



## Full Length Research Article

### COMPUTER ANXIETY AMONG HIGHER SECONDARY STUDENTS

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#### ABSTRACT

Now-a-days computers are put to various applications in Science, Commerce, Technology, etc. Relatively, computers in teaching are in its infancy. However, the computer is bringing some exciting innovations to education. Computers are being increasingly used in teaching and learning at all levels. Many more recent publications in the field of education reveal that current development in education is e-Learning. The e-learning refers to online delivery of information, communication, education and training. The role of computer is essential in promoting not only on 'e-learning' but it can be also used in modern applications in the field of education. This study indicates that Computer Anxiety of the Higher Secondary school students is below the average level. Computer Anxiety of the Higher Secondary school students is independent of one's school kind, school system and tuition undergoing and dependent of one's sex, group studying, locality of school, study habit, computer course undergone and browsing habit.

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## INTRODUCTION

Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioral components. These components combine to create an unpleasant feeling that is typically associated with uneasiness, fear, or worry. The symptoms of anxiety are restlessness, easily tired, trouble connecting, irritability, frequent urination, lumbago, palpitations, backache, trembling, churning stomach etc. Anxiety is considered a normal reaction to stress. It may help a person to deal with a difficult situation, for example at work or at school, by prompting him to cope with it. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder. As computer emerged into the main stream in the 1980's, it became apparent that many users experienced anxiety in using this new technological device. Many researchers have spent the greater part of the past two decades verifying the existence of the construct of computer anxiety. Computer anxiety refers to students' fear of computers as the tendency of a student to uneasiness, apprehensive and phobic towards current or future use of computer in general. An individual is considered as computer anxious, if the emotional state during interaction with computer reduces the benefits of the use of computers and discourage necessary use of computers. The Directorate of School Education, Government of Tamil Nadu, has planned to introduce web-based instruction for school students under the Information Technology Policy

from 2010-2011 onwards. Web-based instruction or internet based instruction is gradually to introduce in school education. There is a need to develop a tool for computer anxiety for school students, especially Higher Secondary Students, which will provide flexibility, confidence and also relaxed learning atmosphere, computers are to be introduced in the class.

#### VARIABLES OF THE STUDY

The variables involved in this study are as follows:

**Independent Variables:** Sex, Group studying, Locality of the School, School kind, Study habit, Tuition undergoing, Computer course undergone, and Browsing habit.

**Dependent Variable:** Computer Anxiety

#### OBJECTIVES OF THE STUDY

1. To measure the level of computer anxiety of the higher secondary students.
2. To find out, whether there is a significant difference among higher secondary students in terms of select independent variables in their computer anxiety.

#### HYPOTHESES OF THE STUDY

The study has been designed to verify the following hypotheses:

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1. Higher Secondary students have below average level of computer anxiety.
2. Each of the independent variables (sex, group studying, locality of the school, school kind, study habit, tuition undergoing, computer course undergone and browsing habit) involve in this study exerts a significant influence on higher secondary students' computer anxiety.

## METHODOLOGY-IN-BRIEF

### Subjects of the study

A sample of 370 students studying in seven higher secondary schools in Madurai Revenue District, under Tamil Nadu State Board System, served as the subjects of the study.

### Tools used

The tools used for data collection are as follows:

1. Computer Anxiety scale (Constructed and Standardized by Kannan and Muthumanickam, (2010), Madurai Kamaraj University)
2. General Information Sheet structured by the investigator

### Statistical Treatment

't' test for large independent samples

## PREPARATION OF COMPUTER ANXIETY TOOL

Twenty-six items were listed to represent learning with computer in day-to-day life, which have three alternative responses viz., Always, Sometimes and Never. Scoring was done by awarding 2 / 1 / 0 respectively for positive items and the score was given on the reverse process for negative items. Thus the score for a respondent could range between 0 and 52.

### Scrutiny by Experts

The items were re-worded based on the respondents' reactions in order to ensure correct comprehension. These corrected items were subjected to scrutiny by a panel of experts comprising of teacher educators, psychologists, media experts in terms of clarity, specificity and relevance and modifications were effected wherever needed, based on their comments.

