SUMMARY AND CONCLUSIONS

6.1 Need of the Study

The teaching and learning process has been altered by the convergence of a variety of technological, instructional, and pedagogical developments in recent times (Marina, 2001). Technology is challenging the boundaries of the educational structures that have traditionally facilitated learning. Recent advances in computer technology and the diffusion of personal computers, productivity software, multimedia, and network resources over the last decade lead to the development and implementation of new and innovative teaching strategies. Educators who advocate technology integration in the learning process believe it will improve learning and better prepare students to effectively participate in the 21st century workplace (Butzin, 2000; Hopson, Simms, and Knezek, 2002; Reiser, 2001).

As a new medium of learning in the twenty-first century, the Internet has brought unprecedented opportunities to students. To capitalize upon such opportunities, schools and families eagerly facilitate Internet use, where academic achievement remains the top priority at school. The Internet has also become a major concern for parents, because some online activities may seriously distract adolescents from their homework. Various studies have been conducted on how Internet use is linked to academic achievement, a key outcome of school learning (Yen and Chih 2009). Kuh and Hu (2001) and Suhail and Bargee's (2006) conducted studies on the effect of internet use on academic achievement and found positive effects of internet use on learning, intellectual development and vocational preparation in addition to personality development. Certain studies have found a negative link between college students' Internet use and academic performance (Chen and Peng, 2008).

Research related to gender influences on use of computers has generally shown diffused results. Some studies have found that males are more technologically inclined, have more confidence in internet usage and males and females differ in their computer cognitions and attitudes and influence of gender differences on internet usage was also present (Shaw and Gant, 2002; Madell, and Muncer, 2004). Certain studies have found that females experience techno stress in using computers and females are seen to have more limitations compared to men to access to the internet at any time due to family commitments (Munusamy and Ismail, 2009). However contradictory studies have also found which have showed that females tend to favor computer mediated communication more than males (Morahan, Martin and Schumachers, 1997). It was also found that adolescents exhibited positive attitudes towards the Internet regardless of gender (Luan, Fung and Atan, 2008).
Internet service provision for private users has been greatly expanded. As the usage increases, there is also an increasing need to understand the effect of Internet on interpersonal relationships and social connections. The concern is centered on whether the Internet is expanding the relationships or it is alienating people from their richer relations (Boase, Horrigan, Wellman and Rainie 2006). Some critics state that Internet use will decrease people’s social contacts and involvement in communities (Berry 1993 and Fox 1995). They see “on-line” relations as different from “off-line” relations. Other scholars believe that the Internet allows people to contact with many others and facilitate the creation of new connections among people (Wellman 1997, Jones 1998).

Some researchers have suggested that online activity might serve to facilitate an individual's feeling of perceived social support (Bromberg, 1996 ; Parks and Floyd, 1996). The direct relationship between computer related experience and computer anxiety seems clear (Bohlin and Hunt, 1995; Chen, 1986; Hadfieldl). Much research indicates that as time passes and students become more familiar with computer technology, their anxiety decreases. However, that is not always the case. In some reports anxiety increases with more experiences, and in others it stays the same (Gos, 1996; Rosen, Sears and Weil, 1987). Weil, Rosen and Sears (1987) argued that “during repeated exposure to the computer, the computer-phobic is being reconditioned at increased levels of anxiety which, in turn, increases discomfort and anxiety”.

Students’ self-efficacy towards computers and Internet influence how they use the system (Oliver and Shapiro 1993; Tsai and Tsai, 2003). Students having low Internet self-efficacy lack confidence in their ability to use the system to achieve desired results, instead students with high Internet self-efficacy are more confident in their ability to use the system (Tsai and Tsai, 2003). Hill and Hanafin (1997) found that self-efficacy influences the strategies used in web-based learning. Internet self-efficacy can foster better information searching strategies (Tsai and Tsai 2003). In their study, Liang and Tsai (2008) found that high school students showed stronger preferences for the learning environment where they are easy to use or navigate and where they can meaningfully integrate real life problems.

Various studies have been conducted on Internet usage and it has been found that usage of Internet is growing day by day especially in the age group of adolescents. There are certain researches that found that males spend more time on Internet than females, whereas certain researches also found the results opposite. It was also found that perceived social support increases with the growing importance of Internet and social networking sites. As time passes and students become more familiar with computer technology, their anxiety decreases but that is not always the case in some studies anxiety increases with more usage of computers.
Though internet is used by adolescents for academic purpose also, studies support it as they have concluded that academic achievement scores have been found to be high but it’s not same with every study. They not only use Internet for academic purpose but also use it for other purposes that are chatting, playing online games etc. that lowered the academic scores of adolescents. Internet self-efficacy fosters better information searching strategies whereas students with low Internet self-efficacy lack confidence in their ability to use the Internet.

All variables are showing positive results in one case and negative in other. So exploring the complex relationship has led researcher to examine of Internet use in relation to these variables. Moreover, most researches on the usage and effect of Internet have been conducted in Western countries and very fewer studies have been conducted in Asian context despite the fast growth of Internet. Researcher also found the lack of consistent evidence supporting an association between Internet use in relation to gender, perceived social support, computer anxiety, interpersonal relationships and academic achievement among adolescent with different levels of internet self-efficacy. Taking such a key factor into account, the current study aims to study the internet use in relation to gender, perceived social support, computer anxiety, interpersonal relationships and academic achievement among adolescent with different levels of internet self-efficacy.

