sciences, 85 percent of the researchers used it for 2-3 hours per week and 15 percent for about an hour per week. The use of the internet by the majority of the researchers in humanities was only 1-2 hours per week.

4. 100 Percent of the researchers in the sciences had gone online to find information from the e journals that are available through the university library whereas only 40 percent in the social sciences and 5 percent in humanities were using such a facility.

5. 100 percent of researchers in the sciences frequently looked for emails whereas 62 percent of the researchers in the social sciences and 20 percent in humanities had email accounts.

6. 70 percent of researchers in the sciences subscribe to academically oriented mailing lists, whereas only 6 percent of social science researchers were doing so. No researcher in the humanities is aware of any such lists.
7. 20 percent of researchers in sciences, 10 percent in social sciences and none in humanities did online chatting.

8. Researchers used electronic resources more than paper resources, as they felt that it was easier to find resources using the Internet, an observation echoed by educators and librarians who were worried that students were less adept at recognizing credible academic sources when conducting research. Nearly 90 percent of the researchers in the sciences used Internet more than the library whereas it was reverse in the case of social sciences and humanities. About 80 percent of researchers in the social sciences and only a negligible percent of researchers in humanities depended on the printed resources available in the library.

9. Only twenty percent of the researchers in the sciences had published papers in e journals, whereas no researcher in social sciences or in humanities had any e publication to their credit.

10. 70 percent of researchers in the sciences used Internet for seeking jobs online, while it was 5 percent in the case of researchers in social sciences and none in humanities.

11. About 80 percent of the researchers in the sciences, 10 percent in the social sciences, and none in humanities use document delivery services provided by various information/documentation centers. The researchers in humanities are not aware of such a facility.
12. Most of the researchers in sciences (80 percent), social sciences (85 percent), and humanities (70 percent) started using Internet only after joining the university.

13. 99 percent of the researchers in sciences who use the Internet were of the opinion that Internet use had a positive impact on their study and research. 50 Percent of the researchers in social sciences agreed with them. The researchers in humanities did not agree with this statement.

14. The Majority of researchers in sciences, social sciences, and the humanities who used Internet for acquiring information used search engines such as Yahoo, Google, Info seek, and AltaVista.

It is evident from the results that Internet has had a great impact on the academic environment. The researchers in the sciences are making maximum use of the Internet facility provided by the university; however, researchers in other fields still rely on bibliographies and printed journals. Researchers in social sciences and humanities consider their institutional libraries as the last resort for obtaining information. Although academic resources are offered online in their fields also, it may be that researchers have not been taught, or have not yet figured out, how to locate these resources, the academic staff could strive to encourage the use of electronic information sources for study and research and librarians could provide training in the use of online information sources. This study is limited to only one institution hence its findings can be narrow in application. However, for the future research pursuit, comparison between genders could
bring out the difference in usage pattern in different disciplines, which might show a different trend in the results.4

The core of this study conducted by The Centre of Competence for Informal Education the University of Bielefeld, Germany focuses on the investigation of the differences in Internet use by young people of different social origin. Based on analyses of structured interviews, questionnaire survey and feedback forums in the context of online counseling, the present study refers to a wide range of methods and topics in this special field of investigation. Its insights go beyond those of other investigations and come up with new questions in the discussions of educational and youth policies. The results of the data collection concerning the different styles of use and Internet acquiring patterns clearly demonstrate that the socio-cultural conditions of young people’s off-line life will also affect their on line use. In particular, the young people’s educational background as well as their social environment is of central importance here. Significant differences were found between people with a higher and those with a lower formal educational background regarding their skills in internet use. Similarly, virtual space also provides informal educational facilities by means of communication, interaction and self-steered information acquirement. Thus, the participation of different groups in online structures with regard to their options to express opinions and representation of their interests, requires an inequality-sensitive reflection of participation opportunities concerning the different social framing conditions of the young customers (“voice divide”). The present study applied both qualitative and quantitative methods: First by
means of a qualitative and explorative methodology, the phenomenon of diversity in using the internet among young people has been explored. Secondly, for quantification and validation, a quantitative questionnaire survey was conducted concerning general conditions of using the Internet. Finally; the question of participation was examined exemplarily based on a qualitative content analysis of an online forum.  

This study examined the use of Internet resources and the evaluation of their usefulness from the perspectives of Chinese students and academics. The questionnaires were distributed at Peking University, where 706 valid samples were collected. The data was analyzed according to the background of the internet users; the standard of internet resources; internet information-seeking behavior; users’ evaluations of Internet resources and their perceived expectations about future internet services. The study found that users with higher educational degrees tend to spend more time on the Internet and find internet resources more useful than less-educated users. Although internet search engines are the preferred information retrieval tool, other traditional or informal retrieval methods are also used. Many respondents agree that the internet is helpful for narrowing the knowledge gap between developed and developing countries. Besides its richness and high speed, accuracy and authority are the most important factors when users judge the quality of the internet; Future studies could focus on the information-seeking behavior of different target groups, with specific comparisons of Chinese academic users with target groups from developing countries for better understanding on this issue.
**Digital skills and the internet**

Operating modern digital environments, as computer software and digital instruments require users to master a large variety of cognitive, motor, social and emotional skills in order to perform effectively with them. The tasks required in this context include, for example, “reading” instructions from graphical displays in user interfaces; utilizing digital reproduction to create new, meaningful materials from existing ones; constructing knowledge from a nonlinear, hyper textual navigation, evaluating the quality and validity of information; and have a mature and realistic understanding of the "rules" that prevail in the cyberspace. This newly emerging concept of digital literacy may be utilized as a measure of the quality of learners’ work in digital environments, and provide scholars and developers with a more effective means of communication in designing better user-oriented environments. The present paper suggests that, despite the large variety of existing digital environments, digital users employ "only" five major thinking skills that are discussed in this paper: photo-visual skills, reproduction skills, branching skills, information skills, and socio-emotional skills.

The present paper proposes a conceptual framework that refines the term digital literacy. This article takes a first step towards shaping an integrative conceptual frame of reference that encompasses most of the dimensions of user activity in digital environments. This conceptual framework provides scholars and developers of digital environments with a powerful tool to improve our understanding of the skills that people employ in digital environments, and enable developing better user-centered working
environments, which may serve as a basis for future research on the ever-changing directions of digital culture.7

The purpose of this study was to determine whether a digital divide in internet usage exists among college students. Social capital theory was used to show how and why racial differences in internet usage among college students remain within a ubiquitous computing environment. The ability to access and the desire and ability to adopt new technologies represents a form of social capital. Before individuals can adopt new technologies, they must first learn about the new idea and then form an attitude towards it (Shelley et al., 2004, p. 258). Personal characteristics, social networks, and individuals’ knowledge affect how technology is adopted and diffused. The sample for this study consisted of a random sample of residential college freshmen at a midsized public research university in the mid-Atlantic region of the United States. White students were more likely to report engaging in particular types of internet activities, namely, playing games and using the internet for other things, than were non-whites. They were less likely to engage in the use of chat rooms. More experienced internet users were more likely to use chat rooms and play games on the Internet. Among residential college freshmen with assured Internet access, few differences existed in the odds of using the internet in the main ways that college students in particular use the internet (i.e., e-mail, IM, and surfing the web). However, differences existed in the odds of playing games, using chat rooms, and other uses. Although race differences were found in using different internet activities, neither race nor was internet experience significantly associated with
students’ Internet usage levels. This suggests that once college students begin using the internet for various activities, digital divide aspects related to race and internet experience play minimal roles in the amount of time students spent doing each activity. Although this study used a random sample of college freshmen, it was conducted at only one university, and the sample consisted of only residential college freshmen. Thus generalizability to other universities was limited. As this study was only cross-sectional, issues of causality was not ascertained. No measure of family income was made available in the current study which could be a limiting factor for the study.  

**Internet use at home**

The aim of the present research was to examine the relationship between Greek young people aged 12–18 years and the internet through their patterns of internet use in the home. A particular objective of the study was the investigation of the possible effects of social stratification, gender and age on their domestic internet use. A sample of 418 high school students selected from 17 schools in four Greek cities completed a structured self-reported questionnaire primarily concerned with internet use (frequency, purpose and behavior patterns) at home and the types of the parental supervision. The research was carried out during the period 2004–2005. The main findings of the study were as follows: (a) internet access remains at a very low level and is insufficiently used for school purposes, (b) younger students (aged 12–15 years) use it more frequently than older ones for information seeking, concerning school work, (c) the internet is an indicator of social and economic stratification since most young people with access to it come from family
environments with a higher educational and socioeconomic background and live in urban and semi urban areas, (d) boys make up the majority of systematic users, mainly for entertainment purposes, (e) the internet is a place and space safeguarding the “privacy” of young people with the majority of them preferring to surf alone, (f) parental supervision and monitoring was absent largely from the relationship between youth and the internet. Hence it could be concluded from this study that internet use is not significantly affected by students’ places of residence or the educational level and profession of their parents.9

**Internet usage and academic performance**

This study conducted in Netherland examines the social and educational context through which young people acquire computer skills, as well as the extent to which there differences between people from different social backgrounds and between schools with divergent ICT facilities. The study also looks at whether the teaching of ICT skills offers compensation to pupils from disadvantaged groups.

