

# Teachers' Attitude towards Computer and E-learning: An Exploratory Study of Panjab University, Chandigarh, India

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### Abstract

Important changes have been seen in the field of education due to the technological advancements. e-learning is an upcoming method that used technology to assist student learning. It is one of the tools that has emerged from information technology and has been integrated in many universities. The study presented here focuses on the relationship between faculty of student and their response and attitude towards e-learning. In light of literature it is recognized that faculty of students does play a role in understanding the satisfaction and experience of students in the education environment. This paper analyses the attitude of teachers towards e-learning. In this study 85 teachers teaching in 6 major faculties in Panjab University Chandigarh, India were analyzed. To measure the attitude of teachers a scale assessing computer and e-learning attitude was used. The results show a favorable bent of teachers towards e-learning. The results indicate no significant effect of gender or faculty of teacher in teacher's attitude towards computer and e-learning whereas a significant effect of age was seen on teachers attitude towards computer & e-learning The research outcomes can be used as an input for framing the e-learning platform or tool for implementing virtual learning environment in an educational setting through teachers.

**Keywords:** E-learning Attitude, Teachers, Computer Attitude.

### Introduction

The word 'virtual' can be defined as, "being actively connected to a network or computer system; usually being able to interactively exchange data, commands, and information". A Virtual Learning Environment (VLE), therefore, is a learning environment that exists solely in the form of digital content that is stored, accessed, and exchanged through networked computer and information systems. While VLE may exclusively imply learning spaces that exist completely independent of physical classrooms. Virtual Learning Environment (VLE), however, can also work in conjunction with traditional classroom environments. In these settings the internet is used to provide additional communication and material, but does not necessarily replace the learning that occurs in the physical classroom. The deliberate use of networked information and technology in teaching and learning is referred to as e-learning. Primarily, they all refer to educational processes that make use of information and communications technology. Information and Communication Technologies (ICT) has revolutionized the all the sectors across the

globe. We witness radically revised teaching and learning strategies with the aim of providing better service to the learners through the intensive use of the ICT. The previous researchers have analyzed the effect of demographic variables such as age and gender on e-learning attitude of teachers. This research builds an approach to examine the attitude of teachers towards the computer technology and e-learning.

### Review of Literature

[1] found that for adequately supporting the learning transition it is essential to study the general attitude towards engaging in learning through technology. It also reported that the organisational infrastructure often presents the greatest barrier to such developments. Bassfar, Rozinah and Merza (2012) and [13] in their researches revealed that there is no significant difference in the teacher candidates' attitudes and self-efficacy toward e-learning on the basis of gender and age group. Affective attitude is considered as the highest contributor of computer attitude followed by perceived usefulness, behavior, and perceived behavioral control attitudes [7]. Teaching faculty was seen to have a high positive computer attitude; with purposeful practice and enabling environment and it was found that they can manage technology-oriented proficiencies and professional performances effectively. Similar study from [13] in Egypt reported that the teachers' at Egyptian public schools have positive attitude towards computers. Teachers have a favorable attitude towards e-learning. Difference in the attitude towards e-learning was also reported between teachers who were familiar about computer and information communication technology with the one who were not familiar [5] [8] [9] [12]. [6] in his research a significant difference on the basis of ; attending computer classes, having a computer, level of using a computer, frequency of using computer, experience of using computer and class of the scores of attitudes toward computers. It also highlighted that teachers mostly use computers at home or internet cafes. A study on Geography teachers and students by [10] depicted that the majority of had a positive attitude towards the use of computer technology in teaching and learning. [11] in their study reported the role of computer self-efficacy in mediating the impact of anxiety on perceived ease of use of computer/technology. [15] found in their study concluded that the instructors have an encouraging and positive perception towards using e-learning as a teaching assisted tool. [17] in their research reported differences between teachers in terms of their experience in online instruction and their education in online instruction. The results revealed that teachers' training in online instruction is correlated with their level of satisfaction towards the support by their university. [2] in his study concluded that teachers have positive attitudes toward ICT in education. The teacher's attitudes can be predicted by computer

attributes, cultural perceptions and computer competence. However a positive relationship between global course evaluations and the learning experiences that students engaged in was found. [16] in their research had concluded that academic lecturers have positive attitude towards making use of computers and Internet in their work. A significant difference existed in teacher's inclination to develop and apply electronic learning material on the basis of teaching experience. [3] in his research found that in general females had more negative attitudes towards computers and the Internet than did men. It also revealed that there was a significant effect of gender, computer use, and self-perceived computer experience on computer anxiety attitudes, as well as several significant interaction effects. Males were found to have less computer anxiety than females; respondents who have used computers for a longer period of time and respondents with a higher self-perception of experience also show less computer anxiety. [14] also found out that teachers who frequently utilized computers in teaching had a positive opinion. [4] in his study concluded that faculty generally perceive e-learning as a positive force in helping students' achieve their learning objectives.