6.2 OBJECTIVES
The objectives of this study were:
1. To develop and validate scales on internet use by adolescents, perceived social support and interpersonal relationships.
2. To compare the internet use by male and female adolescents.
3. To study the internet use by adolescents:
   - at different levels of internet self-efficacy
   - at different levels of perceived social support
4. To study the interaction effect of:
   - internet self-efficacy and perceived social support
   - gender and internet self-efficacy
   - gender and perceived social support
   of adolescents with respect to internet use.
5. To study the interaction effect among gender, internet self-efficacy and perceived social support among adolescents with respect to internet use.
6. To study the internet use by adolescents at different levels of computer anxiety.

7. To study the interaction effect of:
   - internet self-efficacy and computer anxiety
   - gender and computer anxiety
   of adolescents with respect to internet use.

8. To study the interaction effect among gender, internet self-efficacy and computer anxiety among adolescents with respect to internet use.

9. To study the internet use by adolescents at different levels of interpersonal relationships.

10. To study the interaction effect of:
    - internet self-efficacy and interpersonal relationships
    - gender and interpersonal relationships
    of adolescents with respect to internet use.

11. To study the interaction effect among gender, internet self-efficacy and interpersonal relationships among adolescents with respect to internet use.

12. To study the internet use by adolescents at different levels of academic achievement.

13. To study the interaction effect of:
    - internet self-efficacy and academic achievement
    - gender and academic achievement
    of adolescents with respect to internet use.

14. To study the interaction effect among gender, internet self-efficacy and academic achievement among adolescents with respect to internet use.

6.3 DELIMITATION OF THE STUDY

- The study was delimited to class IX th students of senior secondary schools of Chandigarh.

6.4 HYPOTHESES

Hypotheses related to internet use in relation to gender and perceived social support of adolescents at different levels of internet self-efficacy.

Ho1 There is no significant difference between male and female adolescents with respect to internet use.

Ho2 There is no significant difference among adolescents with low, moderate and high internet self-efficacy with respect to internet use.

Ho3 There is no significant difference among adolescents with low, moderate and high perceived social support with respect to internet use.
Ho4 There is no significant interaction between internet self-efficacy and perceived social support of adolescents with respect to internet use.

Ho5 There is no significant interaction between gender and internet self-efficacy of adolescents with respect to internet use.

Ho6 There is no significant interaction between gender and perceived social support of adolescents with respect to internet use.

Ho7 There is no significant interaction among gender, internet self-efficacy and perceived social support of adolescents with respect to internet use.

**Hypotheses related to internet use in relation to gender and computer anxiety of adolescents at different levels of internet self-efficacy.**

Ho8 There is no significant difference between male and female adolescents with respect to internet use.

Ho9 There is no significant difference among adolescents with low, moderate and high internet self-efficacy with respect to internet use.

Ho10 There is no significant difference among adolescents with low, moderate and high computer anxiety with respect to internet use.

Ho11 There is no significant interaction between internet self-efficacy and computer anxiety of adolescents with respect to internet use.

Ho12 There is no significant interaction between gender and internet self-efficacy of adolescents with respect to internet use.

Ho13 There is no significant interaction between gender and computer anxiety of adolescents with respect to internet use.

Ho14 There is no significant interaction among gender, internet self-efficacy and computer anxiety of adolescents with respect to internet use.

**Hypotheses related to internet use in relation to gender and interpersonal relationships of adolescents at different levels of internet self-efficacy.**

Ho15 There is no significant difference between male and female adolescents with respect to internet use.

Ho16 There is no significant difference among adolescents with low, moderate and high internet self-efficacy with respect to internet use.

Ho17 There is no significant difference among adolescents with low, moderate and high interpersonal relationships with respect to internet use.

Ho18 There is no significant interaction between internet self-efficacy and interpersonal relationships of adolescents with respect to internet use.
Ho19 There is no significant interaction between gender and internet self-efficacy of adolescents with respect to internet use.
Ho20 There is no significant interaction between gender and interpersonal relationships of adolescents with respect to internet use.
Ho21 There is no significant interaction among gender, internet self-efficacy and interpersonal relationships of adolescents with respect to internet use.

**Hypotheses related to internet use in relation to gender and academic achievement of adolescents at different levels of internet self-efficacy.**

Ho22 There is no significant difference between male and female adolescents with respect to internet use.
Ho23 There is no significant difference among adolescents with low, moderate and high internet self-efficacy with respect to internet use.
Ho24 There is no significant difference among adolescents with low, moderate and high academic achievement with respect to internet use.
Ho25 There is no significant interaction between internet self-efficacy and academic achievement of adolescents with respect to internet use.
Ho26 There is no significant interaction between gender and internet self-efficacy of adolescents with respect to internet use.
Ho27 There is no significant interaction between gender and academic achievement of adolescents with respect to internet use.
Ho28. There is no significant interaction among gender, internet self-efficacy and academic achievement of adolescents with respect to internet use.

6.5 **SAMPLE OF THE STUDY**

Stratified Random Sampling Technique was used for the selection of the sample in the present study. Stratified random sampling is a modification of random sampling in which researcher divides the population into two or more relevant and significant strata based on one or a number of attributes. The sampling frame is divided into a number of subsets. A random sample (simple or systematic) is then drawn from each of the strata. Consequently, stratified sampling shares many of the advantages and disadvantages of simple random or systematic sampling. Dividing the population into a series of relevant strata means that the sample is more likely to be representative, as the researcher can ensure that each of the strata is represented proportionally within his/her sample. However, it is only possible to do this if the researcher is aware of, and can easily distinguish, significant strata in the sampling frame. In addition, the extra stage in the sampling means that it is likely to take longer, to be more
expensive, and to be more difficult to explain than simple random or systematic sampling (Saunders, Lewis & Thornhill, 2009).

