

Predictors of Attitude of College Students Towards use of Computers

JAGPREET KAUR¹ AND KHUSHGEET KAUR²

¹Assistant Professor, Department of Education and Community Service, Arts Block No.-5, Punjabi University, Patiala, Punjab - 147002, India

²Research Fellow, Department of Education and Community Service, Arts Block No.-5, Punjabi University, Patiala, Punjab - 147002, India

Email: mahal.jagpreet@gmail.com

Received: September 9, 2014| Revised: September 10, 2014| Accepted: March 12, 2015

Published online: March, 30, 2015

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Abstract: The study focused on exploring predictors of attitude of college students towards use of computers. The data were collected from 300 government and private degree college students of Sangrur district of Punjab. The results of correlation analysis revealed negative and significant relationship of attitude of college students towards use of computers with computer related anxiety. The results revealed significant and positive relationship of attitude of college students towards use of computers with computer related self-efficacy. Further, negative and significant relationship between computer related anxiety and computer related self-efficacy among college students was reported. Computer related anxiety emerged as the most significant predictor of attitude of college students towards use of computers. These results of the study have implications for counsellors, teachers and parents.

Keywords: Use of computers, computer related anxiety, computer related self-efficacy, college students.

1. INTRODUCTION

Computers have made a dramatic impact on the contemporary society. Almost all aspects of our lives are affected by computers to a significant degree. It is even difficult to imagine a job or a task that we can complete without using computers. Of course, the field of education is no exception. Computers are used increasingly in teaching and learning processes within all subject areas at all levels of schooling (Simsek, 2011). Exposure to computer related devices has been reported to be a factor in determining one's attitudes toward computers (Brown and Inouye, 1978). Attitudes towards computers act as

Issues and Ideas
in Education
Vol. 3, No. 1
March 2015
pp. 29–39

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a key that affects students' seeing the computer as a learning tool and that determines the possibility of computers being used in the future for learning or study (Teo, 2008).

Computer related anxiety is commonly defined as emotional fear, apprehension and phobia felt by individuals towards interactions with computers or when they think about working with a computer (Herdman, 1983). Howard and Smith (1986) stated that computer related anxiety is "the tendency of a person to experience a level of uneasiness over his or her impending use of a computer." Educator's computer anxiety and computer self-efficacy are important key factors to study and to provide useful information to understand the personal motivation as well as the barriers to integrate the usage of computers in classrooms (Embi, 2007).

Bandura (1986, 1997) described self-efficacy as an individual's belief in one's ability to perform a particular and one's capabilities to organize and execute the courses of action required to produce given attainments. The term self-efficacy was soon extended to particular domains, including the use of computers (Khorrami-Arani, 2001). Compeau and Higgins (1995) defined computer self-efficacy as "a judgment of one's capability to use a computer." Delcourt and Kinzie (1993) were of the view that individuals who had high computer self-efficacy would feel competent in using different computer hardware and software and vice-versa.

From the review of related studies, it may be concluded that a high level of computer anxiety had been negatively related to learning computer skills, resistance to use of computers and poorer task performance among students (Heinssen, Glass, & Knight, 1987; Harrington, McElroy, & Morrow, 1990; Torkzadeh and Angulo, 1992; Weil & Rosen, 1995). Both very-low and very-high anxiety levels had been proved to be detrimental for performance; moderate anxiety level appeared to contribute more to achieving crucial and difficult goals such as computing (Simsek, 2011). Computer related anxiety had been reported to be significantly, but negatively related to computer self-efficacy (Paxton & Turner, 1984; Brosnan, 1998; Johnson, 2005; Roslan & Mun, 2005; Sam, Othman, & Nordin, 2005; Simsek, 2011). Computer related self-efficacy had been found to be significantly correlated with the use of computers (Compeau & Higgins, 1995; Compeau, Higgins, & Huff, 1999; Hasan, 2003; Marakas, Yi & Johnson, 1998; Potosky, 2002). As computer-related attitudes have been found to influence students' desire to use computers, their desire to enrol in computer-related subjects and courses, and their choice of career path (Whitrow, 1999), it was considered worthwhile to delve into predictors of attitude of college students towards use of computers.

