Chapter I

Introduction and Conceptual Framework
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1.1 Introduction

Education is the greatest asset for every human being. It is the backbone of the overall development of individual as well as nation. In the ancient period education took place simply through oral lectures, dialogues, reading books, use of chalks and blackboard. Moreover traditional system of education is based on a teacher-centred education. But in the modern society, technology brought greater improvements in the education system because technology plays an important role in student-centred education. With the help of technology, students can progress at their own pace and can become an active participant to receive information. Technology offers an opportunity to the students to accommodate different learning styles and motivate them to self-improvement and self-learning. It benefits both strong and weak students with their particular demands. The use of several multimedia resources such as television, videos, computer and internet provides more challenging and engaging learning environment for students. Technology aids student expression. Use of technology in classroom instruction ensures co-ordination of working of ‘head’ ‘eyes’ and ‘ears’. It provokes thinking, gives an opportunity to see, handle and manipulate things and express views and comment upon. With technological aids, students can make a creative presentation of the information they have acquired. Through the use of technology students can have an easy access to resource persons, mentors, researchers, professionals, and peers throughout the world. Technology can advance the learning process by making it faster, cheaper and wider reaching which were not possible before. It plays a vital role in developing good citizens to the information society by reframing the teaching learning process.

Technology has revolutionized the field of education. It is very much helpful for both teachers and students in the teaching and learning process. Technologies modify the way of teachers’ teaching strategies to satisfy the need of the learners. In this modern era teachers use projectors, computers and internet in their classrooms for effective teaching. They also use various tools such as web chats and emails to provide feedback to students as well as parents. Technology helps the teachers to
make students to work on their own, to think on their own and to solve problems on their own. With the help of technology, the teachers make the teaching learning process very attractive, inspirational and effective.

The use of technology, particularly the internet in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable better management of education systems. The influence of internet cannot be ignored in our students’ lives. On one side internet provides more positive impacts on students’ lives, but on the other side this technology can get through some users particularly students, to the point that interferes with normal living, progressing into an addiction. Therefore, it becomes essential for us to be aware of the impact of internet addiction on students’ behaviour, their psychological well-being and development.

1.2 Information and Communications Technology (ICT)

Today’s universe is highly influenced by Information and Communications technology (ICT) and its applications. ICT has become an integral part of our everyday life. It can improve the quality of life and contribute to the social and economic development of the country. Nowadays people cannot think of a world without ICT. All the fields such as military, business, education, entertainment, mass media, communication, health, employment, agriculture and weather forecasting are touched with ICT.

Blurton (1999) defines “Information and Communications technologies are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information.” Unwin (2009) views ICT as an umbrella term which covers any communication device or application encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems and so on as well as the various services and applications associated with them such as videoconferencing and distance learning.

1.3 ICT in Education

ICT has brought a revolution in all the fields, especially in education. Information and Communications Technologies (ICTs) such as radio, television, telephone, computer and internet are used as a potent tool to educational change and reform. It helps in making education meaningful and accessible to the large number of
people. It is a tool in the hands of educationalists for solving problems in all areas of education. ICT has a potential to promote quality education, internationalization of education and lifelong learning. Moreover, it has influenced all stages of education starting from pre-primary to university education and from formal to non-formal education. When ICT is used properly, it can help to expand access to education and strengthen the quality of education.

In the knowledge society, schools cannot be content with the limited knowledge to be transmitted in a fixed time. They have to move towards the technology-integrated education to deal with this knowledge. So ICT should become a part of all the activities of the school. Hence, immense technical knowledge and positive attitude towards ICT are important for the success of teaching and learning process.

In education, communication process takes place between teachers, students, and management. ICT provides students to be more capable of using information and data from various sources and significantly surveying the nature of the learning materials. Teachers use ICT for easier planning and preparation of lessons, designing teaching materials and presentation of materials. It has also enabled the educational management system to carry out various functions such as admissions, conducting exams, maintaining various records, setting up coordination between the institutes and alumni network. However, ICT today is mostly focused on the use of computer technology for processing the data. In this perspective, advantages of ICT in education can be listed as follows:

1. **Quick access to information:** - Information can be accessed in seconds by connecting to the internet and surfing through web pages.

2. **Easy availability of updated information:** - Desired information can be accessed easily at any comfortable place. This helps the students to learn the updated content and it helps the teachers to update the latest teaching learning strategies and related technologies.

3. **Connecting Geographically dispersed regions:** - Students from different parts of the world can learn together by using online and offline resources. It enriches learning experiences. Such collaborative learning can result in
developing divergent thinking ability in students and respect for the varied nature of human life and culture.

4. Catering to the Individual differences: - Crowded classrooms have always been a problem for the teacher to consider the demands of every student in the class. Hence, ICT can contribute in catering to individual needs of the students as per their capabilities and interest.