400 students (i.e. 200 males and females) of Government Senior Secondary schools of Chandigarh were the sample of the present study. There are total 40 Government Senior Secondary schools functioning in U.T Chandigarh. The Chandigarh Administration has provided a sufficient number of schools in each sector and villages of U.T Chandigarh with a view to provide best education for all the children of Chandigarh. There are total 115 Government schools in Chandigarh.

Table 6.1 : List of Number of Government Schools in Chandigarh

<table>
<thead>
<tr>
<th>S. NO</th>
<th>Name of the Institutions</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Government Nursery School</td>
<td>01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Government Primary Schools</td>
<td>08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Government Middle Schools</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Government High Schools</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Government Senior Secondary Schools</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>115</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Researcher had delimited her study to Government Senior Secondary Schools of Chandigarh, which are total 40 in number. Out of these 40 Senior secondary Schools, researcher had selected 10 Government School by using lottery method. After that letter was written to the DEO office, Sector -19, Chandigarh for taking permission for collecting data from the ten Government Senior Secondary Schools of Chandigarh. After 2 weeks, researcher got permission from DEO office for collection of data from selected schools. From each school 40 males and females were randomly selected from Class 1X.

Table 6.2: Distribution of Sample from 10 Government Senior Secondary Schools

<table>
<thead>
<tr>
<th>S. NO</th>
<th>Name of the Institutions</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Government Senior Secondary School, Sec -10</td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Government Senior Secondary School, Sec -19</td>
<td>24</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Government Senior Secondary School, Sec -27</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>Government Senior Secondary School, Sec -28</td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>Government Senior Secondary School, Sec -32</td>
<td>21</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>Government Senior Secondary School, Sec -35</td>
<td>18</td>
<td>22</td>
<td>40</td>
</tr>
</tbody>
</table>
6.6 Tools Used

The following tools were used in the present study:

1) Internet use scale developed and validated by the researcher except for dimensions online cognition scale and Internet addiction scale which were developed by Davis, Flett and Besser (2000) and Young (2009) respectively. However these two scales were validated by the researcher in Indian setting.

2) Perceived Social Support scale developed by Procidano and Heller (1983) and Zimet, Dahlem and Farley (1988) and adapted and validated by researcher in Indian setting.

3) Computer Anxiety scale developed by Heinssen, Glass and Knight (1987) and validated by researcher in Indian setting.

4) Interpersonal Relationship scale developed by Darrow, Callaghan, Bonow and Follette (2014) and adapted and validated by researcher in Indian setting.

5) For Academic Achievement, investigator collected previous year scores of students from their respective class in charges.

6) Internet Self-efficacy scale developed by Hsu and Huang (2006) and validated by researcher in Indian setting.

6.7 RESEARCH METHOD

For the current study, the descriptive method of research was employed to study and compare the internet use in relation to gender, perceived social support, computer anxiety, interpersonal relationships and academic achievement among adolescents with different levels of internet self-efficacy.

6.8 DESIGN OF THE STUDY

For the present study, four 2×3×3 factorial designs was employed to study the main effects of dependent variables of “internet use” on independent variables which are perceived social support, computer anxiety, interpersonal relationships and academic achievement of adolescents with different levels of internet self-efficacy.
First 2x3x3 ANOVA design was employed to study the relationship between internet use, gender and perceived social support of students with low, moderate and high internet self-efficacy.

ANOVA (2x3x3)

Figure 6.1 Schematic layout of 2x3x3 factorial design to study the relationship between internet use, gender and perceived social support of students with low, moderate and high internet self-efficacy.

- Second 2x3x3 ANOVA design was employed to study the relationship between internet use, gender and computer anxiety of students with low, moderate and high internet self-efficacy.
i) ISE - Internet Self-efficacy  
ii) CA - Computer Anxiety  
iii) MOD - Moderate  

Figure 6.2 Schematic layout of 2x3x3 factorial design to study the relationship between internet use, gender and computer anxiety of students with low, moderate and high internet self-efficacy.

- Another 2x3x3 ANOVA design was employed to study the relationship between Internet use, gender and interpersonal relationships of students with low, moderate and high internet self-efficacy.

ANOVA (2x3x3)
• Fourth 2×3×3 ANOVA design was employed to study the relationship between internet use, gender and academic achievement of students with low, moderate and high internet self-efficacy.

ANOVA (2×3×3)

INTERNET USE

MALE

LOW ISE

MOD ISE

HIGH ISE

LOW AA

MOD AA

HIGH AA

FEMALE

LOW ISE

MOD ISE

HIGH ISE

LOW AA

MOD AA

HIGH AA

i) ISE- Internet Self-efficacy

ii) AA-Academic Achievement

iii) MOD-Moderate

Figure 6.4 Schematic layout of 2x3x3 factorial design to study the relationship between internet use, gender and academic achievement of students with low, moderate and high internet self-efficacy.

6.9 Pilot study
A pilot study was conducted by the researcher with 100 students (1.e. 50 males and 50 females) from Government Senior Secondary Schools of Chandigarh. The reason for conducting a pilot study was to determine the reliability of the tools in Indian setting, viz., Internet Use Scale, Perceived Social Support, Computer Anxiety Scale, Interpersonal Relationships Scale and internet Self-efficacy scale. The pilot study showed that the reliability coefficients (estimated by Cronbach’s alpha method) for the above tools was found to be 0.85, 0.86, 0.91, 0.86 and 0.96 respectively. Hence, these tools were thought to be suitable for data collection.