The data for this study was collected from 66 schools in Netherlands, on an average of three classes per school with an average of 21 pupils per class. The schools were located in two large cities, eight smaller towns and four small municipalities. Class-based interviews were used (questionnaires were distributed in the classroom and completed during a lesson). The classes selected were pre-vocational secondary schools (vmbo) grade 3, senior general secondary schools (havo) grades 3/4 and pre-university schools (vwo) grades 3/4/5. A total of 1,213 pupils completed a questionnaire about ICT
in the spring of 2001. An interview with an ICT coordinator at each school was added to the data set. The differences in computer skills, which are gained largely by learning through experimentation, are hardly influenced at all thereafter by secondary education. Only a small portion of the differences found between pupils was attributed to schools (or school classes). Better facilities (more advanced equipment, computer rooms, Internet connections, better support (ICT coordinators and other ICT staff), planned activities (ICT policy plan, attainment targets for pupils) or better ICT education in the lessons do not lead to greater differences in computer skills between pupils. The information society appears to be less susceptible to educational influence than expected. Pupils enter secondary school with quite a few skills and the skills of younger drafts were likely to be greater and greater. It was also observed that when more and more pupils are learning to use a computer by experimenting themselves at home, ICT training would appear not to be a core task for schools. It was found that to an increasing degree, teachers assumed that their pupils possess computer skills; Word processing presents virtually no problems for the vast majority and for many pupils the same applies for drawing and calculation programs (spreadsheets). The familiarity of pupils with the internet is also increasing rapidly; most of them can find their way around the Net, using hyperlinks and search engines; on the other hand, as yet only a minority can construct a website. In other words, pupils are fairly adept at 'reading' on the internet but are not yet fully skilled at 'writing' on it. Teaching could perhaps therefore be directed towards giving them more advanced and therefore often more specialized, skills. Rather than making training of this kind an integral part of the teaching programme, it would seem more sensible to offer it as an
option. Having a separate subject devoted to imparting basic skills appears to be becoming less and less necessary. The researcher is of the view that the investments in ICT in education will produce too little return if the focus is purely on imparting digital skills. Given the size of the investments made, however, it would be wise in the future to examine these arguments critically which would open avenue for more research in this area.¹⁰

A study of Internet usage in Nigerian universities conducted by K.O. Jagboro reveals that the internet is arguably one of the most significant technological developments of the late twentieth century. Despite the added benefits of this tool to learning, teaching and research, a number of problems still plague Internet connectivity and usage in the Nigerian University system. The objective of this study was to evaluate the level of utilization of the internet for academic research at the Obafemi Awolowo University, Ile-Ife, Nigeria. Questionnaires were administered to postgraduate students spanning art and science based programmes. The results from the analysis of the responses showed that the use of the internet ranked fourth (17.26 percent) among the sources of research materials. However, respondents who use the Internet ranked research materials (53.42 percent) second to e-mail (69.86 percent). The study concludes that the use of the internet for academic research would significantly improve through the provision of more access points at Departmental and Faculty levels.¹¹
The recognized potential of technology to improve education has led to several initiatives to foster effective use and integration of technology in the curriculum. The internet as a new invented technology holds the greatest promise humanity has known for learning and access to quality education. It allows students to broaden their academic experience, access important information and communicate to others within academic community. In the light of these therefore, this study examined undergraduate's uses of the internet and its implications on their academic performance at the University of Botswana, Gaborone. An ex-post facto research design was used to find the relationship between variables. Three hundred and six undergraduate students from thirteen systematically selected departments formed the study sample. A modified internet Use scale was used to gather data for the study. The data collected was analyzed using descriptive statistics, chi-square and Friedman test. The results indicate that: majority of the respondents (66 percent access the internet 1-5 hours per week, 33.3 of respondents access the Internet 6-20 hours per week and 0.7 percent of respondents access the internet between 21-25 hours per week. Moreover, most respondents use the internet for the purpose of obtaining course related information. The results also revealed that internet contributes significantly to academic performance of the respondents. To enhance and optimize the use of the internet, so that learning can take place at anytime and anywhere, providing more access to computers and the internet on campus constitutes the major recommendations of the study. An ex-post facto research design was used to find the relationship between variables and in observing what has happened to the subjects without controlling them even though experimental design would serve the purpose
which is to be appreciated. However the study was limited to university of Botswana, hence the findings of the study could be applied only to similar academic environment.\textsuperscript{12}

**Internet usage effect on Social ties and family relationship**

In March of 1998, the Kuwait Foundation for the Advancement of Science and the Kuwait Institute for Scientific Research hosted a Conference on the Information Super-Highway to consider the development and impact of the Internet in Kuwait, and the Islamic World in general, brought in discussions of social impacts of the Internet in Kuwait youth subculture. Kuwaiti youth seem to be the most deeply affected by the transformations in communicative practices enabled by the Internet. Mazeedi, Ismail and Deborah’s paper focused on the ways in which the internet was detrimental to face-to-face social ties between peers and among family members. With the introduction of the Internet, young people argue that they find it more enjoyable to surf the net in the evenings instead of participating in traditional social rituals. Mazeedi and Ismail also found that young people are unlikely to use the internet along with other family members which means that family ties are potentially jeopardized by internet use. Instead, youths share their ideas and positive energies in cyberspace with people they do not know personally. While such interactions foster a positive sense of being one with the world, it also opens Kuwaiti youths to new thinking, perhaps contrary to one’s upbringing, unchecked by traditional authority figures. Only 7.8percent of the students surveyed by Mazeedi and Ismail were taught to use the internet by a family member. Thus the authors conclude that 'families do not set the rules of standards on how to use the internet ethically and academically. (Mazeedi and Ismail 1998). Moreover students often use the
Internet to meet with the opposite sex (more than 30 percent admitted to this as a regular practice). Islamic sanctions against interactions with the opposite sex outside of family and marriage are sinful. In some cases, it was also observed that cyber-dating challenges the role of the family as a matchmaker today.\textsuperscript{13}

This paper focused on the use of e-resources by research scholars of Kurukshetra University, (India). The main aim was to determine the use of e-resources, users’ skills in handling e-resources, and the purpose of their use. Further, the paper aims to highlight the problems faced by research scholars in accessing e-resources, their opinions on e-resources and their views on usefulness of e-resources compared to that of conventional. The survey was conducted through a structured questionnaire circulated among 60 research scholars (PhD and MPhil), taken from different departments of Kurukshetra University and the response rate was 83 per cent. A stratified accidental random sample method was used for selection of respondents and interacting with them. These respondents were among those available in the university library during the survey period (18-28 December 2008). The responses received from the research scholars to 14 questions were presented in the form of tables and figures and analyzed by using a simple method of calculation. The paper concluded that electronic resources have become an integral part of the information needs of research scholars at Kurukshetra University. Further, it was found that e-resources can be good substitutes for conventional resources, if the access is fast, and more computer terminals were installed to provide fast access to e-resources. Google was the most widely used search engine for locating information
electronically. The paper however restricts the study exclusively to use of e-resources by
the research scholars of Kurukshetra University. Few attempts have been made to study
the use of e-resources by research scholars and their impact in India. The paper highlights
the use of e-resources in research at Kurukshetra University with some constructive
suggestions for improvement of electronic resources and services.\textsuperscript{14}

A research review by Bargh and McKenna noted that some scholars feel that
internet provides a positive venue for social interaction that allows individuals and groups
to connect in ways that would not otherwise. Early research by Kraut (1998) and Nie &
Ebring (2000), found that internet usage leads to an increase in depression, loneliness,
and neglect of existing close relationships. In his later research, Kraut found that the
participants who used the internet were more likely to have an increase in:

- The size of their local and distant social circles
- Their face-to-face interaction with friends and family
- Community activity involvement
- Trust in people
- The positive results were more likely among extroverts than introverts

Most psychological and human-computer interaction research focuses on two key
differences between the internet and the other communication forms that evolved
throughout history (telegraph, telephone, radio, television). First, internet users are
relatively anonymous. Second, CMC is not face-to-face and therefore lacks the non-
verbal features of communication such as tone or voice, facial expressions and other interpersonal features such as physical attractiveness. Much of the research in the CMC field explored how these two missing features affect social influence and interaction.

Effect of Internet on Existing Relationships

Many national studies conducted found that internet users were not less likely to visit or call friends and that they actually have larger social networks (DiMaggio et al., 2001).

Howard, et al., (2001) concluded from their large random-sample study that, "The internet allows people to stay in touch with family and friends, and, in many cases, extend their social networks. These survey results suggest that on-line tools are more likely to extend social contact than detract from it. While Nie suggested in 2001 that people who spend more than the average of 10 hours a week on the internet would socialize substantially less with family, friends and neighbor. In Nie and Ebring's 2000 study, the results showed that heavy internet users were actually watching less television and reading newspapers, socializing less often.