5. Wider range of communication media: - Different means of communication in the teaching learning process have been introduced with the help of ICT. Offline learning, online learning, blended learning, collaborative learning and individualized learning strategies can be used in educational institutions and it enhances the quality of group as well as individual learning.

6. Wider learning opportunities for students: - Application of latest ICT in education has provided many options to the learners to select the course based on their aptitude and interest and evaluate their own progress through different online quizzes and tests. This provides greater opportunity for getting jobs and reducing the unemployment problems.

1.4 ICT in Classrooms

ICT is the key to make the teaching-learning process more effective, entertaining and more interactive. Teachers should use various technological tools in their classroom for active engagement of students in the learning process. Meanwhile technology stimulates and attracts the attention of the students in the classroom. There are different types of technologies in the classroom which make education and learning a fun experience for students. The following are some of the important information and communication technologies used in the classroom.

1. Radio: - Radio has been used in education from the time it became available. It has been used for school broadcasts, in-service teacher support and training, adult literacy and basic education campaigns. In many countries at schools and colleges, radio has been used for teaching a wide range of subjects along with tutorials, print materials, local listening groups and face-to-face meetings. Several large distance teaching universities around the world use radio in many of their distance education courses.
2. **Television:** - Television has the unique aspect of combining audio and visual technology and thus it is considered to be more effective than audio media. It serves in providing discovery learning and cognitive growth of its viewers. Better accessibility of television helps to bring in learning materials to the masses more directly and effectively than other educational media. Television comes into its own in a mixed-media distance education course, used to demonstrate scientific or laboratory experiments, to broadcast field trips, case studies, or performances and to help visualize dynamic processes and sequences of events.

3. **Projectors:** - Projectors are a basic way to introduce technology to students in the classroom. Teachers can present a lesson using meaningful and colourful transparencies that grasp the attention of the students immediately. The projector attached with computer has more benefits. It can help the teachers to show the students documentaries, short study films, and PowerPoint presentations which contribute to increase retention. This is used in the fields of psychology, biology and Engineering etc.

4. **Computers:** - Computers have changed the present way of teaching-learning process. It can be used by teachers in their classroom to assign work to students and study in groups. Teachers can use computers to illustrate visual related subjects and complicated lessons which help students to learn easily. Students can access notes, dictionaries, books and encyclopaedia on computer with the help of the internet and special educational software which are extremely user-friendly and promote better learning process.

5. **Teleconferencing:** - Teleconferencing refers to an interactive group communication between two or more people in two or more locations through an electronic medium. The interactions occur in real time. When it is used in education process, both the learners and the resource persons can interact with each other at the same time from different locations. There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology:
   i. Audio conferencing
   ii. Audio-graphic conferencing
   iii. Video conferencing
   iv. Web-based conferencing
i. **Audio conferencing**: - It involves the live exchange of voice messages over a telephone network. Distance learning can be conducted by audio conference. It is one of the cost-effective methods available to education. Instructors must take training on how to utilize audio conferences in a better way to supplement other forms of distance learning.

ii. **Audio-graphic conferencing**: - When low-bandwidth text and still images like graphs, pictures and diagrams are exchanged along with voice messages, then this type of conferencing is called audio-graphic. Non-moving visuals are included using a computer keyboard, drawing or writing on a graphics tablet or whiteboard. Audio-graphics can be used for meetings and distance learning.

iii. **Video conferencing**: - It allows the exchange of voice, graphics and moving images. Videoconferencing technology does not use telephone lines but either a satellite link or television network (broadcast/cable). Video conferencing is an effective way to use one teacher who teaches to a number of locations. It is very cost effective for classes which may have a small number of students enrolled at each location.

iv. **Web-based conferencing**: - It is the transmission of text and graphic, audio and visual media through the Internet. It needs the use of a computer with a browser and the communication can be both synchronous and asynchronous. This type of conferencing is very much useful for distance education. Common files are assigned to a class where teachers upload syllabi, lectures, grades and remarks. Students can access and download these files and use them for their assignment.

6. **SMART Board**: - SMART technologies are leading the way in classroom interaction between students and teachers using computers. A SMART board is an interactive white board that allows the teacher to project an image from a computer to the front of the room. Teachers can create engaging, active lessons using the many tools that a smart board provides. The amazing part is that the teacher can digitally draw the image, can alter diagrams, charts, and templates in SMART boards. Movable objects, sounds and pictures can make the lessons and teaching more interesting and easier to understand.
1.5 Internet

The internet is a global system of interconnected computer networks that use the standard internet protocol suite to link several billion devices worldwide. It was established in the early 1960s by the U.S. Department of Defense (Schneider, Evans, & Pinard, 2006), primarily for military purposes. It is an efficient tool in eliminating human geographical limitations. It is globally applied by all lifestyles because of its attractive nature. The most popular characteristics of the internet include e-mail, blogs, discussion groups (such as newsgroups and bulletin boards), on-line conversations (such as chats or instant messaging), wikis (websites that anyone on the internet can edit), role-playing games, data retrieval and e-commerce. The internet can be accessed anywhere by mobile phone internet devices. Data cards, mobile phones, and cellular routers allow users to connect to the internet wirelessly.