6.10 Procedure for data collection
The data was collected at two stages:

Stage 1: Selection of the sample
Stage 2: Collection of the data
Stage 1: Selection of the sample

This stage has been discussed under the heading sample in this chapter.

Stage 2: Collection of the data

After development of the tools and validating the related tools, investigator herself interacted with the students of class 1Xth from each ten Government senior secondary Schools and answered all their queries. It took almost 4-5 days to collect data from one school. Before collections of the data, selection of schools were done by using lottery method and selection of students were done on the basis of randomization technique. Researcher took permission from the principals of each ten schools before collecting data from their schools. 40 students of each of the school were selected randomly. Data was collected during October and November month of 2015. It was also taken care to select only 40 students from each school. Rapport was established with them and standardized instructions were read out for each tool. Students were encouraged to give correct information and were assured that these are used only for research purpose and will remain confidential. Participants took between 40-60 minutes to complete one questionnaire. It was checked that they have answered all the statements. After collecting the tools from all the students, scoring was done in accordance with the instructions given in the manual of each tool.

6.11 STATISTICAL TECHNIQUES TO BE USED

The following statistical techniques was employed to analyze the data obtain from the survey in order to test the hypotheses:

1. Descriptive statistics such as means, standard deviations, skewness and kurtosis were computed to study the nature of distribution of scores for all the variables.
2. 2 x 3 x 3 ANOVA for analysis of internet use by adolescents at different levels on internet self-efficacy , perceived social support, computer anxiety, interpersonal relationships and academic achievement of adolescents.
3. $t$–ratios was computed wherever F-ratio was found significant.

6.12 Findings

Findings related to frequency of using Internet among male and female adolescents.

57% of male and 41.5% of female adolescents use Internet daily, which means male adolescents use Internet more frequently when compared with their female counterparts. Overall 49.3% of adolescents use Internet daily. 32.5% of male adolescents and 18.5% of female adolescents use Internet only once a week. Overall percentage of using Internet once a week was found to be 25.5%. Only 2% of male and 3% of female adolescents use Internet once a fortnight. Overall only 2.5% of adolescents use Internet once a fortnight. 3.5% of male
adolescents and 13.5% of female adolescents use Internet once a month. Overall percentage of using Internet once a month was found to be 8.5%. 5% of male and 23.5% of female adolescents use Internet rarely, which clearly shows that percentage of using Internet was found high among male adolescents. Overall 14.2% of adolescents use Internet rarely.

**Findings related to male and female adolescents internet usage at home.**

22% of male and 25.5% of female adolescents strongly agreed that they use Internet at their homes. Overall 23.8% of adolescents strongly agreed that they use Internet at home. 52.5% of male and 31.5% of female adolescents agreed that they use Internet at home. Overall percentage of adolescents who was agreed that they use internet at home was 42%. 19.5% of male and 16% of female adolescents were uncertain about their Internet usage at home. Overall percentage of adolescents who were uncertain about their Internet usage at home was 17.8%. 6% of male and 20.5% of female adolescents disagreed that they use Internet at home. Overall percentage of adolescents who disagreed about their internet usage was 13.3% and only 6.5% of female adolescents strongly disagreed that they use internet at home.

**Findings related to male and female adolescents internet usage at cyber café.**

12.5% of male and 10% of female adolescents strongly agreed that they use Internet at cybercafe. Overall percentage of adolescents who use Internet at cybercafe was 11.2%. 47.5% of male and 28.5% of female adolescents agreed that they use Internet at cyber café. Overall 38% of adolescents agreed that they use Internet at cyber café. 22.5% of male and 19% of female adolescents were uncertain about their Internet use at cybercafe. Overall 20.8% of adolescents were uncertain about their Internet use at cybercafe. 14.5% of male and 25.5% of female adolescents disagreed that they use Internet at cybercafe. Overall 20% of adolescents disagreed that they use Internet at cybercafe. Only 3% of male and 17% of adolescents strongly disagreed that they use Internet at cybercafe. Overall percentage of individual who strongly disagreed about their Internet usage was found to be only 10%.

**Findings related to male and female adolescents internet usage at library.**

8.5% of male and 6% of female adolescents strongly agreed that they use Internet at library. Overall 7.3% of individuals use Internet at library.41% of male and 10.5% of female adolescents agreed that they use Internet at library. Overall 25.7% of adolescents agreed that they use Internet at library.16.5% of male and same percentage of female adolescents were uncertain about their Internet use at library. 24.5% of male and 34.5% of female adolescents disagreed that they use Internet at library. Overall 29.5% of adolescents disagreed that they use Internet at library. 9.5% of male and 32.5% of female adolescents strongly disagreed that
they use internet at library. Overall percentages of adolescents who use Internet at library were found to be 21%.

**Findings related to male and female adolescents internet usage at school**

14% of male and 10% of female adolescents strongly agreed that they use Internet at school. Overall 12% of adolescents strongly agreed that they use Internet at school. 29% of male and 7% of female adolescents agreed that they use Internet at school. Overall 18% of adolescents agreed that they use Internet at school. 17% of male and 13% of female adolescents were uncertain about their Internet use at school. Overall 15% of adolescents were uncertain about their Internet use at school. 18.5% of male and 27% of female adolescents disagreed that they use Internet at school. Overall 22.8% of adolescents disagreed that they use Internet at school. 21.5% of male and 43% of female adolescents strongly disagreed that they use Internet at school. Overall percentage of adolescents who strongly disagreed that use internet at school was found to be 32.2%.

