COMPARATIVE STUDY OF COMPUTER SELF-EFFICACY
COMPUTER ANXIETY AND ATTITUDE TOWARDS COMPUTER
USAGE AMONG PRIMARY AND SECONDARY SCHOOL
TEACHERS IN RELATION TO LOCUS OF CONTROL

A SUMMARY OF THE THESIS

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SUMMARY

NEED OF THE STUDY

The advent of technology in the world has changed manifold. Today's schools continue to be challenged by the increased visibility, role and cost of educational technology. Considering current trends in education, a modern classroom would not be complete without computers, software, internet connection, projects and variety of other hi-tech devices. Technology is the key to its development. Technologies are essential tools for teaching and learning. To use these tools effectively and efficiently, teachers need to have a vision of its challenging professions in our society where knowledge is expanding rapidly and much of it is available to students as well as teachers at the same time (Perraton, Robison and Cread, 2001). Modern development of innovative technologies have provided new possibilities to teaching profession, but at the same time have placed more demands on teachers to learn how to use these technologies in their teaching (Robinson and Latchman, 2002).

But this scenario is not prevalent in all the school teachers. According to Hasselbring (2000) school will be equipped with the best hardware and software in near future, but it is unlikely that teachers and students will use them effectively, if teachers are not trained. However, reports indicted (Education week on the web, 1998) only half of all teachers in the United States actually use computers daily for instructional planning. Additionally, the report confirmed only 20 percent of the teachers who use computers daily feel adequately prepared to integrate educational technology into classroom instruction.

In the Oslo conference on elementary education held in 2008 it was reported that almost 10% of the untrained elementary school teachers in the world are located in Indian schools, situation is no better at the secondary level. The untrained teachers do not use relevant and effective Pedagogy and ICT and multimedia and fail to enthuse desired interest in their student in learning (Siddiqui and Bhattacharjee, 2008).
Today's teachers find themselves wandering in a situation, where they have to make use of computers to update their knowledge and deliver lessons through the computer and on the other side of the picture, they face certain stressful symptoms while dealing with the computer in the classroom. Most teachers agree that computers are very useful tool but few of them use computers extensively in the classroom. Teachers with anxiety either avoid teaching with computers or if they do not teach with them pass their anxiety and negative attitude to their students. Researches indicate low adoption of computer technology when institutions simply purchase hardware and software programmes for their users, without positive attitudes and computer self-efficacy faculty members are less likely to increase their use of technology or consider the integration of technology in their instructional activity (Dunlop, 2005).

This kind of situation is also prevalent in the Indian classroom where teachers have anxiety or technophobia to use technology, which results in a sense of low computer self-efficacy, and negative attitudes to use computers in their classroom. So there is need to investigate computer self-efficacy, attitude towards computers and computer anxiety among primary & secondary school teachers of Punjab in relation to their locus of control.

**STATEMENT OF THE PROBLEM**

**COMPARATIVE STUDY OF COMPUTER SELF-EFFICACY COMPUTER ANXIETY AND ATTITUDE TOWARDS COMPUTER USAGE AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN RELATION TO LOCUS OF CONTROL**

**OBJECTIVES OF THE STUDY**

2. To Study computer self-efficacy of school teachers with different academic streams.
3. To Study computer self-efficacy of school teachers with Internal and External Locus of control.
4. To study the interaction between
   (i) School type and locus of control
   (ii) School type and academic streams
   (iii) Academic streams and Locus of control
   with respect to computer self-efficacy.
5. To study the interaction among School type, academic streams and
   Locus of control with regards to computer self-efficacy.
7. To Study computer anxiety of school teachers with different academic
   streams.
8. To Study computer anxiety of school teachers with Internal and External
   Locus of control.
9. To study the interaction between
   (i) School type and locus of control
   (ii) School type and academic streams
   (iii) Academic streams and Locus of control
   with respect to computer anxiety.
10. To study the interaction among School type, academic streams and
    Locus of control with regards to computer anxiety.
11. To Study attitude towards computer usage of primary and secondary school
    teachers.
12. To Study attitude towards computer usage of school teachers with different
    academic streams.
13. To Study attitude towards computer usage of school teachers with Internal
    and External Locus of control.
14. To study the interaction between
(i) School type and locus of control

(ii) School type and academic streams

(iii) Academic streams and Locus of control

with respect to computer self-efficacy.