Internet is an extraordinary entertainment, business and education tool. Especially it is recognized as a vital tool in education field. Internet replaces the traditional system of education. It helps to strengthen the communication among teachers and students. Publication of lectures, manuals and practical exercises, student projects and other educational and research publications through internet would help in exchange of ideas. There are various forms of internet-based education, including virtual classrooms, correspondence courses, tutorials, project-based education and event-based education. So the internet has offered the unique opportunity of providing education at a fast pace.

Internet is the greatest invention in the history of mankind. Similar to each and every invention, the internet also has a number of advantages and disadvantages.

1.6 Advantages of Using Internet

Internet has become the most dominant tool throughout the world. Almost half of world’s population is getting benefit from internet. It provides us with a huge collection of numerous searches and various resources. It not only provides information but also has a lot more to offer. Following are the advantages of using the internet.

i. **E-mail:** - E-mail is now an essential communication tool in all fields. The messages are delivered and received instantly to people anywhere in the
world through email. It is free and fast when compared to phone, fax and postal services.

ii. **Information:** - Information is probably the biggest advantage internet is offering. There is a lot of information existing on the internet about each and every subject such as government law and services, market information, trade fairs and conferences, new ideas and technical support. Any type of data can be accessed by using search engines like Google, Bing, Yahoo, etc.

iii. **Online Chat:** - Chatting on the web can be used to be in contact with new people, find new friends and stay on with old friends.

iv. **Services:** - A variety of services are provided on the internet like online banking, buying tickets, hotel reservations, job searching, guidance services, etc. Availing these services offline, it becomes more expensive.

v. **E-commerce:** - E-commerce is the buying and selling of products and services or transmitting of funds or data through the internet. It has become an amazing option through which people can shop anything.

vi. **Entertainment:** - A wide variety of entertainment including online games, music, videos, movies and news can be accessed through the internet.

vii. **Online Learning:** - Another positive aspect of internet is learning. Students learn online courses and projects and also take part in different activities, offered by internet. Individuals in any part of the world can learn a lot about different topics, programmes, etc.

viii. **Encyclopaedia:** - Students cannot have encyclopaedia available all the time. By using internet, students can solve this problem and they can also watch video clips to get the desired information.

ix. **News:** - Latest news from all over the world is being continuously updated on internet. It provides news about politics, national and international issues. Moreover news is available for every individual linked to various fields like students, teachers, lawyers, engineers, businessmen and doctors.
1.7 Disadvantages of Using Internet

Even though internet has many advantages, it has its own limitations. Internet has the following disadvantages.

i. **Stealing of Personal information**: - Electronic messages sent over the internet can be easily snooped and tracked which reveal the communication between the people. When people use the internet, their personal information such as name, address, bank details and other information can be accessed by culprits.

ii. **Negative effects on family communication**: - Extra time spent on the internet reduces the family communication and shrink the number of friends and other contacts with which they have kept ties.

iii. **Virus threat**: - Nowadays Computers are getting viruses from the internet. Virus is a program which disrupts the normal functioning of the computer system. Computers connected with the internet have more chances of getting virus attacks and they can end up into crashing whole hard disk of the computer.

iv. **Spamming**: - It is often viewed as the act of sending unwanted email. This multiple or vast emailing is often compared to mass junk mailings. It unnecessarily collapses the entire system. Most of the spam is related to commercial advertising, often for dubious products, get-rich-fast plans or quasi-legal services. Spam costs the sender very little when compared to the recipient.

v. **Internet addiction**: - Internet addiction is a psychological disorder with obvious symptoms. The symptoms are similar to any kind of addiction: loss of relationships or job, withdrawal and significant time consumption.

Among so many problems arisen from using the internet, the most important one is internet addiction.

1.8 Internet Addiction

Internet is the best friend to many people because it gives everything in which they are interested in. Some people use the internet in a constructive way and the others are not. Some users spend more time on the internet and are unable to control
it. Excessive use of internet causes internet addiction and changes the nature and behaviour of the people. The term “Internet addiction”, coined by Goldberg, was originally used to describe the negative effects of excessive internet use on personal lives. It is similar to substance abuse, such as chemical addiction. These addicts can suffer physically or emotionally from such dependency (Goldberg, 1995). Internet addiction is also called online addiction, cyberspace addiction, internet addiction disorder, net addiction, pathological internet use and high internet dependency (Davis, Flett, & Besser, 2002; Hur, 2006). Broadly, addiction is defined as “a compulsive, uncontrollable dependence on a chemical substance, habit or practice to such a degree that either the means of obtaining or ceasing use may cause severe emotional, mental, or physiological reactions” (Mosby’s Medical Dictionary, 2009). “Internet addiction is an explanation for uncontrollable, damaging use of this technology and it is a warning sign that a person is having difficulty controlling his or her internet use” (Beard, 2002).