**Findings related to male and female adolescents internet usage to chat with friends.**

47% of male and 34.5% of female adolescents strongly agreed that they use Internet to chat with their friends. Overall 40.7% of adolescents strongly agreed that they use Internet to chat with their friends. 32.5% of male and 31.5% of female adolescents agreed, 10% of male and 15.5% of female adolescents were uncertain, 7.5% of male and 11.5% female adolescents disagreed and only 3% of male and 7% of female adolescents strongly disagreed that they use internet to chat with their friends. From the above table it was inferred that male adolescents use Internet more to chat with their friends when compared with their female counterparts.

**Findings related to male and female adolescents internet usage to chat with relatives.**

7.5% male adolescents and 6.5% of female adolescents strongly agreed that they use Internet to chat with their relatives. 24% male and 23.5% of female adolescents agreed, 31.5% of male and 33.5% of female adolescents were uncertain, 28.5% of male and 23% of female adolescents disagreed and 8.5% of male and 13.5% of female adolescents strongly disagreed that they use internet to chat with their relatives Percentage of adolescents using internet to chat with their relatives were higher among male adolescents when compared with female adolescents. But overall percentage of adolescents using Internet to chat with relatives was not high (7 % strongly agreed and 23.7% agreed).

**Findings related to male and female adolescents internet usage to chat with strangers.**

30.5% of male and 28% of female adolescents strongly agreed that they use internet to chat with strangers. 34.5% of male and 31% of female adolescents agreed, 23.5% of male and 19.5% were uncertain. 10% of male adolescents and 9.5% of female adolescents disagreed
and 1.5% of male and 12% of female adolescents strongly disagreed that they use Internet to chat with strangers. Overall percentages of adolescents who use Internet to chat with the strangers were higher among male adolescents when compared with their female counterparts.

**Findings related to male and female adolescents internet usage for playing games**

Online games have become popular these days among the people of all age groups. It was found that 34% of male and 6% of female adolescents strongly agreed, 35% of male and 16.5% of adolescents agreed that they use Internet to play games. 22% of male adolescents and 33% of female adolescents were uncertain, 7.5% of male and 23% of female adolescents disagreed and 1.5% of male and 21.5% of female adolescents strongly disagreed that they use Internet to play games. Percentage of adolescents who use Internet to play games was found to be higher among males as compared with their female counterparts.

**Findings related to male and female adolescents internet usage for making new friends/relations**

29% of male and 24.5% of female adolescents strongly agreed that they use Internet for making friends and new relationships. 28% of male and 32.5% of female adolescents agreed, 14.5% of male and 17% of female adolescents were uncertain. 21% of male and 9.5% of female adolescents disagreed. 7.5% of male adolescents and 16.5% of female adolescents strongly disagreed that they use Internet for making new friends and relationships. Overall percentages of adolescents who use Internet for making friends and new relationships on Internet were found to be higher among males when compared with females.

**Findings related to male and female adolescents internet usage for watching movies.**

33.5% of male and 10.5% of female adolescents strongly agreed that they use Internet for watching movies. 31.5% of male and 26% of female adolescents agreed. 19.5% of male and 21.5% of female adolescents were uncertain about their Internet use for the purpose of watching movies. 10.5% of male and 18.5% of female adolescents disagreed, and 5% of male and 23.5% of female adolescents strongly disagreed that they use Internet for watching movies. Overall percentage of adolescents who use internet for watching movies was found to be higher among males when compared with their females counterparts.

**Findings related to male and female adolescents internet usage for online shopping**

23% of male and 10.5% of female adolescents strongly agreed that they use Internet for online shopping. 27% of male and 16.5% of female adolescents agreed, 20.5% of male and 28% of female adolescents were uncertain, 21% of male and 19% of female adolescents disagreed and 8.5% of male and 26% of female adolescents strongly disagreed that they use
internet or online shopping. Overall percentages of adolescents who use Internet for online shopping were found to be higher among males as compared with their female counterparts.

**Findings related to male and female adolescents internet usage for downloading software**

33% of male and 17% of female adolescents strongly agreed that they use Internet to download software from the Internet. 28% of male and 26.5% of female adolescents agreed, 22% of male and 19% of female adolescents were uncertain, 10.5% of male and 13% of female adolescents disagreed and only 6.5% of male and 24.5% of female adolescents strongly disagreed that they use internet to download different software from the internet. Overall, percentage of adolescents who use internet to download software’s from the internet were found to be high among males when compared with their female counterparts.

**Findings related to male and female adolescents Internet usage for downloading notes.**

41% of male and 24% of female adolescents strongly agreed that use Internet to download notes. 32.5% of male and 30% of female adolescents agreed, 15% of male and 19% of female adolescents were uncertain, 8% of male and 7.5% of female adolescents disagreed and only 3.5% of male and 19.5% of female adolescents strongly disagreed that they use internet to download notes. Overall percentage of adolescents who use internet for downloading notes was found to be higher among male adolescents when compared with their female adolescents.

**Findings related to male and female adolescents Internet usage for finding articles.**

38% of male adolescents and 19.5% of female adolescents strongly agreed that they use Internet to find out different articles. 23% of male and 23% of female adolescents agreed that they use Internet to find articles. 19.5% of male and 15% of female adolescents were uncertain, 11.5% of male and 15.5% of female adolescents disagreed and only 8% of male and 27% of female adolescents strongly disagreed that they use internet to find different articles. Overall percentages of adolescents who use Internet to find articles on Internet was found to be higher among males as compared with females.