Internet's Effect on Forming New Relationships

Parks & Floyd found that on-line relationships were similar to those created face-to-face in terms of their breadth, depth and quality. McKenna (2002) found that a large number of respondents reported forming a close relationship with someone they had first
met on the internet. More than fifty percent of these participants had moved from an internet relationship to a "real life" relationship. Nearly a quarter became engaged, married or lived together. McKenna et al (2002) and Bargh et al (2002) found that people who met on the internet liked each other more than those who met face-to-face first.

The studies revealed that people were better able to express their "true selves" (aspects they felt were important but they weren't able to present in public) and; when internet partners liked each other, they tended to (more than the face-to-face group) to project qualities of their ideal friends on each other. The relative anonymity of being online promotes self-expression. In addition, the relative absence of non-verbal cues and the ability to link with others with similar interests, values and beliefs, facilitates the formation of relationships based on deeper connections such as shared values and beliefs.

While most adults understand the implications of sharing personal information or pictures through online media, many teens do not. A disturbing trend called "sexting", sending or receiving sexually explicit pictures, suggests that teens while socially active online, are not aware of the potential negative repercussions of sharing too much intimate detail of any kind, about themselves. Yet despite the risks of going public with private information or pictures, the internet and social networking sites do not foster anti-social behaviour in most users. Most computer mediated communication research indicates a positive relationship between the internet and forming or maintaining social relationships. The internet appears to complement rather than detract from forming and maintaining relationships.\textsuperscript{15}
Internet usage and personal relations

AlBellamy, A. and Cheryl Hanewicz. explored the influence that personal relations and communications within Internet chat rooms has on a user's Internet Predisposition - a concept developed to refer to what psychologists have vicariously termed as Internet addiction. Two measures of Internet Predisposition were utilized: a quantitative measurement based upon time spent in chat rooms and the Internet, and a four item Internet Predisposition Scale (IPS) was developed by the authors. Data for this study was collected from 114 undergraduate and graduate students in a relatively large university in Southeast Michigan during the months of April – June 1998. A full sample was taken among students who identified themselves as chat room users (for both undergraduate and graduate students). Each student completed a 104-item questionnaire (during class time) that measured a variety of Internet and chat room utilization factors. Results of the study indicate that the IPS is significantly correlated with certain personal relations and communication variables. It further revealed stronger correlation between these factors and the IPS in comparison to the quantitative measurement of Internet addiction. The study also examined the moderate influence of gender, locus of control, and sociability on the relationship between Internet addiction and chat room personal relationships and communications. Gender has shown to have the strongest moderator influence upon these relationships. Finally, the substantial differences in the correlations revealed among males and females attest to the importance of investigating the Internet addiction phenomena from a multidimensional perspective. If such a phenomena as
Internet addiction does exist, it can be explored in future research whether males and females are addicted to similar or dissimilar aspects of computer-mediated communication and their online communication pattern.\textsuperscript{16}

\textbf{Gender differences in internet use}

A study done in 2000, surveyed undergraduate college students to ascertain the gender differences in Internet usage, reported high levels of participation in four of five Internet activities, (Email, World Wide Web, Usenet, Multi-user dungeons, and chat groups) as measured by frequency and hours of use. Furthermore, men and women had different attitudes about their personal experiences with computers, and the difference was not significantly less among younger age groups. With the exception of email, men used the technology more often and had more positive attitudes about their experiences than women. However, when studying undergraduate students’ age difference between the younger respondents and the older respondents varied little and hence it was difficult to generalize the above findings to the general population when the age range was so limited.\textsuperscript{17}

According to Bimber two statistically significant gaps exist on the Internet: in access and in use. The access gap is not the product of gender-specific factors, but is explained by socioeconomic differences between men and women. The use gap is the result of both socioeconomic and gender-specific phenomena. According to Bimber, women are catching up in use of the internet, because socioeconomic differences are
lessening. But women’s intensity of use remains less than men’s. Not only are there
gender differences in intensity, but there are also differences in how men and women use
the Internet. Bimber conducted three random digit dial telephone surveys with each of the
three returning a little over one thousand responses. Age was not a parameter of this
study. Bimber’s research was interesting although it appears that in this study frequency
equates to intensity. Frequent use of the internet was defined for this study as daily use.
More men were going online everyday so, according to this study men use the Internet
with greater intensity when compared to women.18

Weiser surveyed 506 college students and found women use the Internet mainly
for obtaining course information, chatting online, educational assistance, and email. Men
reported greater use of the Internet than females did for shopping, listening to audio
broadcasts, building world wide web pages, searching for romance, searching for hard-to-
find items, pursuing sexual relationships, staying informed with the news, viewing
pornography, and participating in online games. According to Weiser, the gender gap
appears to be diminishing as gender differences were actually differences in age and
Internet experience.19

Female students are in minority in most of the technical institutions in India and
many infrastructural facilities and services are not targeted towards them. Even though
internet facilitates the removal of geographical, social and cultural barriers, it does not
seem to have any significant impact on academic pursuit of female students. Not many
serious investigations have been conducted to study the usage pattern of internet by female students and its impact on their academic and social activities. This study conducted at Motilal Nehru National Institute of Technology, Allahabad regarding usage pattern of internet facilities by female students was done by mining the log files of proxy server for three months. Results of the study showed that approximately 3000 websites were visited and majority of them were non-academic websites. Only 13 percent of internet users were female students and out of which only 11 percent used internet. Dominant use (63 percent) of the internet was for Non-academic purposes. This was true for students with excellent academic performance.  

Gender differences in Internet access and usage have been found in a number of previous investigations. The study reported here extends this work by providing an analysis of the impact of the Internet on men’s and women’s lives. A content analysis of 200 postings from men and 200 from women, on the topic of “Has the Internet changed your life” invited by a news website, was undertaken and examined for gender differences. Results showed more women’s postings mentioned having made new friends or having met their partner, renewing old friendships, accessing information and advice, studying online, and shopping and booking travel online, while more men’s postings mentioned that the Internet had helped or given them a career, positive socio-political effects, and negative aspects of the technology. The results are interpreted as supporting the view that the internet represents an extension of broader social roles and interests in the “offline” world.
Internet use for social networking

Social-networking tools such as Face book and Twitter help community college students become more engaged in their academics. "The uses of social-networking tools have clearly growing in frequency," says Kay McClenney, Director of the Texas-based Centre for Community College Student Engagement, released in a report based on a survey of more than 400,000 students from 663 institutions that assessed the efforts students invested in their studies, their interaction with faculty and staff, and whether they were challenged by their academics. The study revealed that 95 percent of students in the age 18 to 24 use social-networking tools, including instant messages and texting, 64 percent multiple times a day. Just 18 percent do so for schoolwork; 27 percent never do and 5 percent never use them. Among older students, 68 percent used social networking, 41 percent multiple times a day. But just 10 percent do so for school; 49 percent never used social networking for school. Studies show that when more students were engaged in such activities and relationships, the more likely they were to learn. The survey found higher levels of engagement among students who said they used social media multiple times a day for academic purposes, such as communicating with other students, instructors or college staff about coursework, than students who said they do not use such tools at all. It also revealed a potential downside for colleges that do not harness the technology: Students who frequently used social-networking tools but not for academic reasons tend to put less effort into their schoolwork. The author criticizes that
colleges were not taking advantage of the particular set of tools for making connections with students to the extent that they could.22

This study on Taiwan adolescent’s online relationship had three chief purposes: (1) identify Taiwan adolescents’ attitudes and experiences regarding their online relationships, (2) understand teachers’ attitudes and concerns about students’ online relationships and (3) investigate the discrepancies between students and teachers on these issues. The researchers surveyed 494 middle and high school students in Taiwan and interviewed 21 teachers as well. The results indicated that having net-friends is a part of Taiwan adolescents’ social lives. They were quite honest about the personal information they revealed with their online friends and generally had very positive attitudes regarding their online relationships. Some had gone beyond online interactions to meet in person, often without telling their parents or teachers. In contrast, this phenomenon of online friendships is not common for teachers. Most teachers did not have first-hand experiences themselves because they were either too busy or had no desire to use the Internet to form friendships. Teachers generally thought students were too young to handle the complicated, anonymous, casual interactions found in cyberspace and they believed students should know more about how to protect themselves in online relationships. Interpretations and comments were discussed and recommendations for future studies were provided.23

**Cell phone usage patterns**
Philip J. Auter in this study looked at young adult cell phone usage patterns. The results of a survey of 182 students at a large southern university revealed that respondents typically used their phones on an average of 10.5 hours per week. The overwhelming majority with traditional calling features and services that were regularly utilized related to interpersonal communication. Limited support was found for the hypothesis that cell phone use may be utilized to avoid communication apprehension events. Stronger support was found for the hypothesis that interpersonal communication motives are positively correlated with cell phone usage gratifications.24

Sandra Sieber, Joseph Valor Sabatier’s paper aims at showing how young people are developing new and innovative ways of interacting and using technology, the technological background and exposure to technology and the ways in which they acquire new knowledge about technologies, influences the ways in which they use technology for day-to-day communication. The study analyzed how the exposure to Internet influences not only their overall technological knowledge, but also the ways they use one particular technology: mobile telephony. A two-step approach was adopted for the empirical study to find out if the adoption and uses of mobile telephony varied according to the previous degree of technology expertise and also a differentiation was made between young people who are intensive users of the Internet, and those that are not, with an assumption that Internet users had a higher level of technological expertise than people chosen randomly on the street. A structured closed interviews with young people aged between 14 and 22 was administered. The age span for “teens” ranged between (14-18) and for “young
adults” (19-22). Interviewees were purposefully chosen among the overall population of young people in Catalonia, Spain, in representative schools and shopping malls, spanning both the Barcelona metropolitan area and the surrounding less industrial belt. Interviews were conducted in August and September of 2002. The questionnaire focused on the following dimensions.