Griffiths (2000) found that internet addiction has six core components in common with other types of addiction, including salience, mood modification, tolerance, withdrawal, conflict and relapse. They are as follows:

i. Salience: - This occurs when the particular activity becomes the most important activity in a person's life and dominates his or her thinking, feelings and behaviour.

ii. Mood modification: - This refers to the subjective experiences that people report as a consequence of engaging in the particular activity and can be seen as a coping strategy.

iii. Tolerance: - This is the process whereby the increasing amount of the particular activity is required to attain the former effects.

iv. Withdrawal symptoms: - These are the unpleasant feeling states and physical effects that occur when the particular activity is discontinued or suddenly reduced.

v. Conflict: - This refers to the conflicts between the addict and those around them or from within the individuals themselves that are concerned with the particular activity.

vi. Relapse: - This is the tendency of going back to a previous pattern of particular activity to reappear and for even the most extreme patterns
typical of the height of the addiction to be quickly restored after many years of abstinence or control.

1.9 Subtypes of Internet Addiction

People use the internet for different types of internet activities such as online gaming, email, social media, search tools, newsgroups as well as other sites. Internet addicted people become addicted to a particular activity which lead them into excessive use of internet. Young, Pistner, O’Mara, and Buchanan (2000) claim internet addiction is a broad term that covers a wide variety of behaviours and impulse control problems. They claim this is categorized by five specific subtypes:

i. **Cyber Sexual Addiction**: - Individuals who are addicted to cyber sexual addiction are engaged in viewing and downloading online pornography or attending to the adult chat room.

ii. **Cyber-Relationship Addiction**: - It refers to over-involvement in online relationships. In most of the cases, it has its own effects on real relationship with family and friends.

iii. **Net-Compulsions**: - It includes obsessive online gambling, shopping, or stock trading behaviours. In particular, individuals may lose excessive amount of money and even upset job related duties or significant relationships.

iv. **Information Overload**: - Individuals will spend greater amount of time for searching and collecting data from the web and organizing information. So it will lead to working inefficiency of the individual.

v. **Computer Addiction**: - It refers to obsessive computer game playing.

1.10 Signs of Internet Addiction

There are many symptoms to make out the individuals those who are addicted to internet. According to Illinois Institute for Addiction Recovery (2010), signs of Internet addiction include the following:

i. Preoccupation with the internet. (Contemplations about previous online activity or expectation of the next online session).

ii. Use the internet in increasing amounts of time in order to achieve satisfaction.
iii. Repeated, unsuccessful efforts to control or stop internet use.

iv. Feeling of restlessness, depression and irritability when attempting to cut down the use of the internet.

v. Staying online longer than originally intended.

vi. Jeopardized or risked loss of significant relationships, educational or job opportunities because of excessive internet use.

vii. Lies to family members or others to hide the extent of involvement with the internet.

viii. Use of the Internet as a way to escape from problems or to relieve a dysphonic mood (e.g., feeling sad, hopeless, depression, anxiety).

1.11 Internet Addiction among College Students

Internet addiction is a latest technological problem all over the world. It has been associated generally with younger generations particularly with college students. They are the vulnerable group for problematic internet use. Scherer (1997) found that 73% of college students accessed the internet at least once a day and spent approximately 8.1 hours a week online. Many students are using the internet not only for their academic purposes but also for chatting, e-mail, downloading songs and music. Jones (2002) reported that college students use the internet to communicate most frequently with friends and family, with e-mail and instant messaging being the preferred mediums. Young (2004) suggests the some factors that contribute to student abuse: They are (a) students have huge blocks of unstructured time, (b) schools and universities provide free and unlimited access to the internet, (c) students from the ages of 18-22 years are for the first time away from parental control without anyone monitoring or censoring what they say or do online, (d) young students experience new problems of adapting to university life and finding new friends, and often end up seeking a companionship by using different applications of the internet, (e) students receive full encouragement from faculty and administrators in using the different internet applications, (f) adolescents are more trained to use the different applications of technological inventions and especially the internet, (g) students desire to escape university sources of stress resulting from their obligations to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and finally (h) students feel that university life is alienated from social activities, and
when they finish their studies, the job market with all its uncertainties is a field where they must participate and succeed in finding employment.