**Findings related to male and female adolescents internet usage for completing school assignment.**

47.5% of male and 21.5% of female adolescents strongly agreed, 27% of male and 23% of female adolescents strongly agreed, 27% of male and 23% of female adolescents agreed, 10.5% of male and 16.5% of female adolescents were uncertain, 6.5% of male and 11% of female adolescents disagreed and 8.5% of male and 28% of female adolescents were strongly disagreed that they use internet for completing their school assignments. Overall percentage
of adolescents who use internet for their school assignments was found to be higher among males when compared with their female counterparts.

**Findings related to male and female adolescents internet usage to communicating with other students**

53.5% of males and 26.5% of female adolescents strongly agreed, 28.5% of male and 29% of female adolescents agreed, 7.5% of male and 10.5% of female adolescents were uncertain, 2.5% of male and 5.5% of female adolescents disagreed and only 8% of male and 28.5% of female adolescents strongly disagreed that they use internet to communicate with other students. Overall percentages of adolescents who use Internet to communicate with other students was found to be higher among males as compared with female adolescents.

**Findings related to male and female adolescents Internet usage for contributing their ideas.**

49.5% of male adolescents and 24.5% of male adolescents strongly agreed, 22.5% male and 21.5% of female adolescents agreed, 8% of male and 13.5% of female adolescents were uncertain, 7% of male and equal percentage of female adolescents disagreed and 13% of male and 33.5% of female adolescents strongly agreed that they use internet to give their opinions and contribute their ideas on different topics. It was also found that percentages of male adolescents who use Internet to contribute their ideas was found to be higher among males as compared to females.

**Findings related to male and female adolescents Internet usage for uploading files and documents**

47% of male and 26% of female adolescents strongly agreed that they use internet to upload files and documents. 18% of male and 16.5% of female adolescents agreed, 8.5% of male and 11% of female adolescents were uncertain, 14.5% of male and 10.5% of female adolescents disagreed, 12% of male and 36% of female adolescents strongly disagreed that they use internet to upload files and documents. Overall percentage of adolescents who use Internet to upload files and documents was found to be higher among males as compared to female adolescents.

**Findings related to male and female adolescents Internet usage for acquiring new knowledge.**

50.5% of male and 27.5% of female adolescents strongly agreed, 22% of male and 17% of female adolescents agreed, 7% of male and 9% of female adolescents were uncertain, 5.5% of male and 12% of female adolescents disagreed and 15% of male and 34.5% of female adolescents strongly disagreed that they use internet to acquire new knowledge. Overall
percentage of adolescents who use internet to acquire new knowledge was found to be higher among males as compared with females.

**Findings related to male and female adolescents internet usage for watching T.V. serials.**

Data was analyzed in order to find out the percentage of adolescents who use Internet for watching TV serials and it was found that 46% of male adolescents and 24% of female adolescents strongly agreed that they use Internet for watching TV serials. 21.5% of male and 15.5% of female adolescents agreed, 9% of male and 10% of female adolescents were uncertain, 8.5% of male and 13.5% of female adolescents disagreed, 15% of male and 37% of female adolescents strongly disagreed that they use internet for watching TV Serials. Overall percentages of adolescents who use Internet to watch TV serials was found to be higher among males as compared to females.

**Findings related to male and female adolescents internet usage for watching other videos on YouTube.**

50% of male and 29% of female adolescents strongly agreed, 29.5% of male and 23% of female adolescents agreed, 4% of male and 6.5% of female adolescents were uncertain, 5% of male and 14.5% of female adolescents disagreed, 11.5% of male and 27% of female adolescents strongly disagreed that they use internet for watching other videos on YouTube. It was also found that overall percentages of adolescents who use Internet for watching other videos on YouTube was found to be higher among male adolescents as compared to female adolescents.

**Findings related to male and female adolescents internet usage for finding books in library**

38% of male and 24.5% of female adolescents strongly agreed, 43% of male and 33% of female adolescents agreed, 8% of male and 14.5% of female adolescents were uncertain, 4.5% of male and 15.5% of female adolescents disagreed, 6.5% of male and 12.5% of female adolescents strongly disagreed that they use internet for finding books in library. Overall percentages of adolescents who use Internet for finding books in library was found to be higher among males as compared to females.

**Findings related to internet use in relation to gender and perceived social support of adolescents at different levels of internet self-efficacy.**

- Male adolescents exhibited better internet use as compared to female adolescents.
- Adolescents with different levels of Internet self-efficacy exhibited comparable internet use.
There was found a significant difference among adolescents with low, moderate and high perceived social support with respect to internet use.

- Adolescents with moderate perceived social support exhibited better internet use as compared to adolescents with low perceived social support.
- Adolescents with high perceived social support exhibited better internet use as compared to adolescents with low perceived social support.
- Adolescents with high perceived social support exhibited better internet use as compared to adolescents with moderate perceived social support.

No significant interaction was found between internet self-efficacy and perceived social support of adolescents with respect to internet use. This suggested that Internet self-efficacy and perceived social support did not interact to yield significant difference on the student’s internet use scores.

No significant interaction was found gender and internet self-efficacy of adolescents with respect to internet use. This suggested that gender and Internet self-efficacy did not interact to yield significant difference on students Internet use score.

Significant interaction was found between gender and perceived social support of adolescents with respect to internet use.