1.2 Objectives of the study

1. To study attitude of college students towards use of computers, computer related anxiety and computer related self-efficacy.
2. To study attitude of college students towards use of computers in relation to computer related anxiety.
3. To study attitude of college students towards use of computers in relation to computer related self-efficacy.
4. To study computer related anxiety and computer related self-efficacy as predictors of attitude towards use of computers among college students.

1.3 Method

The study was conducted through descriptive method of research.

1.4 Participants

For the purpose of the study, a representative sample of 300 college students studying in first year degree class pursuing different courses of arts, science and professional stream were randomly selected using stratified random sampling technique of sampling from Sangrur district of Punjab. Out of the sample of 300 students, 150 students (75 boys and 75 girls) were taken from government colleges and 150 (75 boys and 75 girls) were taken from private colleges.

1.5 Tools

The following tools were selected and used by the investigators in the present study:

- I. *Computer Attitude Scale (Nickell and Pinto, 1986)*: Computer Attitude Scale was used to measure the attitude of college students towards the use of computers. It is a highly reliable and valid test, consisting of 20 items, where the respondents were required to provide response in five categories corresponding to their level of agreement with the statements given as (1 = “strongly agree” to 5 = “strongly disagree”).
- II. *Computer Anxiety Rating Scale (CARS) (Heinssen, Glass, & Knight, 1987)*: CARS, a self-report inventory was used to assess levels of computer anxiety. It is 19-item scale which is based on a five-point Likert scale (1= “strongly disagree” to 5= “strongly agree”), consisting items such as technical capability, appeal of learning about and using computers, being controlled by computers, learning computer skills, and traits to overcome anxiety.

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III. *Computer Self-Efficacy Scale (CSES) (Durndell, Haag, & Laithwaite, 2000)*: This instrument consists of 29 items and is scored in a 5-point Likert format (ranging from 1 = “strongly disagree” to 5 = “strongly agree”), with high scores indicating a high degree of confidence in a subject’s ability to use computers. The measure was originally used by Murphy, Coover, & Owen (1989), and was refined by Torkzadeh and Koufteros (1994). Durndell et al. (2000) made further slight modifications to allow for changes in computer-related practice and terminology.

1.6 Results and Discussion

Descriptive statistics namely mean, median, mode and standard deviation was used to study attitude of college students towards use of computers, computer related anxiety and computer related self-efficacy. Correlation was used to study the relationship of attitude of college students towards use of computers in relation to computer related anxiety and computer related self-efficacy. Regression was used to study computer related anxiety and computer related self-efficacy as predictors of attitude of college students towards use of computers.

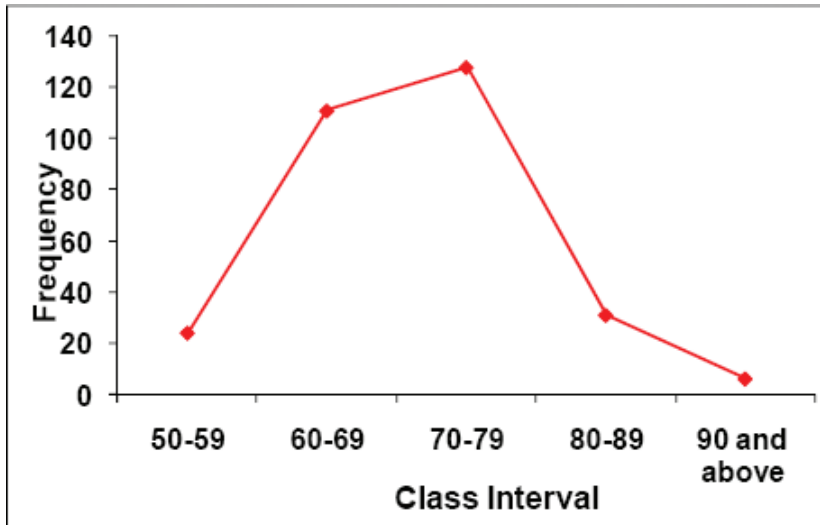
1.7 Attitude of college students towards use of computers

The table I shows the frequency distribution of scores of attitude of college students towards use of computers.

Table I: Attitude of College Students towards Use of Computers.

Class Interval	Frequency	Percentage	cpf
90 and above	6	2.00	100.00
80-89	31	10.34	97.99
70-79	128	42.66	87.66
60-69	111	37.00	45.00
50-59	24	8.00	8.00
	300	100	

Mean= 70.90; Median= 70.00; Mode= 69.00; SD= 7.91; Skewness= 0.18; Kurtosis= -0.047



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Figure I: Attitude of College Students towards Use of Computers.