### Objectives of the study:

To analyze the attitude of teachers towards e-learning (VLE).

To analyze the effect of demographics on attitude of teachers towards e-learning (VLE).

### Hypothesis of Study

**H1:** There is no significant relationship between gender and teachers attitude towards computer & e-learning

**H2:** There is no significant relationship between age and teachers attitude towards computer & e-learning

**H3:** There is no significant relationship between department of teacher and teachers attitude towards computer & e-learning

### Research Methodology

The study used a survey approach for examining computer and e-learning attitudes of the teachers. The target population for the research was the teacher's teaching in the Panjab University campus. A total of 100 questionnaires were distributed among various faculties of the university. It included Faculty of Arts, Faculty of Science, Faculty of Business Management, Faculty of Engineering, and Faculty of Law. Ten departments were covered across the five faculties.

### Measurement

The questionnaire for faculty consisted of three major sections. The first section covered the demographic details followed by questions on teachers view towards e-learning

and its implementation. The second section focuses on their current confidence in usage of variety of e-learning tools. The third section was designed to judge their perception and attitude towards e-learning. The section contained 15 questions on Likert scale.

**Data Analysis**

**Overview of data gathered**

A total of 100 questionnaires were distributed across five faculty of the University. 84 questionnaires were received

back and retained for the further analysis. Thus the response rate was over 84%. SPSS and Microsoft Excel were used for analyzing the data. Statistical approach of one-way ANOVA and Chi-square test of Association was used for testing the hypothesis.

**Analysis**

The details regarding the demographic characteristics (Table 1), i.e. gender, age, faculty of study are discussed; the sample size consisted of sample units from all the major faculties of Panjab University.

**Table 1**

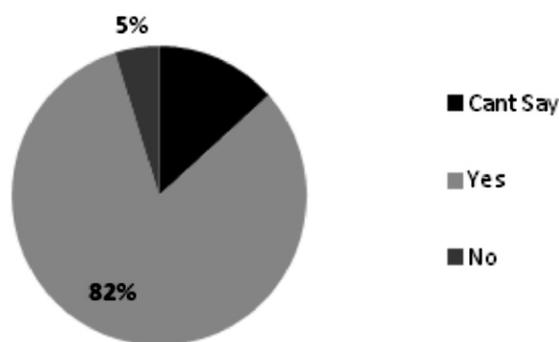
Descriptive Statistics	No of Respondents	Percentage
Faculty		
Arts	38	44.7
Business Management	11	12.9
Engineering Technology	12	17.6
Law	15	14.1
Science	07	8.2
Education	02	2.4
Gender *		
Male	32	37.6
Female	52	67.2
Age*		
Less than 30 years	40	46.5
30-40 years	29	33.7
40-50 years	9	10.5
Above 50 years	6	7.1

\* N=85 in all cases due to unmarked fields by respondents

The distribution of males and females in the sample survey was 37.6 % males and 67.2 % female. Majority of the respondents of the survey were below the age of 40 years. 46.5 % were less than 30 years and 33.7 % were between 30-

40 years. The response of teachers with respect blending of the current teaching with e-learning 82 % is given in Figure1.

**Figure 1**



Teachers Response towards plan to blend current teaching method with e-learning

82 % teachers were in favor of blending current teaching method with e-learning. 13 % were still undecided and only a small number that is 5 % responded in negation.

The scale that was constructed for measurement of computer and e-learning attitude was validated and further factor analyzed. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test is

significant with sampling adequacy of 76%. Factor analysis reduced the 15 variables into four factors after PCA with varimax rotation (Table 2). Cronbachs' alpha was 0.693 can be rounded off to 0.7 which is the expected value for an internally consistent set of variables.