- Self-assessed level of technology knowledge,
- Ways in which this knowledge had been acquired
- Information about technology news
- Ownership of a mobile phone
- Main uses of the mobile phone
- Decision to adopt the technology
- Services used and their relative importance, both voice and non-voice

An online survey with identical questions was also conducted in 2002. Questions referring to the relative use of different services and their importance were asked in textual form, like from very high to very low. The results showed that adoption of technology does not depend only on technological knowledge, but also on the overall environment of young people, as young people in Spain adopt mobile phones regardless of their technology expertise or the influence of advertising. Usage of the phone does vary depending on the technology savings of each youngster, and young people with high
technological knowledge conceive their mobile phone as a multi-purpose device, while it is reshaping the ways of interaction and lifestyle of some youngsters as well as covering different needs and motivations. Still, more research could be undertaken, to analyze the differences between teens and young adults along with gender differences.

This paper presents the results of a qualitative and exploratory study on content consumption and exchange among college students in the city of Bangalore in Karnataka, India November. The purpose was to learn what specific content, like music or audio, video or movies, text, voice and pictures was consumed and exchanged among college students and also what influenced it. It was found that students' preference for content was determined by their affinity with person/s within their social network. People, who belonged to the same network had shared preferences and therefore consumed and exchanged similar content. Exchange of content was not only due to similar content preferences, but also mutual trust and reciprocity. Music consumption was common and was also the most preferred type of content among college students. Creation of content was not common and was undertaken only by so-called 'tech-savvy' students, who also disseminated content to others in the social circle. Maintaining an online presence was important, since they could consume content and also strengthen their social circle. The latter was through social networking sites and mobile phone communication. There were similarities in the way young users consumed media in emerging market like India and the western world. Some of these were, preference for online privacy, usage of text
messaging for coordinated meetings and predilection for content that was free of charge. Yet, there was a difference in the content that was created.  

This paper reports on an empirical study conducted by Terhi Anna Wilska of the Finnish youth research between consumption patterns and mobile phone use. The data stem from a survey of Finnish young people aged 16–20. The results indicate that young people's relationship to the mobile phone is consistent with their general consumption styles. An "addictive" use of the phone was related to "trendy" and "impulsive" consumption styles and prevalent among females. Technology enthusiasm and trend-consciousness was linked to impulsive consumption and "hard" values prevalent among males. A frugal mobile phone use was not related to gender but to environmentalism and thrifty consumption in general. The traditional gender division in mobile phone use styles that could be observed is interesting in the light of conjectures that genders are becoming more alike in their use of new technology. Technology enthusiasm, usually regarded as a "typically male" thing, was also linked to "female" consumption styles. This reflects the young men's changing relationship to consumption.

**Mobile phone and Interpersonal relationship.**

Ribak, Rivka in this paper investigates mobile phone use as a medium of intergenerational communication. In this paper, the mobile phone is examined as a transitional object in parent-teen interrelationships. Specifically, drawing on ethnographic work conducted in Israel among teenagers between 2000 and 2006, the paper focuses on mobile telephones as physical objects that can connect people and mediate relationships.
It is shown that, for parents and their teenage children, the mobile phone is important more for the possibility of communication and less for the text or voice conversation it actually carries. Analysis focuses also on the role of the mobile phone in enabling inter-generational distance and intimacy, attending to the complicated ways in which the mobile phone is employed by parents and their teenage children. It is argued that the analysis of mobile phone practices needs to take directly into account the specific cultural contexts of production and consumption, as culture, technology and family mutually shape one another.

Studies into the use of mobile email found that Japanese youth preferred mobile to mail to keep in touch with their local friends (Ishii, 2006). The study concluded that Japanese youth used mobile mail to help overcome shyness in communications. A strong correlation was found between weak social skills and a stronger dependence on mobile email. Research in the Seoul metropolitan area studied the differences between male and female adoption of mobile phone features (Sohn & Lee, 2007). While there were specific differences in the habits between males and females, there was no proof that woman were slower to adopt new features than men. The authors concluded more gender specific research was necessary to understand woman’s media usage in a larger social context. Auter (2007) conducted a study of college students’ uses of mobile phones and found that on average, the sample claimed to use their phones for 10.5 hours a week. The author concluded that cell phone activity was highly related to interpersonal communication, and correlated with cell phone gratifications.28
ShiiKenichi in this study examined the impact of mobile communications on interpersonal relationships in daily life. Based on a nationwide survey in Japan, landline phone, mobile voice phone, mobile mail (text messaging), and PC e-mail were compared to assess their usage in terms of social network and psychological factors. The results indicated that young, non family-related pairs of friends, living close to each other with frequent face-to-face contact were more likely to use mobile media. Social skill levels are negatively correlated with relative preference for mobile mail in comparison with mobile voice phone. The findings suggest that mobile mail is preferable for Japanese young people who tend to avoid direct communication and that its use maintains existing bonds rather than create new ones.  

Lara Srivastava examines the subculture that has accompanied the exponential rise in mobile phone usage, arguing that a whole new set of mobile manners have emerged that are in use in different cultures around the world. This article examines two ways in which the mobile phone is impacting daily human existence: social etiquette and spam. The author maintains that the ubiquity of the mobile phone in everyday life has meant that the distinction between the public and the private spheres of human existence has become less pronounced. Srivastava's perspective on mobile culture allows us to approach recent industrial developments from an academic standpoint.
Joachim Höflich’s article develops an understanding of the dynamics between private personal and public social spaces. Höflich sees the phone as an 'indiscreet' technology, which leaks the personal into the public in a way that mirrors a growing cultural trend across all communications media. Höflich points out the conflict of this dual public/private role of the mobile phone. Social networks sustained by mobile phones are intensely private--there is no public directory of mobile phone numbers and yet the contents of the conversations within these private social networks are often performed in very public spaces. Höflich takes a European perspective within his study. The concepts of public and private space regarding mobile phone usage does no travel in the same manner--behaviour accepted in the Nordic countries, is not in more Mediterranean countries, and vice-versa. It is clear that the mobile phone redefines the sense of personal and public space, while also reflecting what may perhaps be more deeply rooted national cultural and social behaviours.31

Kay H. Braguglia, research on the use of cellular phones by undergraduate student’s proposed the following research questions to determine:(1) time spent using a cell phone and the phone features most frequently used, (2) students believe concerning the impact of cell phones on learning in the classroom and during study, (3) students frequency of contact with parents on a cell phone, and (4) expenses incurred by students for cell phone services. Undergraduate students in a School of Business were surveyed in 2007. A sample of 84 of the students from the total of 1150 participated in this research consisting of forty six female and 38 male, of which 26 were from 17 to 20 years and 58
were from 21 to 24 years. Cluster sampling was used to identify the participants... A random selection of four courses was made from the total list of all management courses offered during spring semester and the Questionnaires were given to all the participants during a class period. The results of the study reinforces the belief that college students are tremendous users of cellular telephones and that they use cell phones primarily as a communication tool to talk and send text messages. All the students in the study indicated that they have a cell phone and use voice calls most and text messages most often. A total of fifty five percent of students reported that they spend less than three hours on their cell phone daily and forty four percent spend four or more hours daily on their cell phones. A total of 53.5 percent of the students indicated that they interact with their cell phone during class time in every class they attend. A total of 77.3 percent of students believe that using a cell phone during class seldom or never interferes with classroom learning. However, students believed that cell phones do distract them from study outside of class. Most college students do not use cell phones as a tool to assist with the learning process. Even with increasingly sophisticated technology available on cell phones, the majority of students report that they do not assist with learning either inside or outside the classroom. A total of 76.1 percent of students believed that cell phones seldom or never assist them with learning during class. Over one half of the students (60.6 percent) reported that cell phones seldom or never assist them with their learning outside of class. Students are frequently in contact with others especially parents. Through this contact, parents become an active part in a college life. Sometimes contact with others affects student performance. Bad or upsetting news received over a cell phone
before class impacts on the academic performance. Cell phones have become an additional and expected expense while in college. Majority of the students reported that they have text messaging, calculator, clock, calendar, and an appointment reminder on their cell phone in addition to camera and email. Research suggests that people feel the phone is part of them and that they are not whole without their cell phones in the classroom.