It may be observed from the table I that mean value of attitude score towards use of computers of college students came out to be 70.90, median is 70.00, Mode is 69.00, skewness is 0.18, kurtosis is -0.047 and SD value is 7.91. The table shows that 45% students possess below average level of attitude towards use of computers and 12.34% students possess an above average level of attitude towards use of computers. Only 42.66% of college students possess an average level of attitude towards use of computers. In general, it can be concluded that most of the college students possess below average level of attitude towards use of computers.

1.8 Computer related anxiety among college students

The frequency distribution of computer related anxiety scores of college students are given in the table II.

It may be noted from the table II that mean computer related anxiety score for college students came out to be 67.45, median is 68.00, mode is 67.00, skewness is -0.51, kurtosis is 0.83 and SD value is 7.05. The table reveals that 12% students have below average level of computer related anxiety and 40% students possess an above average level of computer related anxiety. Whereas, 48% students have an average level of computer related anxiety. In general, it can be said that most of the college students possess an average level of computer related anxiety.

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Table III: Frequency Distribution of Computer related Self-Efficacy among College Students.

Class Interval	Frequency	Percentage	Cpf
140-149	11	3.66	100.00
130-139	42	14.00	96.33
120-129	78	26.00	82.32
110-119	107	35.67	56.32
100-109	31	10.33	20.66
90-99	19	6.34	10.33
80-89	9	3.00	4.00
70-79	3	1.00	1.00
	300	100	

Mean= 117.19; Median= 117.00; Mode= 116.00; SD= 1.33; Skewness= -0.63; Kurtosis= 0.81 Mean= 117.19; Median= 117.00; Mode= 116.00; SD= 1.33; Skewness= -0.63; Kurtosis= 0.81

1.9 Computer related self-efficacy among college students

The table III shows the frequency distribution of computer related self-efficacy scores for college students.

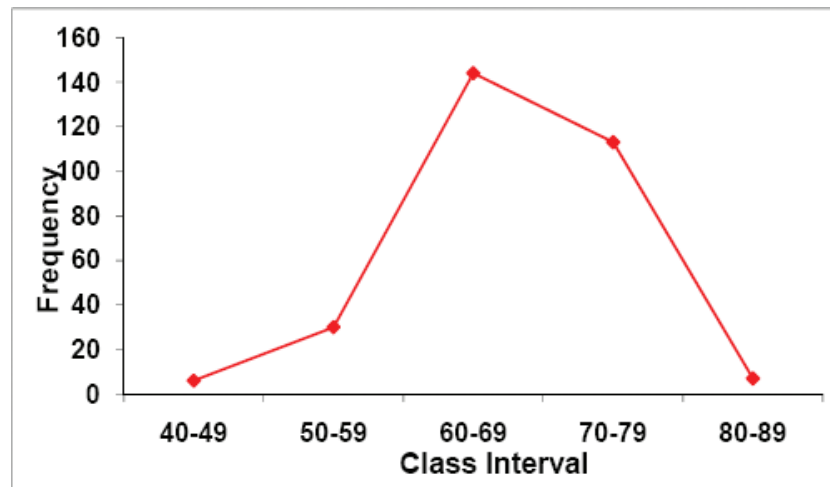


Figure II: Distribution of Computer Related Anxiety among College Students.

It is evident from the table III that mean score for computer related self-efficacy came out to be 117.19, median is 117.00, mode is 116.00, skewness is -0.63, kurtosis is 0.81 and SD value is 1.33. As seen from the table, 20.67% students possess below average level of computer related self-efficacy and 35.67% students possess an average level of computer related self-efficacy. Whereas, 43.66% college students possess an above average level of computer related self-efficacy. In general, it can be concluded that most of the college students possess an above average level of computer related self-efficacy.

1.10 Attitude towards use of computer, computer related anxiety and computer related self-efficacy: correlation analysis

The co-efficients of correlation between attitude towards use of computers and computer related anxiety, attitude towards use of computers and computer related self-efficacy, computer related anxiety and computer related self-efficacy among college students are given in table IV.