15. To study the interaction among School type, academic streams and Locus of control with regards to attitude towards computer usage.

16. To study the relationship between

- Computer self-efficacy and computer anxiety.
- Computer self-efficacy and attitude towards computer usage.
- Computer anxiety and attitude towards computer usage

Of (a) primary school teachers and (b) secondary teachers.

HYPOTHESES OF THE STUDY

Hypotheses related to mean scores on computer self-efficacy of primary and secondary school teachers in relation to locus of control.

H1 There is no significant difference between computer self-efficacy scores of primary and secondary school teachers and its dimensions viz:

H1.1 Beginning skills

H1.2 File and Software skills

H1.3 Advanced skills

H2 There is no significant difference between computer self-efficacy scores of school teachers of different academic streams viz: science/Mathematics and Social science/language and its dimensions viz.

H2.1 Beginning skills

H2.2 File and Software skills

H2.3 Advanced skills
H3  There is no significant difference between computer self-efficacy scores of school teachers with internal and external locus of control and its dimensions viz:

H3.1  Beginning skills  
H3.2  File and Software skills  
H3.3  Advanced skills  

H4  There is no interaction between school type and academic streams with respect to computer self-efficacy scores and its dimensions viz:

H4.1  Beginning skills  
H4.2  File and Software skills  
H4.3  Advanced skills  

H5  There is no interaction between school type and locus of control with respect to computer self-efficacy scores and its dimensions viz:

H5.1  Beginning skills  
H5.2  File and Software skills  
H5.3  Advanced skills  

H6  There is no interaction between academic streams and locus of control with respect to computer self-efficacy scores and its dimensions viz:

H6.1  Beginning skills  
H6.2  File and Software skills  
H6.3  Advanced skills  

H7  There is no interaction among school type, academic streams and locus of control i.e. Internal and External with respect to computer self-efficacy scores and its dimensions viz:

H7.1  Beginning skills  
H7.2  File and Software skills
H7.3  Advanced skills

**Hypotheses related to mean scores on computer anxiety of primary and secondary school teachers in relation to locus of control.**

H8  There is no significant difference between computer anxiety scores of primary and secondary school teachers and its dimensions viz:

H8.1  General Anxiety
H8.2  Confidence
H8.3  Motivation
H8.4  Power and control

H9  There is no significant difference between computer anxiety scores of school teachers of different academic streams viz: science/Mathematics and Social science/language and its dimensions viz.

H9.1  General Anxiety
H9.2  Confidence
H9.3  Motivation
H9.4  Power and control

H10  There is no significant difference between computer anxiety scores of school teachers with internal and external locus of control and its dimensions viz:

H10.1  General Anxiety
H10.2  Confidence
H10.3  Motivation
H10.4  Power and control

H11  There is no interaction between school type and academic streams with respect to computer anxiety scores and its dimensions viz:

H11.1  General Anxiety
H11.2  Confidence
H11.3  Motivation
H11.4  Power and control

H12  There is no interaction between school type and locus of control with respect to computer anxiety scores and its dimensions viz:
H12.1  General Anxiety
H12.2  Confidence
H12.3  Motivation
H12.4  Power and control

H13  There is no interaction between academic streams and locus of control with respect to computer anxiety scores and its dimensions viz:
H13.1  General Anxiety
H13.2  Confidence
H13.3  Motivation
H13.4  Power and control

H14  There is no interaction among school type, academic streams and locus of control i.e. Internal and External with respect to computer anxiety scores and its dimensions viz:
H14.1  General Anxiety
H14.2  Confidence
H14.3  Motivation
H14.4  Power and control

**Hypotheses related to mean scores on attitude towards computer usage of primary and secondary school teachers in relation to locus of control**

H15  There is no significant difference between attitude towards computer usage scores of primary and secondary school teachers and its dimensions viz:
H15.1  Cognitive Domain
H15.2  Affective Domain
H15.3 Behavior Domain

H16 There is no significant difference between attitude towards computer usage scores of school teachers of different academic streams viz: science/Mathematics and Social science/language and its dimensions viz:

H16.1 Cognitive Domain
H16.2 Affective Domain
H16.3 Behavior Domain

H17 There is no significant difference between attitude towards computer usage scores of school teachers with internal and external locus of control and its dimensions viz:

H17.1 Cognitive Domain
H17.2 Affective Domain
H17.3 Behavior Domain

H18 There is no interaction between school type and academic streams with respect to attitude towards computer usage scores and its dimensions viz:

H18.1 Cognitive Domain
H18.2 Affective Domain
H18.3 Behavior Domain

H19 There is no interaction between school type and locus of control with respect to attitude towards computer usage scores and its dimensions viz:

H19.1 Cognitive Domain
H19.2 Affective Domain
H19.3 Behavior Domain

H20 There is no interaction between academic streams and locus of control with respect to attitude towards computer usage scores and its dimensions viz:

H20.1 Cognitive Domain
H20.2  Affective Domain
H20.3  Behavior Domain

H21  There is no interaction among school type, academic streams and locus of control i.e. Internal and External with respect to attitude towards computer usage scores and its dimensions viz.

H21.1  Cognitive Domain
H21.2  Affective Domain
H21.3  Behavior Domain

**Hypotheses related to relationship among computer self-efficacy computer anxiety attitude towards computer usage.**

H22.  There exists no relationship between scores of:

H22.1. computer self-efficacy and computer Anxiety

H22.2. computer self-efficacy and Attitude towards computer usage.

H22.3. computer Anxiety and Attitude towards computer usage

For the total sample of all school teachers.

H23.  There exists no relationship between scores of:

H23.1. computer self-efficacy and computer Anxiety

H23.2. computer self-efficacy and Attitude towards computer usage.

H23.3. computer Anxiety and Attitude towards computer usage

For the total sample of primary school teachers.

H24.  There exists no relationship between scores of:

H24.1. computer self-efficacy and computer Anxiety

H24.2. computer self-efficacy and Attitude towards computer usage.

H24.3. computer Anxiety and Attitude towards computer usage

For the total sample of secondary school teachers.
DELIMITATIONS OF THE STUDY

1. The study was delimited to primary and secondary schools of Muktsar District (Punjab) only.

2. The Present study was delimited with respect to the variables, computer self-efficacy computer anxiety attitude towards computer usage and locus of control.

DESIGN OF THE STUDY

A research design is a detailed plan of the investigation. In fact, it is the detailed procedure of testing the hypotheses and analyzing the obtained data. Research design may thus be defined as a sequence of those steps taken ahead of time to ensure that the relevant data will be collected in a way that permits objective analysis of the different hypotheses formulated with respect to the research problem. Descriptive method of research was employed for the present study as this method is concerned with surveying, describing and investigating the existing phenomenon or issues, conditions and relationships that exist.

This method enabled the researcher to compare private and senior secondary school teachers of different academic streams, viz. science/mathematics and social sciences, with respect to computer self-efficacy, computer anxiety attitude towards computer usage and locus of control. School type and locus of control were the independent variables and computer self-efficacy, computer anxiety and attitude towards computer usage were the dependent variables.

Three 2x2x2 ANOVA designs were employed for analyzing the scores of computer self-efficacy, computer anxiety, attitude towards computer usage of teachers in relation to school type, locus of control and academics streams.

SAMPLE

For the current investigation, Stratified Random sampling was employed to obtain data from district Muktsar of Panjab state. Initially 400 primary and 400 secondary school teachers were administered locus of control test to identify primary and secondary school teachers with internal and external locus of control.
The final sample comprised of 400 teachers (200 primary teachers with 100 internal and 100 external LOC & 200 secondary teachers with 100 internal and 100 external LOC).

### Sample Description

<table>
<thead>
<tr>
<th>Locus of Control</th>
<th>Primary Teachers</th>
<th>Secondary Teachers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>External</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>200</td>
<td>400</td>
</tr>
</tbody>
</table>

**Primary and senior secondary school teachers sample distribution**

The sample was selected at two levels for primary and secondary school teachers viz.