**Social implications of cell phone usage**

Mahout E. Hashem study of Middle Eastern youth’s use of new information technology (IT) and the implications of its use. The purpose of this study was to address the impact and implications of new IT on Middle Eastern youth, namely the way they are using these technologies and the consequences of that use. 225 students of a midsize private university in the Middle Eastern region were selected for the study consisting of 75 males (33 percent) and 150 females (67 percent). Their age varied between 18 - 24 year’s. Thus the 225 youth anonymously responded to a 24 question survey and 45 of them agreed to confidentially self-report on their use of IT, namely cellular phones and internet.

Mobile use variable was based on participants’ responses to a 4-point Likert scale to certain survey questions pertaining to the number of Cellular Phones; duration of use per day; and specificity of its use. Internet use variable was based on participants’ responses to a 4-point Likert scale to a survey questions pertaining to longevity of
internet use at home, at school, and Internet cafés; number of e-mail addresses they have; duration of use per day; specificity of use; etc. Multiple choice questions were asked through which the participants could easily designate their responses. The survey and self-reporting research helped in discovering Middle Eastern Youth’s descriptions of how they feel about the new information technology, themselves and their behaviours concerning the use of that technology as well as their understanding of the results of the use. While they appreciate this technology and admit that they cannot live without it anymore because it became necessary and very beneficial to them, they also perceive and feel its danger, especially what has been called “mobile and/or internet addiction disorder.” However, this addiction does not seem very different from watching too much TV, reading too many stories and articles, working too many hours, or drinking excessively. Addiction to anything seems a way of escaping reality or busying ourselves with things that may help us forget certain real problems and fill certain void in our lives. The new information technology should not be seen as a foe since many of us grow to be dependent on it. It however provides numerous essential benefits like being prompt, economical, expedient, and educational. The study cautions individuals to be alert and to use it wisely with some self-control so that it does not disrupt our daily schedules, neglect our duties towards important relationships or responsibilities, or make our lives miserable. The study brings out a need for more comparative research across cultures pertaining to the impact and implications of new IT on our youth everywhere, which could enlighten youth of different culture and help the youth in the use of this technology.
The paper “The Mobile Phone as the Globalizing Icon of the Early 21st Century presents the findings of a qualitative study of mobile phones and youth culture in Melbourne, Australia. The focus is on how the social dynamic resulting from the use of such communications tools has created a paradigm shift that has changed the nature of inter-human relations. Mobile facilitated interaction is driving a fundamental change in social mores with respect to engagement and commitment, to notions of fluid time versus fixed time and ultimately to urban mobility. Connectivity is becoming central to what it means to have a social identity and users are responding to this by merging bits of data to create their ‘ideal digital self’ through which they communicate socially. This calls into question the nature of ‘digital identity’, indicating it is not only about how much information can be restricted, but rather, what is revealed. The user study consisted of a qualitative analysis of 35 users living in Melbourne, Australia aged 18-30 years. An open-ended interview method was used and the data was analyzed using NUD*IST 4, a computer program for the analysis of qualitative data.

The findings of the study are grouped under four themes.

1. Archetypes
2. Spontaneous social networks
3. Connectivity and privacy
4. Identity
Four distinct archetypes of users emerged from the mobile phone driven subcultures of youth culture:

- **Nomads**
- **Iconic**
- **Updaters**
- **Resistant**

The archetypes provide useful metaphors for understanding youth culture and the central role technology plays in it. Furthermore, they were nomadic, unlike the previous generations, disconnected physically, leading fragmented lifestyles For these users, the handset becomes like a surrogate home base or virtual lounge room from where the nomad can maintain a continual virtual presence, summoning, or joining real and virtual groups at will.

**Iconic**

For these users the mobile phone has transcended its functionality as a communication device and has become an icon or status symbol. In this sense the mobile can create or reinforce identity. The status of the device is much more meaningful than the actual device itself. Hence, the mobile phone no longer just represents communication rather it has become symbolic of the owner’s status, social acceptance and popularity.

**Updaters**
The updater places a lot of importance and derives much pleasure from documenting, circulating and consuming digital accounts of day-to-day experiences.

**Resistant**

The archetype of the resistant user revealed affection, attachment, and identification with their mobile phones, these users are resistant to ubiquitous mobility, desiring connectivity but then not satisfying their need for being unreachable.

**Spontaneous Formations of Social Networks**

The use of mobile phones in the formation of fluid social interaction has accelerated urban mobility. Users once restrained by pre-made plans are now able to spontaneously traverse the city and suburbs, swarming between groups and activities.

**Mobile facilitated fluid interaction**

Mobile phones provide a fluidity of interaction through access to a digital, networked, social world. The main reason to own a mobile phone is for the formation and maintenance of social networks. This sense of always being connected and immediately available has bought about a huge cultural shift. Connectivity frees users from the constraints of the need for a physical locale as the mobile phone becomes the user’s virtual home base.

**Blurring the boundaries between real and virtual interaction:**
Mobile phones have become devices for augmenting the experience and properties of physically co-located encounters rather than simply detracting from them. Teens use mobile phones to bring in the presence of other friends who were not able to make it to the physical gathering, or to access information that is relevant to that particular time and place.

**Interaction only occurs in the context of regular face-to-face contact**

The high level of comfort users experienced moving between the virtual and real world of mobile facilitated interaction exists only in the context of pre-made, real life friendships. This makes mobile phone supported interaction very different to that of other virtual worlds, such as gaming or internet communication, where, at least in some cases, users traverse time and space in order connect with people they have never meet in real life. This conception of the mobile phone as a private mode of communication provides users with a barrier between them and those outside their network.

**Scheduling – as an activity in itself: a proxy meeting**

The nature of mobile technology is such that it lends immediacy to the formation of social networks, and the outcome of this is that the act of scheduling itself becomes an important and pleasurable activity, the physical meeting is anticipated with a series of text messages and mobile phone calls. The intense mobile interaction is creating a new genre of social communication

**Maintaining virtual presence**
Users maintain a continual presence in each other’s lives via text messages. These messages are predicated on the sense of ambient accessibility, a shared virtual space that is generally available between a few friends or with a loved one. They do not require a deliberate “opening” of a channel of communication, but are based on the expectation that someone is in. Mobile phones provide for users a sense of reassurance that connectivity gives. With this comes the consequence of vulnerability against which people try to protect themselves – this creates the seemingly contradictory dynamic of openness vs. isolation. Hence while user’s desire the fluidity of social interaction those mobile phones afford to them, they also resent their intrusion in their lives and are seeking new ways to exert control over digital space, and reduce unnecessary contact.

**Connectivity versus contact ability**

The culture of mobile phone users are labeled as ‘innies’ ‘outies’ or a combination of both. This relates to the way users deal with an incoming call in a social setting in that people either leave the group to take the call, or stay where they are or combine both.

**Conveying meaning without Communicating**

Even when a phone call is not answered, he status of the phone itself reveals a lot about the current availability of the user. For example, a phone that is switched off indicates the person is not in social interaction mode. A phone that is turned off mid-ring...
indicates either that the person is engaged in an activity where it is not appropriate to talk, or may indicate a deliberate rejection of the caller. A phone that rings out or goes to voice mail is seen to mean that the person is willing to be contacted but cannot get to the phone at that particular moment. It is an indication to try again soon.34

The present study conducted by Leopoldina Fortunati, Anna Maria Manganelli, Pui-lam Law and Shanhua Yang focuses on how, after a decade of mobile phone use, the inhabitants of Beijing evaluated the changes in the social and communicative sphere as a result of the introduction of the mobile phone. In this paper, they present the results of a quantitative research, specifically focused on mobile communication. Based on face-to-face questionnaires administered to a convenient sample of 487 respondents, this study addressed the following research questions, on Chinese people’s perception of the importance of this device, to what extent does the adoption and use of mobile phones increase or decrease social connectivity in contemporary China? The results of the study however revealed the fact that samples with low levels of education, income and rural origin felt that mobile phone widened their social network quantitatively and qualitatively. Women scored higher in all technologies that they were using when compared with men except with mobile and fixed telephone, women seem to experience more difficulties in using mobile phone to enhance their sphere of communication, which was attributed to the traditional lives of women in china. Another interesting finding of the study was that mobile phones were socially inclusive than internet while internet was mostly confined to the middle and upper class families. Furthermore, mobile and internet
received the highest appreciation from the respondents when compared to old technologies like radio television and newspaper. Lastly demographic variables played a key role in affecting the judgments with regard to user’s perception of new media. The research however had the limitation because it was convenience sampling that was adopted which resulted in generalizing the results to the population in reference and not to the general population.