### Pre-try-out

Thus modified and corrected items after the scrutiny by experts were administered to twenty students from two schools and the substitution of the vocabulary and concretization of the items were done based on student reactions.

### Try-out

The refined tool was administered to 110 students selected from five higher secondary schools in Madurai district.

### Formation of High and Low Computer Anxiety Groups

Since the inventory consists of twenty-six items, computer anxiety scores could ideally range between 0 and 52. The 110

students were organized in the descending order on the basis of their computer anxiety scores. The top most 27 per cent of the respondents (30) were termed high computer anxiety group and the bottom most 27 per cent of the respondents (30) as low computer anxiety group. Item analysis was carried out by the employment of the test of significance of difference between the means of the contrast high and low computer anxiety groups for each of the twenty six-items. It was done to find whether a particular item discriminate the students of high computer anxiety group from low computer anxiety group significantly and positively. Out of the twenty-six items, twenty were selected for the final computer anxiety tool. The rest of the six items were discarded. The computer anxiety score could range between 0 and 40. Out of twenty items, 1 and 11 are negative and the remaining items are positive.

### Reliability

Split-half method: The scores of the odd-even items were computed independently for each respondent for this purpose. Since 100 students were involved, there were a hundred pairs of the total odd and total even scores. The Pearson's product moment correlation co-efficient ('r') was computed ('0.86'). The computed ('r') ('0.86') is the reliability co-efficient for half the inventory. The reliability co-efficient for the whole inventory was obtained by using the Spearman brown prophecy formula

$$R = \frac{2r}{1+r}$$

Hence the reliability co-efficient for the whole inventory

$$R = \frac{2 \times (0.86)}{1 + (0.86)} = 0.92$$

The Reliability index was found by finding the square root of 'R' i.e.  $\sqrt{0.92}$  is equal to '0.96'. The reliability co-efficient is significant and high. Hence, the tool is a highly reliable one.

### Validity

#### (i) Content Validity

Content validity was established in the form of the modification and refinement of the prepared items based on the reactions of the subject experts.

#### (ii) Item Validity

Item validity was established in terms of significant discrimination items of high computer anxiety group from low computer anxiety group at 0.01 level. In-toto, the tool is a highly valid one.

## DATA ANALYSIS

The empirical average score of Computer Anxiety among XI standard students is found to be 11.12 only while the theoretical average is 20. This shows that the Computer

Anxiety among the Higher Secondary Students is half of the average level.

### COMPUTER ANXIETY AND INDEPENDENT VARIABLES

The statistical measures and the results of tests of significance of difference between the mean scores of computer anxiety among higher secondary students in terms of select independent variables are presented in Table 1.

**Table 1: Statistical measures and results of tests of significance of difference between means of computer anxiety: independent variables- wise**

Variable	Sub-variables	N	M	SD	't' value	Significance at 0.05 level
Sex	Male	190	10.22	3.21	3.24	Significant
	Female	180	12.55	4.37		
Group studying	Arts	132	12.68	4.87	3.85	Significant
	Science	238	10.48	3.79		
Locality of the School	Rural	165	13.97	2.89	4.32	Significant
	Urban	205	9.65	3.67		
School kind	Unisex	170	10.45	4.78	0.682	Not Significant
	Mixed	200	10.84	3.76		
Study habit	Individual	167	11.56	2.76	2.65	Significant
	Group	203	13.45	3.56		
Tuition undergoing	Yes	146	11.54	4.37	0.276	Not Significant
	No	224	11.38	2.58		
Computer course undergone	Yes	90	10.82	4.56	2.98	Significant
	No	280	12.87	3.58		
Browsing habit	Yes	104	10.79	5.32	3.28	Significant
	No	266	12.58	4.28		

### COMPUTER ANXIETY AND SEX

The obtained 't' value between male and female higher secondary students, 3.24 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between male and female higher secondary students in the possession of their computer anxiety. Further it is noted that female higher secondary students are having more computer anxiety than the females.

### COMPUTER ANXIETY AND GROUP STUDYING

The obtained 't' value between Arts and Science, 3.85 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between Arts and Science group of the higher secondary students in their computer anxiety. Further it is noted that arts group students are having more computer anxiety than the science group students.