(i) Primary school teachers sample

(ii) Senior secondary school teacher sample

At this level random sampling technique was followed. Care was taken that at least six teachers from each school belonged to two different academic streams, viz., social science/languages and science/mathematics

### TOOLS USED

The tools employed for data collection were:

1. Demographic characteristics data sheet (Develop by the investigator)

2. Computer Self-efficacy Scale by Roslani Embi (2007) revalidated by investigator

3. Computer Anxiety Scale (CARS) by Roslani Embi (2007) revalidated by investigator
5. Locus of control Scale by Hasnain and Joshi (1992).

**PROCEDURE**

The data was collected in two stages:

**Stage I: selection of the sample**

**Stage II: Collection of data**

**Stage I: selection of sample**

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

**Stage II: Collection of data**

After validating the related tools, the investigator contacted the principals of respective schools to obtained permission for collecting data from teachers. After securing the necessary permission, the teachers were explained the objective of the study and given the tools.

Clear instructions were given regarding filling the tools. Investigator herself interacts with the teachers and answered all their queries. It took about six months from January till July 2012 to collect data.

After collecting the questionnaire from all the teachers, scoring was done in accordance with the instruction given in the manual of each tool. Next, data of 200 teachers of primary schools was divided into two academic streams, viz., science/mathematics and social sciences/languages. Similarly, data of 200 teachers of secondary schools was divided into two academic streams, viz., science/mathematics and social science/languages. Firstly scoring of locus of control scale was done for teachers, since this was a differential variable, so the teachers were divided equally among internal and external groups of locus control.
STATISTICAL TECHNIQUES USED

- 2x2x2 ANOVA for analysis of computer self-efficacy scores and its dimensions of primary and secondary school teachers with different locus of control.

- 2x2x2 ANOVA for analysis of computer anxiety scores and its dimensions of primary and secondary school teachers with different locus of control.

- 2x2x2 ANOVA for analysis of attitude towards computer usage scores and its dimensions of primary and secondary school teachers with different locus of control.

- Co-efficient of correlation will be computed to study relationship between different variables.

PROCESSING OF THE DATA

The raw data was statistically treated and processed on statistical package for Social Sciences (SPSS) 16.

FINDINGS RELATED TO PRIMARY AND SECONDARY SCHOOL TEACHERS

Findings related to computer self-efficacy of primary and secondary school teachers in relation to locus of control.

- Primary and secondary school teachers exhibited almost equal scores on total computer self-efficacy and dimension Beginning Skill, File Skills, Advanced Skills.

- School teachers of academic streams of Science/mathematics exhibited better scores than Social science /Languages on total computer self-efficacy and dimension Beginning Skill, File Skills, and Advanced Skills.

- School teachers with External locus of control exhibited slightly better scores than their counterparts with internal locus of control on computer
self-efficacy and its dimensions Beginning Skill, File Skills, Advanced Skills.

- Primary and secondary school teachers not exhibited any difference in academic streams viz. Science/mathematics and Social science/Languages w.r.t total computer self-efficacy and its dimensions Beginning Skill, File Skills, Advanced Skills.

- Primary and secondary school teachers with External locus of control exhibited difference in scores with their counterparts with internal locus of control on computer self-efficacy dimension Advanced Skills.
  - Primary school teachers with external Locus of control exhibited better scores than their counterparts with internal locus of control of control.
  - Secondary school teachers with external locus of control exhibited better scores than their counterparts with internal locus of control.
  - Secondary school teachers with internal Locus exhibited better scores than primary teachers with Internal Locus of control.
  - Primary school teachers with external locus of control exhibited better scores than secondary school teachers with external Locus of control.

- School teachers of academic streams science/mathematics and Social science/Languages with Internal and External exhibited difference with regards to dimension File skills.
  - Science/Math school teachers with external locus of control exhibited better scores than Science/Math school teachers with internal Locus of control.
  - Science/Math school teachers with external locus of control exhibited better scores than SS/L school teachers with internal Locus of control.
  - Science/Math school teachers with external locus of control exhibited better scores than SS/L school teachers with external Locus of control.
Primary and secondary school teachers exhibited not any difference in academic streams viz. Science/mathematics and Social science /Languages and Locus of control on computer self-efficacy and its dimensions Beginning Skill, File Skills, Advanced Skills.

Findings related to computer anxiety of primary and secondary school teachers in relation to locus of control.