In recent years, handheld devices have become one of the fastest growing communication gadgets. Mobile technology is becoming widespread and hence research in this area was felt necessary. Using a survey instrument, the thoughts of male and female students regarding the importance and costs of mobile devices were investigated. It was found that students tend to consider the following features important: battery life, mp3 player, video camera, photo camera, storage memory, Bluetooth, design and elegance, clock, calendar, organizer and reminder. In addition, they are eager to spend an amount of money so as their mobile device to support them. On average, both genders would pay extra money for such features. However, the majority of females think less of the price than males do. On the contrary, most of the respondents do not consider the following as important touch screen, voice commands, chat, teleconference, encryption and cryptography, common use of files, printing. Therefore, they do not spend any money for these features. Interested decision makers try to increase their interest on such features. Moreover, all respondents appear to own a mobile phone while most of them do
not have Internet connection at home. In general, some gender differences are found in the importance and costs of the mobile devices, but they are not statistically significant.\textsuperscript{35}

Today the cell phone has become a powerful media of communication. It is on the verge of replacing traditional media like newspaper, television, internet, etc. It has greatly helped the print and electronic media to provide access to news and information from different parts of the globe. In the relation to this change in the medium of communication Aggarwal Vir Bala attempted to analyze the mobile usage behavior of students of Himachal Pradesh University, Shimla. The study concludes that mobile phone has converted the whole world in to a global village. It points out that the government is a better and preferred service provider. In nutshell it can be concluded that since the mobile is very convenient media to provide information to its users, it must be utilized for giving very positive information to the customers and the government could take all appropriate measures to prevent all unnecessary and irrelevant information which can be harmful to the students.\textsuperscript{36}

Mobile phone use is a prevalent behavior amongst youth. This paper reports the results of a qualitative exploration into social psychological factors relating to young people's mobile phone use. Focus groups were conducted with 32 participants, aged between 16 and 24 years. Three major themes, connectedness, belonging and social identity, were explored in relation to young people's mobile phone use. Consequently, data were analyzed for factors underpinning people's desire to be connected. It emerged
that mobile phones were used to enhance feelings of belonging amongst youth. Additionally, group norms influenced mobile phone behavior indicating that social identity processes were related to mobile phone use. Results of the study provide a foundation upon which to investigate further the relationship between mobile phone use and psychological factors impacting young people's social development. The increasingly widespread use of text-messaging has led to the questioning of the social and psychological effects of this novel communication medium.

McKenna’s recent work on the way the Internet can help people develop relationships was drawn upon and taken a step further by exploring the differences between those who prefer texting (‘Texters’) and those who prefer talking on their mobiles (‘Talkers’). A large sample of 982 respondents completed the questionnaire. Results showed there was a clear distinction between Texters and Talkers in the way they used their mobiles and their underlying motivations. In conclusion, one of the main things this research has showed is that although a large number of people seem to have a mobile phone, they are not all using their phone in the same way. This research has found that there are at least 2 types of mobile users- Texters and Talkers- who differ in aspects of their personality, and who use their phone in distinctive ways. The research has also highlighted how readily users appropriate and co-opt new communication technologies to suit their own agenda, which in the case of Texters, seems to use the medium to establish close perpetual contact with those in their ‘text circle’ and to employ the mobile phone texting facility to establish a forum for real self expression, which in turn mediates the
impact that Texting has on their relationships. The mobile phone has been given particular attention in some recent works. In a study of Norwegian youths, Hegna (2005) notes a significant reduction in feelings of loneliness between 1992 and 2002. Hegna goes on to suggest that the mobile phone is the simple explanation of these changes. According to Barry Wellman, this is a time for individuals and their networks, not for groups. The mobile phone affords liberation from both place and group, and rather than being embedded in one social network, person-to-person interactions continuously switch between networks. “If ‘community’ is defined socially and not spatially, it is clear that contemporary communities are rarely limited to neighborhoods”. There is a shift from place-based inter-household ties to individualized person-to-person interactions and specialized role to-role interactions.37

This paper qualitatively investigated the mobile phone calling and texting patterns among youth in Pakistan. Initially, the data was gathered from seventy seven (n=77) college students aged 17-21 years, who completed twenty four hours mobile phone communication diaries. Completed communication diaries were followed by twenty-three in-depth interviews with the college students to collect detailed background information. Study results revealed congruity of SMS and calling patterns among male and female youth. This research discovered that the majority of youth were extremely high users, fond of texting and low user of voice calls. This research unfolded that the youth do most of the mobile phones communications within their age group, communicate in both positive and negative ways. However, majority of mobile phone communications among
youth could be categorized as problematic with reference to the place, time, and purpose. The main motivation of high and problematic use among youth is the very low priced prepaid packages offered by the telecom operators in Pakistan. Policy implications recommended for the regulatory body were to educate the youth about the appropriate and inappropriate use of mobile phone technology, and issuance of code of advertising to the telecom operators in Pakistan.\textsuperscript{38}

**Social impact of cell phones**

Marilyn Campbell paper on ‘Impact of mobile phone on young people’s social life’ has brought out the fact that the adoption of the mobile phone by young people has been a global phenomenon in recent years. It is now an integral part of adolescent’s daily lives and is for the majority, the most popular form of electronic communication. In fact, the mobile phone has turned from a technological tool to a social tool. This paper explores the impact of the mobile phone on youth peer relationships, on family relationships and on the institution of the school. Young people use the mobile phone in positive ways to organize and maintain their social networks. However, there are also negative impacts on young peoples’ peer relationships. These can include ostracism and cyber bullying. Similarly, the mobile phone has lead to changed dynamics in the family, with issues of safety and surveillance from a parental perspective leading to negotiated changing freedoms for young people. While functional coordination can be beneficial for
the family, there are other problems that can arise such as financial difficulties, non-custodial parent access, as well as over reliance on the mobile phone for safety issues and intrusion into young people lives. Disruptions to lessons, incidences of cheating and bullying are some of the other negative impacts experienced in schools. It has resulted in an evolving relationship within in the family with the increasing negotiating power the mobile phone has given in terms of safety and curfew issues in the family. However the impact of mobile phones on schools has not been widely researched in this study which is the cause for many problems among the younger generations.  

The study of mobile phones resulted from the earlier studies of the “wired” telephone and their networks and uses and gratifications (see Dimmick & Patterson, 1996). In general, studies regarding mobile phones indicated increased usage as the technology develops. Today phones allowed internet access, instant messaging, social networking and much more. These new technologies provide more uses and gratifications for its users. Considering the rapid evolution of the mobile phone, social studies have increased in recent years.

Aoki and Downes concluded that, respondents to a study on mobile phones fit into one of the two groups: “safety” users and “sophisticated” users. Safety users kept their mobile phones for emergencies, while “sophisticated” users were more in touch with the features of the device and more socially active. This study also recognized the rapidly advancing technology and predicted the mobile phone would lead to new social as well as cultural phenomena.
This study by Campbell entailed a cross-cultural comparison of perceptions of mobile phone use in select public settings, like movie, theater, restaurant, bus, grocery store, classroom, and sidewalk. A sample of participants from the U.S. Mainland, Hawaii, Japan, Taiwan, and Sweden were surveyed for social acceptability assessments of talking on a mobile phone in each of these locations. As hypothesized, settings involving collective attention were considered least acceptable for talking on a mobile phone. Results revealed numerous cultural similarities and differences. Taiwanese participants reported more tolerance for mobile phone use in a theater, restaurant, and classroom than did participants from the other cultural groupings. Japanese participants also have a tendency to be more tolerant of mobile phone use in a classroom, but less tolerant of use on a sidewalk and on a bus than were the other participants. The discussion offers theoretical implications of the findings.41

This study “Does Location Matter? A Comparative Study on Mobile Phone Use among Young People” in Finland by Sakari Taipale aims to explore the extent young people living in different kind of cities and towns in Finland use the mobile phones. The article relies on Georg Simmel’s theory on everyday urban life and contemporary analyses on mobile communication. According to them, the mobile phone is an urban phenomenon as it responds best to the needs of hectic urban life. In this study, urban space is typically regarded as the most fertile location for experimental and versatile mobile phone use. Being hectic, impulsive, and full of alternatives, urban space may open
up the possibility of more social situations and opportunities for the inherent use of mobile communication technologies. In contrast to this, the urban living environment contains several competing means and ways to spend free time, have fun and socialize with other people. A quantitative survey data collected in 2005 (N=421 consisted of young people aged 15 to 25 years, living in urban and non-urban location in Finland. The study hypothesized that young people in urban cities employ mobile phones to respond to the demands of a hectic and impulse-rich life. It is said that the urban technology-mediated lifestyles are nomadic and require a lot of temporal and spatial coordination (Kopomaa, 2000). Secondly, the article hypothesized that the use of mobile phones for social and entertainment purposes could be used more common in less-urbanized locations. In the less-urbanized locations the mobile phones could be employed with the purpose of compensating for the lack of physical proximity and alternative sources of entertainment. The research questions formulated were to discover similarities and differences in the use of mobile phones among young people, and to explain possible variations between the urbanized and the non-urbanized locations.