### COMPUTER ANXIETY AND LOCALITY OF THE SCHOOL

The obtained 't' value between rural and urban higher secondary students, 4.32 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between rural and urban students in the possession of their computer anxiety. Further it is noted that rural students are having more computer anxiety than the urban higher secondary students.

### COMPUTER ANXIETY AND SCHOOL KIND

The obtained 't' value between unisex and mixed school students, 0.682 is lesser than the table value 1.96 at 0.05 level

of significance. This shows that there is no significant difference between unisex and mixed school students in the possession of their computer anxiety.

### COMPUTER ANXIETY AND STUDY HABIT

The obtained 't' value between individual study and group study habit of higher secondary students, 2.65 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between individual study and group study habit of higher secondary students in the possession of their computer anxiety. Further it is noted that group study habit higher secondary students are having more computer anxiety than the individual study habit higher secondary students.

### COMPUTER ANXIETY AND TUITION UNDERGOING

The obtained 't' value between those who were undergo tuition and not undergoing tuition, 0.276 is lesser than the table value 1.96 at 0.05 level of significance. This shows that there is no significant difference between the two categories of students in the possession of their computer anxiety.

### COMPUTER ANXIETY AND COMPUTER COURSE UNDERGONE

The obtained 't' value between those who were attended computer course and not attended computer course higher secondary students, 2.98 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between those who were attended computer course and not attended computer course in the possession of their computer anxiety. Further it is noted that students those who were not attended computer course having more computer anxiety than higher secondary students those who were attended computer course.

### COMPUTER ANXIETY AND BROWSING HABIT

The obtained 't' value between those who are having browsing habit and not having browsing habit, 3.28 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between those who are having browsing habit and not having browsing habit, in the possession of their computer anxiety. Further it is noted that students those who are not having browsing habit having more computer anxiety than higher secondary students those who are having browsing habit.

### HYPOTHESES VERIFICATION

The study has been designed to verify the following hypotheses:

1. Higher Secondary students have below average level of computer anxiety. The empirical average score of Computer Anxiety among XI standard students is found to be 11.12 only while the theoretical average is 20. This shows that the Computer Anxiety among the Higher Secondary Students is half of the average level. Hypothesis 1 is ACCEPTED.
2. Each of the independent variables (sex, group studying, locality of the school, school kind, study

habit, tuition undergoing, computer course undergone and browsing habit) involve in this study exerts a significant influence on higher secondary students' computer anxiety. Out of eight variables six variables influence the higher secondary students' computer anxiety. Hence hypothesis 2 is SUBSTANTIALLY ACCEPTED.

### FINDINGS OF THE STUDY

1. Computer Anxiety of the Higher Secondary school students is below the average level.
2. Computer Anxiety of the Higher Secondary school students is independent of one's school kind, school system and tuition undergoing.
3. Computer Anxiety of the Higher Secondary school students is dependent of one's sex, group studying, locality of school, study habit, computer course undergone and browsing habit.
- 4.

### EDUCATIONAL IMPLICATIONS

- The school authorities will come forward to provide more computer based training to higher secondary school female students.
- We will provide separate computer training to higher secondary arts group students.
- Government will take more initiatives to provide computer training course among the rural based higher secondary students.
- We will provide computer training course especially to higher secondary students those who have group study habit.
- Government authorities should provide necessary steps to special computer course to the higher secondary students.
- The authorities will encourage higher secondary students for their browsing habit.

### How to overcome computer anxiety?

The following suggestive measures mentioned for overcoming computer anxiety:

- Create a relaxed learning atmosphere.
- Provide trainees widespread exposure to the fundamentals and essentials of the computer.
- Use humor and flexibility when introducing the computer.
- Provide a verbal and written outline of your purpose and method.

- Start off simple and move in small steps.
- Use examples with simple applications that are relevant to each specific group of learners.
- Trainers need to always be available to fill in possible gaps.
- Trainers need to avoid touching the machine
- Trainers need to provide constant reassurance.
- Learners need to be able to get out of a lesson at any time.
- Work rationally, not emotionally, with trainee's resistance.
- Build on the whys, not just the how-tos.

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