- Primary teachers and secondary school teacher exhibited equal scores on computer anxiety and its dimensions i.e. General Anxiety, Confidence, Motivation, Power and control.
- SS/Language school teachers exhibited higher scores than Science/Math teachers on computer anxiety and its dimensions i.e. General Anxiety and Motivation.
- School teachers with external locus of control exhibited better scores than their counterpart with internal LOC on computer anxiety and its dimensions i.e. General Anxiety, Confidence, Motivation, Power and control.
- Primary and secondary school teachers did not exhibit any difference in academic streams viz. Science/mathematics and Social science /Languages w.r.t total computer anxiety and its dimensions i.e. General Anxiety, Confidence, Motivation, Power and control.
- School teachers different locus of control viz.internal and external did not exhibit difference w.r.t total computer anxiety and its dimensions i.e. General Anxiety, Confidence, Motivation, Power and control.
- School teachers of academic streams. Science/mathematics and Social science /Languages with Internal and External locus of control did exhibited difference with regards to dimension motivation.
  - Science /Math school teachers with external locus of control exhibited better scores than Science /Math school teachers with internal Locus of control.
• SS/Language school teachers with internal locus of control exhibited better scores than Science/Math school teachers with internal Locus of control.

• SS/Language school teachers with external locus of control exhibited better scores than Science/Math school teachers with internal Locus of control.

- Primary and secondary school teachers of different academic streams viz. Science/mathematics and Social science/Languages and different Locus of control exhibited comparable scores with regard to computer anxiety and its dimensions viz. General anxiety, confidence, motivation, power and control.

Findings related to attitude towards computer usage of primary and secondary school teachers in relation to locus of control.

- Primary school teachers exhibited better scores than secondary school teachers on cognitive domain.

- SS/Language school teachers exhibited higher scores than Science/Math teachers on total computer attitude and its dimensions i.e. cognitive domain, affective domain, behavior domain.

- School teachers with external locus of control exhibited better scores than their counterpart with internal LOC on computer attitude and its dimensions i.e. cognitive domain, affective domain, behavior domain.

- Primary and secondary school teachers of different academic streams viz. Science/mathematics and Social science/Languages exhibited difference w.r.t their computer attitude and its dimensions i.e. cognitive domain, affective domain, behavior domain.

- Primary, SS/L teachers exhibited better scores than Primary, Science/Math teachers on total computer attitude.

- Secondary, SS/L school teachers exhibited better scores than primary, Science/Math school teachers on total computer attitude.
• Primary, SS/L teachers exhibited better scores than Secondary, Science/Math teachers on total computer attitude.
• Primary, SS/L teachers exhibited better scores than Secondary, SS/L teachers on total computer attitude.
• Primary, SS/L teachers exhibited better scores than Primary, Science/Math teachers for scores on dimension Cognitive domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, Science/Math teachers for scores on dimension Cognitive domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, SS/L teachers for scores on dimension Cognitive domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Primary, Science/Math teachers for scores on dimension Effective domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, Science/Math teachers for scores on dimension Effective domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, SS/L teachers for scores on dimension Effective domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Primary, Science/Math teachers for scores on dimension Behavior domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, Science/Math teachers for scores on dimension Behavior domain for school type and academic stream.
• Primary, SS/L teachers exhibited better scores than Secondary, SS/L teachers for scores on dimension Behavior domain for school type and academic stream.
Primary and secondary school teachers exhibited difference with regards to their Locus of control on dimensions cognitive domain.

- Primary teachers with external locus of control exhibited better scores than Primary teachers with internal Locus of control for scores on dimension Cognitive domain for school type and LOC.
- Primary teachers with external locus of control exhibited better scores than Secondary teachers with internal Locus of control for scores on dimension Cognitive domain for school type and LOC.
- Primary teachers with external locus of control exhibited better scores than Secondary teachers with external Locus of control for scores on dimension Cognitive domain for school type and LOC.

School teachers of academic streams. Science/mathematics and Social science /Languages with Internal and External locus of control exhibited comparable scores with regards to computer attitude and its dimensions i.e. cognitive domain, affective domain, behavior domain.