1.12 Psychological Problems Related to Internet Addiction

The internet has positive aspects of being informative, resourceful, fun and convenient, but the excessive internet users, do not benefit out of them. Most people use the internet without negative consequences and even benefit from it, but some face the negative impacts. Psychologists are aware of the possible negative impact of the excessive internet use and related physical and psychological problems (Greenfield, 1999; Griffiths, 2000). Internet use may be beneficial or benign when kept at normal levels, whereas excessive internet use that interfere with daily life has been connected to many problems, including neglect of work, academic and social responsibilities, relationship breakdown, loss of control and decreased psychosocial well-being, (Young, 1998a; Weiser, 2001; Beard, 2002; Widyanto & Griffith, 2006). Orzack (1999) whose study reported, that people who are susceptible to internet addiction are people who are easily bored, lonely, depressed, shy, and suffering from other addictions (as cited in Chebbi, Koong, & Liu, 2000). Loneliness, anxiety, depression, shyness, and low self-esteem are some of the psychological problems related with internet addiction.

1.12.1 Loneliness

Loneliness is an unpleasant emotional response to isolation or lack of relationship. It usually includes anxious feelings about a lack of companionship or communality with other beings, both in the present and the future. As such, one would feel lonely even when surrounded by other people. The causes of loneliness can be a combination of social, mental or emotional factors. People experience loneliness due to many reasons and many life events may cause it; like the lack of friends during childhood and adolescent stage or the lack of physical presence of meaningful people with a person. Individuals who have psychosocial problems prefer online interaction to face-to-face talking (Caplan, 2010). Ozen and SariciKorukcu (2010) have conducted a study and found that lonely people use the internet mostly for communication purposes. Spending too much time on the internet leads people into loneliness, it tears individuals from the social environments they belong to, it affects their relationships with family and friends and those individuals behave much easier.
on virtual communication than they do in real life. It has been concluded that virtual chat rooms have acted as a significant means for sharing feelings of loneliness, and the addictive effect of such actions drives individuals into more loneliness over time (as cited in Özben, 2013). Negative psychological beliefs (feelings of loneliness, deep disappointment in life, a sense that everything in life is trivial, an absence of objectives in life, whether the main purpose in life is enjoyment, an inclination of giving up on solving problems, and a weak will to work) were significant risk factors for Pathological Internet Use (Christos Frangos, Constantinos Frangos & Sotiropoulos, 2011). Kim, LaRose, and Peng (2009) suggest, however, that the relationship between loneliness and pathological internet use is possibly bidirectional and excessive and compulsive use of the Internet can cause psychosocial dysfunctions as well. Praterelli, Browne, and Johnson (1999) utilized a factor analysis approach, and found the problem to be cyclical in nature; loneliness and depression leading to excessive computer use, leading in turn to more loneliness and depression and so on.

1.12.2 Anxiety

Anxiety is an unpleasant emotional state characterized by somatic, emotional, behavioural and cognitive components (Seligman, Walker & Rosenhan, 2001). It is the subjectively unpleasant feeling of dread over something unlikely to happen, such as the feeling of imminent death (Davison, 2008). Anxiety is not the same as fear that is felt about something realistically intimidating or dangerous and is an appropriate response to a perceived threat (Henig, 2009). Anxiety is a future-oriented mood state in which one is ready or prepared to attempt to cope with the upcoming negative events (Barlow, 2000). People usually expect social acceptance and thus sometimes afraid of others’ disapproval. Apprehension of being judged by others may cause anxiety in social situations (Hofmann & DeBartolo, 2010). Research has found that internet abusers use the internet to modulate negative moods. They are more likely than others in using the internet to escape pressures, to improve their moods when down, anxious, lonely and to control moods (Anderson, 2001; Morahan-Martin & Schumacher, 2000). The students suffering from social anxiety, depression, and conflict in family relationship exhibited an inclination towards pathological internet use (De Leo & Wulfert, 2013). Internet use can be likened to a double-edged sword: it provides the users both benefits and inconvenience. For example, a virtual network can provide a safe region for users to mitigate social anxiety and shyness (Yuen &
Lavin, 2004); however, it can also cause loneliness and depression (Ayas & Horzum, 2013).

1.12.3 Depression

Depression is a mood or emotional state that is marked by feelings of low self-worth or guilt and a reduced ability to enjoy life. Depressed people tend to feel sad, insecure, worthless, hopeless, and experience high levels of interpersonal conflicts and stress. They can also have loss of interest in their normal activities, loss of appetite, insomnia, difficulty in concentrating and greater distractibility and suicidal thoughts or attempts. Depression looks different in men and women, and in young people and older adults. Depression often is comorbid with a number of other disorders such as pathological gambling, substance abuse, personality disorder, eating disorders, and anxiety disorders (Hirschfeld, 1999; American psychiatric Association (APA), 2000; Aina & Susman, 2006; Dannon, Lowengrub, Aizer & Kotler, 2006). Depression is the most frequently reported psychiatric symptom associated with Internet overuse (Whang, Lee, & Chang, 2003; Kim et al., 2006; Ha et al., 2007). In a study conducted by Young (1998a), it is shown that the students with specific traits such as dependent personality, timidity, depression, and low self-esteem, which are characteristics of diffuse-avoidant identity style, are at a higher risk for internet addiction. In other words, depressive feelings of people relying on the internet for social support might remain or even worsen toward their real-life interpersonal relationships, increasing their risk of becoming internet addicted (Yeh, Ko, Wu, & Chang, 2008, as cited in Koc, 2011). Young and Rodgers’s (1998a) study reported that clinical depression is significantly associated with increased levels of internet usage.