**Table 2**  
Rotated Component Matrix

Statements	Component			
	1	2	3	4
VLE can improve the quality of education	.822	-.044	.094	-.142
Electronic education media will become in the next five years as important as printed books	.810	.159	-.121	.085
E-learning increases instructional proficiency	.794	.290	.113	-.010
The use of educational technologies is more time-demanding than traditional education process	.316	-.124	-.067	.674
The use of Internet reduces the interest of students for the in-the-class educational activities	.062	-.766	.128	.314
Supports group work and collaboration among students	.223	.546	.442	.147
e-learning positively affects the quality of education and the performance of the students	.269	.652	.207	.386
e-learning offers flexibility since it delivers educational material anyplace anytime	.255	.611	.173	-.083
I am confident about my ability to teach well in a course that requires me to use computer technology.	.410	.288	.570	-.222
I feel at ease learning about computer technology.	.434	.421	.464	-.176
I am concerned about the impact of computer technology on my teaching.	-.230	.299	.549	.283
I am not worried about making mistakes using computer technologies	.086	-.067	.819	.050
I feel anxious about using e-learning tools.	-.138	.149	.195	.802
The thought of using e-learning methods for teaching is uncomfortable.	-.327	-.229	-.073	.613
Overall I consider that using e-learning tools enhances my teaching.	.633	.163	.371	.015

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 7 iterations.

The four factors together explained 62.8 % of total variance which is above 60% that is taken as the acceptable level of variance by contributing factors. The factors extracted after Principal component analysis are:

- Feelings towards Computer/Technology
- Feelings towards Flexibility and Performance of computer/Technology
- SelfEfficacy in Computer/Technology
- Anxiety towards Computer/Technology

In order to test the hypothesis of the study ANOVA and Independent t-test were used.

### Results and Discussion

The first hypothesis was for testing the gender difference on teacher's attitude towards computer & e-learning is tested by using independent t-test. The test of homogeneity for attitude towards computer and e-learning had equal group variances ( $p = .100 > .05$ ).

**Table 3**  
Independent t-test

		F	Sig.	t	df	Sig. (2-tailed)
Attitude towards computer and e-learning	Equal variances assumed	2.772	.100	.155	82	.877

The t-test (Table 3) revealed that p-value for mean of attitude towards computer and e-learning at  $p < 0.05$  level [ $t = .155$ ,  $p = 0.877$ ]. Thus there is no significant gender difference

teacher's attitude towards computer and e-learning. The second hypothesis tests the relationship between age and teachers attitude towards computer & e-learning.

**Table 4**  
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.766	3	.922	5.049	.003
Within Groups	14.607	80	.183		
Total	17.373	83			

The table (Table 4) shows that at  $p < 0.05$  level [ $F(3, 80) = 5.049, p = 0.003$ ]. The F-value is lesser than 0.05 thus the null hypothesis is rejected. Thus there is significant relationship between age and teachers attitude towards

computer & e-learning. The last hypothesis tested the significant relationship between department of teacher and teacher's attitude towards computer & e-learning.

**Table 5**  
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.467	5	.093	.436	.822
Within Groups	16.906	79	.214		
Total	17.373	84			

The table shows that at  $p < 0.05$  level the F-value for attitude towards computer and e-learning [ $F(5, 79) = .436, p = 0.822$ ]. The value 0.822 is greater than .05 thus the null hypothesis is accepted. There is no significant relationship between department of teacher and teacher's attitude towards computer & e-learning.

**Conclusion**

The results of this study show that teachers of Panjab University are in favor of blending current teaching method with e-learning. The attitude of teachers was studied and four factors were extracted these were; Feelings towards Computer/Technology, Feelings towards Flexibility and Performance of computer/Technology, Self Efficacy in Computer/Technology and Anxiety towards Computer /Technology. The study fulfilled the objective of studying the effect of demographics on computer attitude, e-learning attitude of teachers. The results indicated no significant gender difference teacher's attitude towards computer and e-learning. The results fall in line with previous researches [13] [18]. Contrasting views have also been presented by [3] claiming female teachers have negative attitude towards e-learning. A significant relationship between age and teachers attitude towards computer & e-learning was seen and hypothesis was rejected. This can be attributed to the experience that teachers have. There was no significant relationship reported between department of teacher and teacher's attitude towards computer & e-learning.

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