- Male adolescents with low perceived social support exhibited better internet use as compared to female adolescents with low perceived social support.
- Male adolescents with moderate perceived social support exhibited better internet use as compared to female adolescents with moderate perceived social support.
- Male adolescents with high perceived social support exhibited better internet use as compared to female adolescents with high perceived social support.
- Male adolescents with low perceived social support and male adolescents with moderate perceived social support exhibited comparable internet use.
- Male adolescents with low perceived social support and male adolescents with high perceived social support exhibited comparable internet use.

There was found significant interaction among gender, internet self-efficacy and perceived social support of adolescents with respect to internet use.

- Male adolescents with low internet self-efficacy and low perceived social support exhibited better internet use as compared to female adolescents with low internet self-efficacy and low perceived social support.
Male adolescents with moderate internet self-efficacy and low perceived social support exhibited better internet use as compared to female adolescents with moderate internet self-efficacy and low perceived social support.

Male adolescents with high internet self-efficacy and low perceived social support exhibited better internet use as compared to female adolescents with high internet self-efficacy and low perceived social support.

Male adolescents with low internet self-efficacy and moderate perceived social support exhibited better internet use as compared to female adolescents with low internet self-efficacy and moderate perceived social support.

Male adolescents with moderate internet self-efficacy and moderate perceived social support exhibited better internet use as compared to female adolescents with moderate internet self-efficacy and moderate perceived social support.

Male adolescents with high internet self-efficacy and moderate perceived social support exhibited better internet use as compared to female adolescents with high internet self-efficacy and moderate perceived social support.

Male and female adolescents with low internet self-efficacy and high perceived social support exhibited comparable internet use.

Male adolescents with moderate internet self-efficacy and high perceived social support exhibited better internet use as compared to female adolescents with moderate internet self-efficacy and high perceived social support.

Male adolescents with high internet self-efficacy and high perceived social support exhibited better internet use as compared to female adolescents with high internet self-efficacy and high perceived social support.

Male and female adolescents with high internet self-efficacy and high perceived social support exhibited comparable internet use.

Findings related to Internet use in relation to gender and computer anxiety of adolescents at different levels of internet self-efficacy.

- Male adolescents exhibited better internet use as compared to female adolescents.
- Significant difference was found among adolescents with low, moderate and high internet self-efficacy with respect to internet use.
- Adolescents with moderate internet self-efficacy exhibited better internet use as compared to adolescents with low internet self-efficacy.
- Adolescents with high internet self-efficacy exhibited better internet use as compared to adolescents with low internet self-efficacy.
- Adolescents with high internet self-efficacy and moderate internet self-efficacy exhibited comparable internet use.
There was found a significant difference among adolescents with low, moderate and high computer anxiety with respect to internet use.

- Adolescents with low computer anxiety exhibited comparable internet use as compared to adolescents with moderate computer anxiety and adolescents with high computer anxiety.
- Adolescents with high computer anxiety exhibited better internet use as compared to adolescents with moderate computer anxiety.

No significant interaction was found between internet self-efficacy and computer anxiety of adolescents with respect to internet use. So this study could not provide sufficient evidence to reject the null hypothesis H11. Hence H11 was retained.

Significant interaction was found between gender and internet self-efficacy of adolescents with respect to internet use.

- Male adolescents with low internet self-efficacy exhibited better internet use as compared to female adolescents with low internet self-efficacy.
- Male adolescents with moderate internet self-efficacy exhibited better internet use as compared to female adolescents with moderate internet self-efficacy.
- Male adolescents with high internet self-efficacy exhibited better internet use as compared to female adolescents with high internet self-efficacy.
- Male adolescents with moderate internet self-efficacy and male adolescents with low internet self-efficacy exhibited comparable internet use.

Significant interaction was found between gender and computer anxiety of adolescents with respect to internet use.

- Male adolescents with low internet self-efficacy exhibited better internet use as compared to female adolescents with low internet self-efficacy.
- Male adolescents with moderate internet self-efficacy exhibited better internet use as compared to female adolescents with moderate internet self-efficacy.
- Male adolescents with high internet self-efficacy exhibited better internet use as compared to female adolescents with high internet self-efficacy.
- Male adolescents with moderate internet self-efficacy and male adolescents with low internet self-efficacy exhibited comparable internet use.

No significant interaction among gender, internet self-efficacy and computer anxiety of adolescents with respect to internet use.
Findings related to Internet use in relation to gender and interpersonal relationships of adolescents at different levels of internet self-efficacy

- Male adolescents exhibited better internet use as compared to female adolescents. Hence

- Adolescents with different levels of Internet self-efficacy exhibited comparable internet use.

- Significant difference was found among adolescents with low, moderate and high interpersonal relationships with respect to internet use.
  - Adolescents with moderate interpersonal relationships exhibited better internet use as compared to adolescents with low interpersonal relationships.
  - Adolescents with high interpersonal relationships exhibited better internet use as compared to adolescents with low interpersonal relationships.
  - Adolescents with high interpersonal relationships exhibited better internet use as compared to adolescents with moderate interpersonal relationships.

- No significant interaction was found between internet self-efficacy and interpersonal relationships of adolescents with respect to internet use.

- There was found significant interaction between gender and internet self-efficacy of adolescents with respect to internet use.
  - Male adolescents with low internet self-efficacy exhibited better internet use as compared to female adolescents with low internet self-efficacy.
  - Male adolescents with moderate internet self-efficacy exhibited better internet use as compared to female adolescents with moderate internet self-efficacy.
  - Male adolescents with high internet self-efficacy exhibited better internet use as compared to female adolescents with high internet self-efficacy.
  - Male adolescents with moderate internet self-efficacy and male adolescents with low internet self-efficacy exhibited comparable internet use.