1.12.4 Shyness

Shyness has been defined as discomfort, inhibition, and awkwardness in social situations, particularly in situations with unfamiliar people (Buss, 1985) or as a tendency to avoid social interaction and to fail to participate appropriately in social situations (Pilkonis, 1977; Scholmerich, Broberg, & Lamb, 2000). It is the feeling of uneasiness, lack of comfort, or awkwardness particularly when an individual is in closeness to other people. This usually occurs in new situations or with unknown people. Shy people may feel lonely, shameful, sad, tensed, and also have low self-
esteem. The main characteristics of shyness is a largely ego-driven fear of others’ thought about a person’s behaviour, resulting in the person becoming nervous of doing or saying what he or she wants to, afraid of negative feelings, criticism and simply opting to stay away from social situations instead. Shyness may be defined as an experientially as discomfort and inhibition in interpersonal situations that interferes with pursuing one's interpersonal or professional goals. It is a form of excessive self-focus, a preoccupation with one's thoughts, feelings and physical reactions. It may vary from mild social awkwardness to totally inhibiting social phobia. Shyness may be chronic and dispositional, serving as a personality trait that is central in one's self definition (Henderson & Zimbardo, 1998). Asendorpf (2000) found that shy individuals spent less time engaged in social interactions, felt less close with peers, and received less support from peers than did non-shy individuals. Shy, introvert people use the internet to have social relations and manage these relations as a way of socializing (Davis et al., 2002). Young et al. (2000) found that the anonymity in virtual environment provides shy individuals with a safe and secure environment for social interaction.

1.12.5 Self-Esteem

Self-esteem is a disposition that a person has which represents their judgments of their own worthiness (Olsen, Breckler, & Wiggins, 2008). It is the evaluative dimension of the self which includes feelings of value, pride and discouragement (Newman & Newman, 1975). One's self-esteem is also closely associated with self-consciousness (Schacter, Gilbert, & Wegner, 2009). Social acceptance brings about self-confidence and produces high self-esteem, while refusal from peers and loneliness bring about self-doubts and produce low self-esteem (Leary & Baumeister, 2000). In order to withdraw or escape from these negative evaluations and stresses, persons with low self-esteem have a tendency to engage in addictive behaviour such as substance abuse (Craig, 1995; Hirschman, 1992). In some studies, self-esteem has emerged a factor associated with problematic internet use (Kim & Davis, 2009). In fact, the relationship between internet addiction and self-esteem has been discussed in many studies. In these studies, self-esteem, personality traits, depression and other psychiatric disorders were shown to be associated with internet addiction (Griffiths, 2000). According to Ellison, Steinfield, and Lampe’s (2007) study, it is seen that adolescents with low self-esteem tend to spend more time in social networking sites.
than those with higher self-esteem. Greenberg, Lewis, and Dodd (1999) and Young’s (1999) study stated that lower self-esteem triggers excessive internet use.

1.13 Treatment Strategies for Internet Addiction

People who use the internet excessively face problems in their life. They avoid daily activities and depend only on the online activities. Once an individual starts experiencing many negative effects both mentally and socially he/she should seek out the internet addiction treatment. There are many treatment strategies for which the individual can recover from the internet addiction. Therapeutic strategies would include cognitive restructuring regarding the internet applications an individual uses most often, behavioural exercises, and exposure therapy in which the individual stays offline for increasing amounts of time. Young (1999) has suggested a number of behavioural strategies for treating internet addiction and they are as follows.

i. Practice the Opposite:

As one of the techniques for the treatment of internet addiction, this step involves identifying the exact outline of the individual’s internet use and then trying to break their online schedule by introducing ‘neutral’ activities. For example, if the routine involves spending all weekend online, it could be suggested that the individual spends Saturday afternoon on an outdoor activity.

ii. External Stoppers:

The individual uses prompts (such as an alarm clock) to remind them when it is time to log off.

iii. Setting Goals:

Even though a lot of motivation and care have been given, the internet addicts may fail in treatment if clear goals are not set. If a daily or weekly schedule is given to them for internet use, it will be very helpful. To begin with, these time slots should be frequent but brief. Incorporating a real schedule of internet usage will give them a sense of being in control, rather than allowing the internet to take control.