Primary and secondary school teachers of different academic streams viz. Science/mathematics and Social science /Languages and different Locus of control exhibited comparable scores with regard to computer attitude and its dimensions i.e. cognitive domain, affective domain, behavior domain.

Findings related to relationship among computer self-efficacy, computer Anxiety, Attitude towards computer usage.

For total sample of all teachers of primary and secondary schools

- Positive relationship was found between computer self-efficacy and computer Anxiety
- Positive relationship was found between computer self-efficacy and Attitude towards computer usage
- Positive relationship was found between computer Anxiety and Attitude towards computer usage.
For total sample of teachers of primary schools

- Positive relationship was found between computer self-efficacy and computer Anxiety
- Positive relationship was found between computer self-efficacy and Attitude towards computer usage
- Positive relationship was found between computer Anxiety and Attitude towards computer usage.

For total sample of teachers of secondary schools

- Positive relationship was found between computer self-efficacy and computer Anxiety
- Positive relationship was found between computer self-efficacy and Attitude towards computer usage
- Positive relationship was found between computer Anxiety and Attitude towards computer usage.

EDUCATIONAL IMPLICATIONS

The results of this study suggest that school authorities and administrators should place emphasis on building teachers perception of their ability to use technology with a view to transform classroom practice. In order to encourage teachers to integrate technology into teaching and learning, they ought to be given opportunities to acquire basic technology skills such as the use of presentation and word processing tools and the same time, organize courses on the strategies to infuse technology for pedagogical purposes.

1. Training and refresher courses for computer applications should be organized from time to time in primary and secondary schools.
2. In service computer course to enhance confidence in computer self-efficacy and computer usage need to be organized at primary and secondary levels.
3. School authorities should provide financial help to school teachers so that teachers adapt technology in the classroom.
4. Teachers need to be prompted to make use of internet for updating their knowledge and general awareness.
5. Orientation course for primary and secondary teachers need to be organized for motivating them to go for online courses.
6. Digital lesson Planning and Implementation should be promoted in all the teacher education institutions.
7. A variety of online courses may be offered by the administrators to the teachers.
8. Computer training programme for teachers need to be organized from to time so that computer anxiety never cope up. In order to build up computer self-efficacy, teachers need to compulsorily integrate technology to teaching.
9. School authorities and principals should motivate senior teachers to adapt technology in the teaching.
10. Competition focusing School subjects science, Math, social science topic through the computer need to be organized.
11. There is a need for web-based portal for teachers to exchange ideas, information and experiences. A forum for teachers needs to be developed by the administrators where they may interact, share experiences and ideas.
12. Teachers with internal locus of control should be given opportunities to visit exhibitions and inter school competitions. This activity will tend to make internal extroverts, which will further help them in learning innovative technology based methodology from their colleague and friends.
13. School authorities should provide well equipped ICT labs with connectivity and broadband facilities for school teachers as well as students.

SUGGESTIONS FOR FURTHER RESEARCH
1. This study only focuses on the primary and secondary school teachers but not postgraduate students and faculty members at universities. Further research could be conducted to study faculty member’s computer self-
efficacy, anxiety, attitude towards computer, locus of control in comparison with the results of the current study.

2. Gender, Age, Cultural, Social, Socio-economic and administrative variables can also be inculcated into computer self-efficacy, computer anxiety, attitude towards computer usage.

3. The study can be done on teachers and students of educational colleges and degree colleges.

4. Cross country comparison can also make to assess computer self-efficacy, computer anxiety, attitude towards computer usage and locus of control.

5. The sample for the current investigation was limited 400 primary 400 secondary school teachers, but further research may also be planned on very large sample.

6. This study involved only one district of Punjab i.e. schools of Muktsar. But its scope could be widened if research can be conducted on other states of Punjab and Rajasthan.

7. This study used subjective, self-reported measures of computer anxiety and computer self-efficacy; hence, the results are a measure of how the respondents perceived their own competence and not an actual demonstration of competence. Further studies could thus be conducted by providing tasks to be completed within specified time using the available computer applications, and having the respondents answering a few short questions when the tasks are completed. The questions may focus on the respondents’ levels of self-efficacy and anxiety and allow them to rate themselves. These results may reveal different and interesting outcomes since the respondents have personally to prove themselves.