The analysis was based on quantitative survey data and a set of statistical methods. In response to the first research question, the study was able to identify three patterns of mobile phone use, namely use for sociability, entertainment and time coordination. Statistical differences were found regarding the use for entertainment and time-coordination but not unlike the use for sociability. It was observed as it was hypothesized, that the non-urban users are more active mobile ‘entertainers’ than those living in the
urban environment, replete with alternative sources of amusement. Even more interestingly and contrary to what was hypothesized, the study pointed out that the use for time-coordination activities were also more common among the non-urban mobile users. In the non-urban locations, the need for temporal coordination arose, for instance, from longer physical distances and a lack of public transportation that forced people to plan their schedules in advance. It was discovered that factors predicting the various forms of mobile usage differed from one another. Gender, for instance, predicted the use for sociability and entertainment. Girls were more likely than boys to use mobiles for entertainment purposes, Age, in turn, was only related to the use of mobile phones for entertainment and sociability.

The study had certain limitations which could be viewed as future research items. The study focused only on four cities and towns in Finland. In order to further elaborate the findings and generalize them to apply to the whole population, a more representative survey data would be needed. Like in mobile communication studies in general, there was a lack of comparative international studies on spatial disparities in the use of mobile phones. It is mostly unknown, for instance, whether there is any location-based differences in the use of mobile phones in developing countries, and to what extent they are similar to those of developed countries. Furthermore, it would be of great value to have more in-depth qualitative information on spatial differences in mobile telecommunication practices, the meanings urban and the rural mobile phone users attribute to the mobile phone, its mobility and various patterns of mobile phone usage.
This study focused solely on young mobile phone users. It could take into account the patterns of mobile phone behavior and interests among young people with the rest of the population. This study showed there existed variation within the group of 15-25 years as noticeable and measurable. However, the study did not encompass other age groups, socioeconomic factors, such as the level of education or the socio-economic status of respondents, which may be associated with spatial differences in the patterns of mobile phone behavior. It is apparent that older and more educated people may not utilize the mobile phones for entertainment purposes as eagerly as the young users focused in this study.\textsuperscript{42}

The study by the Pew Research Centre’s Internet & American Life Project and the University of Michigan released showed that the average adolescent send or receives 50 or more messages a day, or 1,500 texts per month. Thirty-one per cent sent and received more than 100 messages per day or more than 3,000 messages a month and 15 percent had sent more than 200 texts a day. Girls tend to be much more avid texters than boys, typically sending and receiving 80 messages per day compared to 30 for boys, according to the survey of 800 teens aged 12 to 17 years old and their parents. Seventy-five per cent of teens aged 12-17 had cell phones, up from 45 per cent in 2004, but they made calls much less often -- about five per day -- than they tap out texts. Of the 75 percent of teens who owned cell phones, 87 per cent used text messaging at least occasionally, according to the survey conducted between June 2009 and September 2009. The study found that text messaging has become the most frequent daily communications tool between teens,
ahead of face-to-face meetings, email, instant messaging and voice calls. Two-thirds of teen texters were more likely to use their cell phones to text their friends than talk to them on the phone. The study thus revealed the fact that widespread availability of unlimited texting plans has transformed communication patterns of American teenagers.43

**Mobile phone usage and social capital**

Mobile phones have revolutionized the way people operate within their social networks. Mobile phones have not only increased the pace and efficiency of life, but also allowed for more flexibility in personal interactions. Many European researchers (e.g., deGournay, 2002; Ling & Yttri, 2002; Johnsen, 2003; Licoppe, 2003) have demonstrated that people actively use mobile phones to connect with their friends and family. Katz and Aakhus(2002) have commented on a similar pattern that occurred with the introduction of fixed wire line telephones in the early 20th century and the Internet in the 1990s. Some ICTs like mobile phones and the Internet are perfectly suited to the ideology of an individualistic society committed to networking (Castells, 2001). The mobile phone allows individuals to be apart from, yet maintain a continuous presence with, family, friends, and colleagues (Gergen, 2002, 2003).

One study reported that American parents initially viewed mobile phones as a way of staying in contact with their children throughout the day. Similarly, Ling (2004) reported that European youths are more likely to use mobile phones to build their social networks than contact their parents.
Taylor and Harper study on Social Phenomena of Mobile Phone Use found that mobile phones provided British young people with a means to facilitate their social capital. In the Rutgers project, American heavy mobile phone users reported that they had a better relationship with their friends and parents after they began using mobile phones. Specifically, the heavy mobile phone users and the participants who self-reported mobile phone addiction agreed more than the others that they needed to have a mobile phone to keep up with their friends (Chen & Lever, 2005).

In this study, media dependency provides a framework for demonstrating how college students depend on mobile phones to get information or support from family and friends. This study also attempts to investigate whether college students believe that mobile phones are necessary to maintain and build social capital on campus. Future studies however can consider cultural difference, use of different scales and translations. Random samples or larger samples could also help to get more representative results.44

**Health risks in mobile usage**

The mobile phone combines the technology of the wireless communication with that of the telephone and uses specific frequencies called microwaves, a sub-set of radio waves with frequencies ranging from 300 MHz to 3GHz cellular phones and their base stations emit pulsed microwaves in the environment with phone users exposed in the near-field and the general population exposed under far-field conditions. Some reported
biological effects associated with these radiations include radio frequency sickness, troencephalographic and blood pressure changes, cancer risks and genotoxicity.

A survey of persons using mobile phones was conducted in order to gather data on mobile phone usage patterns, which were maintained on a predesigned questionnaire. There were 91 males and 9 females (16-55 yrs) of which 76 belonged to upper middle class socio economic status. They worked as businesspersons, teachers, bank employees, doctors, surveyors, sales executives, mechanics, medical representatives and some of them were students. The duration of phone use varied from 1-5 yrs, with daily use of phone from 1-18hr. They mostly kept the phones in their pockets while on move or on the table when in office or when at home. Some lusers complained of sleeplessness, headaches, memory loss, loss of attention and heating sensation on mobile phone use. Since exposure to radiofrequency radiations has been reported to affect physiological, neurological, cognitive and behavioral changes and to induce, initiate and promote carcinogenesis, such an underlying threat to human health, also exists for mobile phone users. 45

This article on the hazardous effects of mobile phone radiation attempts to present the basic biophysics of these devices and explain the health hazards of electromagnetic radiation exposure in terms of thermal and non-thermal effects. Tiny electrical currents exist in the human body due to the chemical reactions that occur as part of the normal bodily functions, even in the absence of external electric fields. For example, nerves relay
signals by transmitting electric impulses. Most biochemical reactions from digestion train activities go along with the rearrangement of charged particles. The heart is also highly dependent on orderly flow of electric current to ensure proper functioning. Low-frequency electric fields influence the human body just as they influence any other material made up of charged particles. When electric fields act on conductive materials, they influence the distribution of electric charge at their surface. They cause current to flow through the body to the ground. Low-frequency magnetic fields induce circulating currents within the human body. The strength of these currents depends on the intensity of the outside magnetic field. If sufficiently large, these currents could cause stimulation of nerves and muscles or affect other biological processes. Heating is the main biological effect of the electromagnetic fields of radiofrequency fields. In microwave ovens, the same property is employed to cause heating. The heating effect of radio waves forms the underlying basis for the current safety guidelines. Biological effects that result from heating of tissue by RF energy are often classified as thermal and non-thermal.

Thermal effects: Exposure to very high RF power densities, to the order of 100 maw/cm² or more can result in heating of biological tissue and an increase in body temperature.

Tissue damage in humans could occur during exposure to high RF levels because of the body’s inability to cope with or dissipate the excessive heat that is generated. The extent of this heating depends on several factors including radiation frequency, size,
shape, and orientation of the exposed part, duration of exposure, environmental conditions and Efficiency of heat dissipation. Additional factors include the angle at which the phone is held and also the model of the cell phone. The testes and the eyes have been found to be especially vulnerable. Changes in sperm counts and altered sperm mobility could occur after exposure to very high temperatures. Exposure to EMF may also alter DNA, which would make it possible for transmission of genetic diseases to the offspring. General eye irritation and cataracts have sometimes been reported in workers exposed to high levels of radio frequency and microwave radiation, but animal studies do not support the idea that such forms of eye damage can be produced at levels that are not thermally hazardous. There is no evidence that these effects occur at levels experienced by the general public.

**Non-Thermal effects**

Neurological: Since the head region is the most affected by mobile phone radiation, research on neurological diseases has been the most intense. Specifically, brain tumors have been intensively studied in case-control studies, prevalence studies and in in-vitro analyses. Risk factors such as predominant one-sided usage, high daily usage and exposure for a large duration of time (usually>10 years) have been found in some studies to raise the risk of brain tumors.5 various tumors studied include gliomas, acoustic neuronal, meningiomas and neurocytomas.
Non-specific symptoms: Some individuals report “hypersensitivity” to electric or magnetic fields which are characterized by a variety of non-specific symptoms, which afflicted individuals attribute to exposure to EMF. The symptoms most commonly experienced include dermatological symptoms (redness, tingling, and burning sensations) as well as neurasthenic and vegetative symptoms (fatigue, tiredness, concentration difficulties, dizziness, nausea, heart palpitation, and digestive disturbances). The collection of symptoms is not part of any recognized syndrome. There is little scientific evidence to support the idea of electromagnetic hypersensitivity. Recent systematic review found no consistent reactions under properly controlled conditions of electromagnetic field exposure. Research on this subject is difficult because many other subjective responses may be involved, apart from direct effects of fields themselves.