The table IV shows that the value of correlation co-efficient between attitude towards use of computers and computer related anxiety came out to be -.51 which is significant at 0.01 level. It indicates that there is a negative and significant relationship between attitude towards use of computers and computer related anxiety. Further, the table IV reveals that the value of correlation co-efficient between attitude towards use of computers and computer related self-efficacy came out to be 0.27 respectively. This value is significant at 0.01 level. This indicates that there is significant and positive relationship between attitude towards use of computers and computer related self-efficacy. Also, the value of correlation coefficient between computer related anxiety and computer related self-efficacy came out to be -.40 which is significant at 0.01 level. This indicates that there is a significant and negative relationship

Table IV: Correlation among the Variables under Study (N=300).

S.No.	Variable	Attitude Towards Use of Computer	Computer Related Anxiety	Computer Related Self-efficacy
1.	Attitude towards use of computer	1	-0.51**	0.27**
2.	Computer related anxiety	-0.51**	1	-0.40**
3.	Computer related self-efficacy	0.27**	-0.40**	1

*p≤0.05; **p≤0.01

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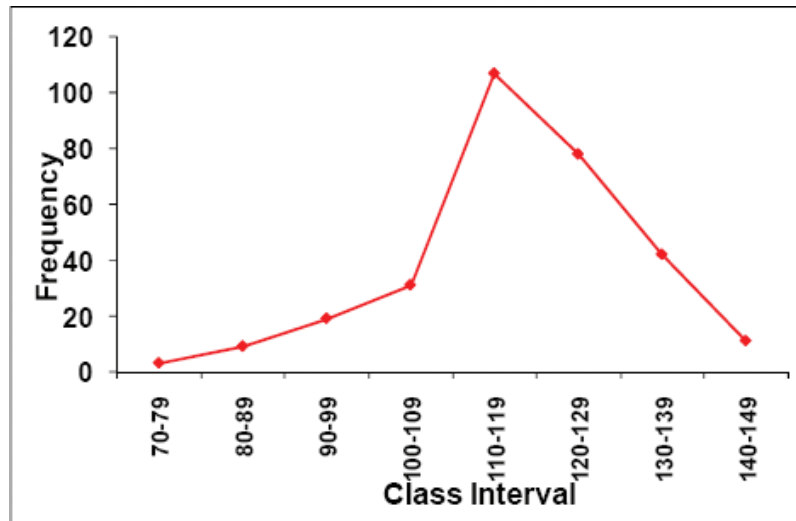


Figure III: Frequency Distribution of Computer Related Self-Efficacy among College Students.

between computer related anxiety and computer related self-efficacy among college students. These results find support from earlier researches (Paxton & Turner, 1984; Brosnan, 1998; Johnson, 2005; Roslan & Mun, 2005; Sam et al., 2005; Simsek, 2011).

1.11 Predictors of attitude of college students towards use of computers

In order to find out the contribution of computer related anxiety and computer related self-efficacy to attitude towards use of computers, a step-wise multiple regression analysis was carried out. Only the values of coefficient multiple correlation (R) determining the total effect of contributing factors, R^2 and R^2 change along with variance in predictors of attitude towards use of computers is reported in the table V.

Table V: Predictors of Attitude of College Students towards Use of Computers.

Predictor	R	R^2	R^2 Change	% Variance	F-value
Computer Related Anxiety	0.505 ^a	0.255	0.252	25%	101.99**

* $p \leq 0.05$; ** $p \leq 0.01$

The table V showing the results of step-wise multiple regression reveals that out of computer related anxiety and computer related self-efficacy, only computer related anxiety emerged as the most significant predictor of attitude of college students towards use of computers while explaining 25% of the variance in attitude of college students towards use of computers. Computer related anxiety is found to be a negative contributor to attitude of college students towards use of computers. The results are in line with the previous studies (Busch, 1995; Adebowale, Adediwura, & Bada, 2009).

1.12 Educational Implications

1. In order to enhance the attitude towards use of computers among students, computer education curriculum should be updated so as to enable the students to grasp and understand the usage and improve their attitude towards use of computers.
2. Motivation should be given to students to use more and more computers so that they can easily access the computer without any computer related anxiety. The more they will use computer, the more they will gain the computer related self-efficacy.
3. The students should not be too much dependent on computers; rather their abstract thinking should be developed, as machines have limited functions.
4. The computers should be for knowledge gathering not for knowledge generating, as it is the role of humans. Thus, the intellect of the students should be developed.

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