iv. Abstinence from Certain Applications:

If a specific application has been identified and moderation of it has failed, then abstinence from that application is the next appropriate intervention. For this
the individual abstains from that particular internet application (e.g. using chat rooms or playing games) and uses other applications in moderation. This model of abstinence is recommended for those who have tried and failed to limit their use of a particular application.

v. Reminder Cards:

For helping the internet addicts stay focused on the goal of either reduced use or abstinence from a particular application, they should be encouraged to write down (on cards) some of the negative consequences of internet use and the possible benefits of limiting time online. These cards should be carried at all times, as constant reminders that help to prevent internet misuse at vulnerable times.

vi. Personal Inventory:

Since the internet addicts spent a lot of time online, they might have neglected many of their other hobbies and interests. The individual is instructed to make a list of every activity or practice and rate these lost activities. This exercise will help them to become more aware and rekindle those lost activities once enjoyed in their life.

vii. Support Groups:

People who lack social support may turn to the internet as a way of forming relationships. If this result in addictive internet use, it is important to help such individuals integrate into a social circle of others in a similar situation and to improve their real-life social support network. This will help them to rely less on the internet for the reassurance and comfort that they miss in their real life.

viii. Family Therapy:

Family relationship is getting disturbed by the internet addiction. In that case, family intervention must be a part of the individual’s treatment. The family members should be educated about addiction, reduce the blame they place on the internet addict, facilitate open communication among family members and promote the addict’s recovery.
1.14 Significance of the Study

Information and communication technology (ICT) has grown at a tremendous pace. Internet is one of the Information and Communication tools and its usage has been multiplied nowadays. It has become an important information and entertainment source for students. It has given the opportunity to the students to share and get information from the lecturers and students from any part of the world. If students use the internet in a positive way, it is really a productive one. But these days’ students access the internet more for using social networking sites such as facebook and twitters. Even though it has created new ways to socialize and interact, it diminishes face to face communication among students, friends and family members. Easy availability of all kinds of information from the internet reduces thinking capacity, creativity and moral values of the students. In addition spending more time in front of the computer for playing games and chatting cause obesity, insomnia and psychological problems among students. On the whole frequent use of the internet brings internet addiction among its users.

Psychological approaches suggest that people use the internet excessively to compensate for social or psychological difficulties, and deficits in personal well-being in terms of their everyday offline life. Studies have linked sensation-seeking (a tendency to pursue excitement and sensory pleasure), loneliness and emotional problems (such as depression and low self-confidence) to excessive internet use (Mehroof & Griffiths, 2010, as cited in Smahel et al., 2012). Yang and Tung’s (2007) study reported that students afflicted with psychological disorders such as dependence, depression, extreme shyness and low self-esteem had a high propensity to become addicted to the Internet. Hence the investigator felt it is necessary to study the relationship between internet addiction and psychological variables such as Loneliness, Anxiety, Depression, Shyness and Self-esteem among college students and it helps them to become aware of the problems of internet addiction.

1.15 Statement of the Problem

Internet is the most important technological tool all over the world and particularly it is the boon for the students. Internet is used for getting information to learn, to do project work and assignments and other curricular activities. As the usage of the internet is growing rapidly each year, internet addiction has become a problem
among students. Some students use the internet more for playing games, chatting, viewing movies and listening to music due to their psychological impairment. Many studies have shown that internet addiction is linked with some psychological problems (Kim et al., 2006; Yen et al., 2008; Kim & Haridakis, 2009; Robu & Tcaciuc, 2010; Sepehrian & Jokar, 2013) and the researcher strongly believed that the psychological problems such as loneliness, anxiety, depression, shyness and low self-esteem and getting addicted to internet. Solving the above mentioned psychological problems may help them to get rid of internet addiction.

The present study pays close attention to the selected psychological variables such as Loneliness, Anxiety, Depression, Shyness and Self-esteem which explain internet addiction. Since the above said psychological variables are the predictors of internet addiction, a tool that can accurately measure psychological problems caused by internet addiction is necessary. Hence, this research is a preliminary step towards the measurement of psychological variables related to internet addiction.

Until now, most of the studies conducted on internet addiction, were mainly concerned with one or two psychological variables and those studies of internet addiction have been found in many different countries such as western countries, Turkey, Taiwan, Hong Kong, Korea, Singapore, and etc. However, this study in India is very limited and the levels of internet addiction among students are still questionable. Hence, the researcher has chosen the title stated the problem of the study as "RELATIONSHIP BETWEEN INTERNET ADDICTION AND SELECTED PSYCHOLOGICAL VARIABLES AMONG COLLEGE STUDENTS".

1.16 Operational Definitions of the Study

**Internet Addiction:** - In the present study internet addiction refers to an excessive, overuse of internet that causes psychological, social, physical and academic problems in a user’s life.