- Significant interaction was found between gender and interpersonal relationships of adolescents with respect to internet use.
  - Male adolescents with low interpersonal relationships exhibited better internet use as compared to female adolescents with low interpersonal relationships.
  - Male adolescents with moderate interpersonal relationships exhibited better internet use as compared to female adolescents with moderate interpersonal relationships.
- Male adolescents with high interpersonal relationships exhibited better internet use as compared to female adolescents with high interpersonal relationships.
- Male adolescents with low interpersonal relationships and male adolescents with moderate interpersonal relationships exhibited comparable internet use.
- Male adolescents with low interpersonal relationships and male adolescents with high interpersonal relationships exhibited equal internet use.
- No significant interaction was found among gender, internet self-efficacy and interpersonal relationships of adolescents with respect to internet use.

**Findings related to internet use in relation to gender and academic achievement of adolescents at different levels of internet self-efficacy**
- Significant difference was found between male and female adolescents with respect to internet use. Male adolescents exhibited better internet use as compared to female adolescents.
- There found significant difference was found among adolescents with low, moderate and high internet self-efficacy with respect to internet use.
- Adolescents with moderate internet self-efficacy exhibited better internet use as compared to adolescents with low internet self-efficacy.
- Adolescents with high internet self-efficacy exhibited better internet use as compared to adolescents with low internet self-efficacy.
- Adolescents with high internet self-efficacy and moderate internet self-efficacy exhibited comparable internet use.
- No significant difference was found among adolescents with low, moderate and high academic achievement with respect to internet use.
- No significant interaction was found between internet self-efficacy and academic achievement of adolescents with respect to internet use.
- Significant interaction was found between gender and internet self-efficacy of adolescents with respect to internet use.
- Male adolescents with low internet self-efficacy exhibited better internet use as compared to female adolescents with low internet self-efficacy.
- Male adolescents with moderate internet self-efficacy exhibited better internet use as compared to female adolescents with moderate internet self-efficacy.
- Male adolescents with high internet self-efficacy exhibited better internet use as compared to female adolescents with high internet self-efficacy.
• Male adolescents with moderate internet self-efficacy and male adolescents with low internet self-efficacy exhibited comparable internet use.

➢ No significant interaction was found between gender and academic achievement of adolescents with respect to internet use.

➢ No significant interaction was found among gender, internet self-efficacy and academic achievement of adolescents with respect to internet use.

6.13 Educational Implications

• Internet is part and parcel of our lives. The students must be aware of how to use the various search engines and which search engine is better for them. They should avoid irrelevant material on internet and how to make best use of information available on the internet regarding their subjects, online examinations; online tutorials, online aptitude check and online coaching which in turn will enhance their academic achievement.

• Adolescence is the age group who use internet more than any other age group and that too for social networking sites. There are many fake id’s and fraud people on these sites and adolescents are their easy target. So they should be made aware of these facts and proper guidance should be given to them that how to use internet and social networking sites so that they should not be targeted by these fraud people.

• There are certain dangerous games e.g. Blue whales, which can make a person commit suicide; students must be guided to play games on internet carefully.

• Adolescents are more internet addicts. They are more inclined towards internet so there should be special counselling sessions by the counselling experts for the adolescents; for understanding their problems and giving them appropriate guidance to solve them.

• There must be proper training to the adolescents regarding online shopping and online transactions because debit and credit cards get misused through some online hackers.

• Adolescents must be aware of the legal aspects of cybercrime.

• Adolescents must be educated that excessive use of internet lowers down their creativity when they are dependent on internet for every small thing, their creativity is hampered.

• Working for more than six hours on Internet for any purpose increases the computer anxiety, which results into great depression and other behavioural issues. So they must be aware of minimizing the use of the internet.
• Attention should be paid to female adolescents to motivate them to use internet for educational purposes.
• Interactive capability of internet offers an unlimited potential for transfer of learning experiences.
• Teachers need to be trained in using ICT in the classroom teaching. This will enhance quality of instruction and help teachers to guide internet use by adolescents.
• Internet use among adolescents helps them in building and maintaining good relations with their peer group, teachers, relatives and significant others. It also improves their mental health, which in turn escalates their overall interest towards studies and building professions.
• In the present times, there is no dearth of pressure for students from all fields of life be it society, peers, academics etc. and with the medium of websites like Quora, ask.com etc. students can vent out the issues and frustrations that disturb them and in return can get and guidance and directions from the related experts in various fields like relationships, stress management, academics etc. without revealing their identity. Thus internet by providing supports to adolescents becomes their friend in disguise.
• Internet use among adolescents has also led to their social conditioning, knowledge about various fields and cultures across the globe through websites like Google, encyclopaedia etc.
• Internet also helps in increasing awareness about rights and responsibilities among adolescents and helps them in making good citizens, with the help of internet one can easily speak on any topics and contribute their ideas and helps in increasing sense of belongingness.
• There is ample health related information available on the internet through which one can keep them fit and fine which helps in providing healthy manpower which plays important role in the development of society and the nation.

6.14 Suggestions for Further Research
• The study may also be planned on very large sample.
• To get the exact effects of Internet use on these variables, this study may also be conducted through experimental method.
• The study may also be conducted on larger geographical domain.
• Other variables like communication skills, cyber bullying, mental health, and emotional intelligence may also be included.

• This study focuses on the adolescents, but not on the adults. Further research could be conducted to study the effect of internet use on adults and on other age groups.

• According to the results of this study, it was found that female adolescents use internet less than male adolescents. Further research should be conducted to determine the reason for this and to find out the ways and methods to increase the internet usage among female adolescents.