Psychiatric Problems: Recently, a phenomenon called as ringtone anxiety (better known as the neologism, ‘ringxiety’) was described by psychiatrists in whom users imagine their phone to be ringing or feel it vibrating when it actually is not. Trials are underway to examine effects of mobile phones on sleep disorders, memory impairment and other psychiatric conditions.

Cardiovascular: It has been shown that mobile phones can cause electromagnetic interference in the functioning of implanted pacemakers. The pacemaker can be affected either by impedance to delivery of the stimulated pulses that regulate the heart’s rhythm or by causing the device to deliver irregular pulses and leading to arrhythmias or by
causing it to ignore the heart’s rhythm and deliver pulse at a fixed rate. As the prevalence of heart disease requiring pacemaker increases, we can expect a larger number of people to be living with these devices. Thus, a greater population subgroup would be exposed to the interference of mobile communicating devices. Endocrine: Influence of electromagnetic fields emitted by GSM-900 cellular telephones on the circadian patterns of gonad, adrenal and pituitary hormones in men was studied by a French group. The study investigated the effect on steroid (cortical and testosterone) and pituitary (thyroid-stimulating hormone, growth hormone, prolactin and adrenocorticotropic) hormone levels in healthy male volunteers. Each individual’s pre-exposure hormone concentration was used as his control. The circadian profiles of prolactin, thyroid-stimulating hormone, adrenocorticotropic and testosterone were not disrupted by RF EMFs emitted by mobile phones. Reproductive: Rats subjected to radiation from mobile phones were found to have damaged DNA and low sperm count, leading to infertility and reduction in testis size.

Miscellaneous hazards: Mobile phones can spread infections especially in hospitals. It is not safe to carry cellular phones to sterile environments like the operation theatres. It has been suggested that they may cause interference with medical equipment, especially in critical care units, though data are not entirely conclusive for all mobile frequencies.
Theoretical background

Is Uses and Gratification Theory

Originated from the communication theory literature, the Uses and Gratification theory is one of the most useful theories for explaining consumer patterns of media use. This theory seeks to recognize the important role of the individual in the use of mass media by focusing on what people do with mass media (Katz, 1959; Klapper, 1960). This theory has been proven to be helpful in understanding consumer motivations for media use and has been applied to scenarios ranging from radio, telephone, TV, cable TV, TV remote controls, Internet, and recently mobile phones. Based on the previous studies, researchers have classified two motivational dimensions associated with this theory, namely content gratifications and process gratifications (Cutler and Danowski, 1980; Stafford and Stafford, 1996). The former relates to gratifications that result from learning information from media content and subsequently putting it to use in practical affairs while the latter focuses on pleasurable experience of media content which are realized during media consumption. By analogy, mobile entertainment users may be motivated by the variation of entertainment services offered by their mobile network (i.e. content gratifications) or they just use the entertainment services to derive a hedonic experience (i.e. process gratifications).
The Uses and Gratification theory postulates that active users seek gratifications in media and technology use based on their individual motivations. In other words; different consumers have different motivations underlying the use of particular media and technology. Previous studies have suggested many underlying motives, both utilitarian and non-utilitarian, for media use including ease of use, usefulness, information seeking, relaxation, entertainment, social interaction, escape, companionship, time consumption, status, and other function related motives. Examination of these different motivations can help clarify the links between personal characteristics, such as those related to emotional and psychological factors and different uses of media. This theory thus provides a useful theoretical framework for better understanding of the specific reasons consumers use particular media and technology.

Media richness theory

The media richness theory focuses on the informational effectiveness of media to accomplish a task. However, human communication is not for only task completion, people communicate to define and redefine social relationships (Trenholm et al., 2004). Individuals might choose a medium based on its effectiveness to produce a desired social relationship.

Social presence theory

This theory was founded by Short Williams and Christie in 1976. This approach is the groundwork for many theories on new medium effects. The idea is that a medium’s
Social effects are principally caused by the degree of social presence which it affords to its users. Social presence means a communicator’s sense of awareness of the presence of an interaction partner. This is important for the process by which an individual comes to know and think about other persons, their characteristics, qualities and inner states (Short et al., 1976). Thus, increased presence leads to a better person perception. In the social presence theory social presence is defined as the degree of salience of another person in an interaction and the consequent salience of an interpersonal relationship. Short et al., (1976) stated that electronic communication media differ in their “capacity to transmit information about facial expression, direction of looking, posture, dress and nonverbal, vocal cues”. Electronic communication media, with their paucity of nonverbal cues, are said to be low in social presence.48

Social capital theory

The origins of social capital theory lie primarily with Pierre Bourdieu (1983) and James Coleman (1988) He defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition”. Similarly, Coleman (1988) describes social capital as “a variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain actions of actors – whether personal or corporate actors – within the structure.” More recently political scientist Robert Putnam has assumed a central place in considerations of social capital. Putnam asserts that the “core idea of social capital theory is that social
networks have value”. He first defines social capital as “features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions”, and then later refined this to “connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them”. Robert Putnam is of the view that social capital is to be understood as social ties, connections, networks, and norms from which individuals and collectivities benefit. Putnam states that social capital is both a private and a public good, with benefits accruing not only to those persons making the investment in social networks but also to the wider community in the form of positive externalities.48

The two dimensions of social capital mentioned by Putnam are bridging and bonding. He defines “bridging” as outward-looking networks and connections among different kinds of people – like the civil rights movement – and “bonding” as inward-looking networks bringing together similar kinds of people – like church-based women’s reading groups. Furthermore, Putnam claims that bridging social capital spans “diverse social cleavages” while bonding social capital reinforces exclusive identities and homogeneous groups. De Souza Briggs (2003) adds that “by connecting persons and other social ‘sites’ with distinct traits, bridging ties often constitute bridges across roles, status differences, material and symbolic interests, space, norms, and even worldviews.”

Putnam and others also suggest that bridging and bonding social capital have different consequences and effects. Speaking generally, Putnam opines that bonding social capital is good for undergirding specific reciprocity and mobilizing solidarity while bridging
networks are better for linkage to external assets and for information diffusion. Social capital that binds people according to Xavier de Souza Briggs is, good for ‘getting by’, while bridging social capital is crucial for ‘getting ahead’. Therefore, according to existing literature, while bonding social capital is geared towards survival, bridging is oriented to moving ahead, development, and growth.49

**Diffusion of Innovation Theory**

Rogers’ diffusion of innovations theory is the most appropriate for investigating the adoption of technology in higher education and educational environments (Medlin, 2001; Parisot, 1995). For Rogers, “a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome”. It is composed of two parts: hardware and software. While hardware is “the tool that embodies the technology in the form of a material or physical object,” software is “the information base for the tool”. Also software as a technological innovation has a low level of observability, hence its rate of adoption is also slow. Rogers defines diffusion as “the process in which an innovation is communicated thorough certain channels over time among the members of a social system”. As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations.50

**Manifest and Latent functions**
Functions are observed consequences which cause adjustment within a social system. Motive, on the other hand, is the subjective orientation of the actor engaged in behaviour. The functions are those objective consequences contributing to the adjustment or adaptation of the system that are intended and recognized by the participants of the system; Latent functions, correlative, being those which are neither intended nor recognized”. Merton went on to suggest that it is through the focus on latent functions that sociologists can make their distinctive contributions to understanding human societies. The exploration of latent functions can point the analysis toward theoretically important issues; can advance our knowledge of socio cultural system.51

Dramaturgical account of social interaction

Goffman provides what he calls a “dramaturgical” account of social interaction as a kind of theatrical performance. Individuals seek to create impressions on others that will enable them to achieve their goals (“impression management”), and they may join or collude with others to create collaborative performances in doing so. Goffman distinguishes between “front-stage” and “back-stage” behaviour. When “on stage or in a social gathering, individuals tend to conform to standardized definitions of the situation and of their individual role within it, playing out a kind of ritual. While on back stage, they have the opportunity to be more honest: the impressions created while on stage may be directly contradicted. Nevertheless, this approach has several implications for our understanding of young people’s uses of digital media. It is most obviously appropriate for understanding online interactions, instant messaging, chat or social networking,
through mobile communication, where questions of rules and etiquette are clearly crucial—not least because of the absence of many of the other cues (such as visual ones) which one conventionally use to make identity claims in everyday life. The issue of performance is also very relevant to the ways in which young people construct identities, for example, through the use of, e-mail signatures, IM nicknames, personal homepages and blogs. The question of whether online identities are more or less honest or truthful than offline ones has of course been a recurrent concern in studies of computer-mediated communication.⁵²
End Notes


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