**Selected Psychological Variables:** - In the present study, the researcher has carefully chosen the following independent psychological variables:

**Loneliness:** - It is referred to an unpleasant feeling in which a person feels a strong sense of emptiness and solitude resulting from inadequate level of social relationships.
Anxiety: - It is referred to an unpleasant emotional state of inner turmoil and apprehension, often accompanied by nervousness.

Depression: - It is referred to a state of depressed mood and loss of interest that can affect a person’s thoughts, behaviour, feelings and a sense of well-being.

Shyness: - It is referred to a feeling of discomfort or inhibition of social interaction, especially with unfamiliar people.

Self-Esteem: - Self-esteem is a feeling in that an individual thinks of himself as competent, important, successful, and valuable (Coopersmith, 1981).

College Students: - Students those who are doing undergraduate courses in Arts & Science and Engineering colleges and are of age between 19 - 22 years.

1.17 Objectives of the Study

The following objectives were formulated for the present study.

1.17.1 General Objectives of the Study

1. To find out the level of internet addiction among college students.

2. To find out the level of loneliness, anxiety, depression, shyness and self-esteem among college students.

3. To find out whether there is a significant difference in the mean scores of loneliness, anxiety, depression, shyness and self-esteem of internet addicted students with respect to their gender, age, type of college, availability of computer at home and availability of internet facility at home.

4. To find out whether there is a significant relationship among internet addiction and selected psychological variables.

5. To find out the significant influence of selected psychological variables on internet addiction.
1.17.2 Specific Objectives of the Study

1. To find out if there is any significant difference in the mean scores of loneliness, anxiety, depression, shyness and self-esteem of internet non-addiction group and internet addiction group.

2. To find out if there is any significant difference in the mean scores of internet addiction of internet addicted students based on their (i) Gender (ii) Age (iii) Type of college (iv) Availability of computer at home and (v) Availability of Internet facility at home.

3. To find out if there is any significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to their gender.

4. To find out if there is any significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to their age.

5. To find out if there is any significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the type of college.

6. To find out if there is any significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the availability of computer at home.

7. To find out if there is any significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the availability of Internet facility at home.

8. To find out if there is any significant relationship among internet addiction and selected psychological variables.

9. To find out if there is any significant association between (i) Gender (ii) Age (iii) Type of College (iv) Availability of computer at home (v) Availability of internet facility at home and Internet addiction.
10. To find out if there is any significant influence of selected psychological variables on internet addiction.

1.8 Hypotheses of the Study

1. There will be significant difference in the mean scores of loneliness, anxiety, depression, shyness and self-esteem of internet non-addiction group and internet addiction group.

2. There will be significant difference in the mean scores of internet addiction of internet addicted students based on their (i) Gender (ii) Age (iii) Type of college (iv) Availability of computer at home and (v) Availability of internet facility at home.

3. There will be significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to their gender.

4. There will be significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to their age.

5. There will be significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the type of college.

6. There will be significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the availability of computer at home.

7. There will be significant difference in the mean scores of (i) Loneliness (ii) Anxiety (iii) Depression (iv) Shyness and (v) Self-esteem of internet addicted students with respect to the availability of internet facility at home.

8. There will be significant relationship among internet addiction and selected psychological variables.

9. There will be significant association between (i) Gender (ii) Age (iii) Type of College (iv) Availability of computer at home (v) Availability of internet facility at home and Internet addiction.
10. There will be significant influence of selected psychological variables on internet addiction.

1.19 Delimitations of the Study

Research studies in general will have limitations due to many factors. The following limitations were unavoidable in the present study.

1. The study was confined to only the students who are studying in Arts and Science and Engineering colleges in Coimbatore district.

2. In order to complete in time, 40% of the colleges are selected for the sample collection.

3. The study has been conducted on a sample of 1627 college students only.

4. In spite of the above mentioned limitations, care has been taken in selecting a sample, constructing the tool, gathering reliable data and applying appropriate statistical techniques.

1.20 Organisation of the Thesis

The introductory chapter says about information and communication technology, internet, internet addiction, psychological variables related to internet addiction, treatment techniques for internet addiction, title of the study, significance of the study and delimitations of the study.

The detailed reviews of related studies on the selected variables are presented in chapter two.

The design of the study is described in detail in chapter three. It provides the procedure, construction and validation of the designed tools namely Young’s Internet Addiction Test (IAT) and Loneliness, Anxiety, Depression, Shyness, Self-esteem (LADSS) scale.

Chapter four is concerned with analysis and interpretation of the data.

Finally, chapter five provides findings, discussion, implications and suggestions for further study in the field.

1.21 Conclusion

In this chapter an introduction and conceptual framework of the study was given. The next chapter deals with review of related studies.