
COMPUTER PHOBIA AMONG PRE-SERVICE AND IN-SERVICE TEACHERS IN RELATION TO ICT CULTURE

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Abstract

Today, there is a common focus on raising student's achievement while integrating technology as a tool. In this context, many classroom teachers are searching for more different ways to use technology in their courses to engage students in meaningful learning environments and allow students to use and experience powerful cognitive instruments but most of the teachers fear about handling such technological advancements. The present study was undertaken with the purpose of studying computer phobia among prospective and in-service teachers in relation to ICT culture. The study was conducted on a sample of 1200 (600 prospective and 600 in-service) teachers of science and humanities stream selected randomly from Amritsar District of Punjab. The data was collected with Computer Phobia Scale by Rajashekhar and Raja (2010) and ICT culture scale developed by the investigator. The data was analyzed using 2X2X2 ANOVA. The result indicated that pre-service teachers have less computer phobia as compared to in-service teachers. Teachers with high ICT culture are less computer phobic as compared their counter parts. As far as the academic stream is concerned science stream teachers are less computer phobic as compared to humanities stream teachers. There exist significant interaction between type of teacher and ICT culture on the variable of computer phobia.

Keywords: *Computer Phobia; ICT culture*

Computer Phobia is an intense fear of something that possess little or no danger. While people with computer phobia realize that these fears are irrational, they often find that facing or even thinking about this bring panic attack. This fear becomes further common as technology takes a more relevant place in society. Like many phobias, this irrational fear can negatively impact several areas of an individual's life.

The phobia of computers, though, particularly presents problems in business and in education as it can affect work productivity and training effectiveness. Computer Phobia is a symptom of the modern times induced by the frequently and rapidly changing nature of technology. These technologies assist teacher and facilitate learning. Thus, without a knowledge of teachers' and prospective teachers' perceptions and future plans for using computer in education, any potential innovations in this area may lack utility. Recent studies of ICT environment in teacher education focus mainly on the difficulties in establishing such environments (Wedman and Diggs, 2001; Schaffer and Richardson, 2004). Notwithstanding the immense diversity in living environments, an unprecedented and unifying global ICT culture has developed that challenges and often surpasses such traditional forms of socialization as family and school.

This complex cultural situation—in which young people are struggling to find direction in their lives or simply to survive, to improve their living conditions, and to develop their identities—has been given various names. Some call it the information or informational age, while others prefer the term techno culture or techno capitalism, global ICT culture, or simply globalization, referring to the dialectic process in which the global and the local exist as “combined and mutually implicating principles”. Labels such as post-industrial, virtual and cyber society are also in use. The idea behind all these terms is that across the globe, ICT are playing a central role in young people’s lives and in society at large.

Two major assumptions underlie the role of ICT: the first is that the proliferation of these technologies is causing rapid transformations in all areas of life; the second is that ICT function to unify and standardize culture. It is on the basis of these assumptions that the term “ICT culture”, incorporating the phenomena of informationalism and globalization, is used in the present context.

Emergence of the Problem

Tella (2007) conducted a study to assess secondary school teacher’s uses of ICTs in Nigeria. The study through census drawn on 700 teachers from twenty five purposefully selected private secondary schools in Ibadan, Oyo state, Nigeria. This comprised 430 males and 270 females. The study concluded that although teachers generally have access to ICTs in their various schools (except e-mail and Internet because their schools are not connected to the information highway), technical support are lacking in the schools and teachers lack expertise in using ICT. These factors are perceived as the prominent factors hindering teacher’s readiness and confidence in using ICTs for job delivery. Kezaih and Gertrude (2011) conducted a study to determine whether technophobia exists among female undergraduate students of Imo State University. The finding showed that technophobia does not affect the students’ choice of course but affects their academic performance and knowledge base negatively. Technophobia can however be prevented by early exposure of females to computer use, possessing personal computers, providing computer facilities in school, and lecturers giving computer-based assignments/projects. Sandhya and Sachin (2012) conducted a study on ICT culture and Computer Phobia among pupil teacher in Indian context. The study concluded that there is no significant difference between the levels of Computer Phobia in relation to type of school, stream of studies among prospective teacher.

The general findings of these studies revealed that notwithstanding the fast development of ICT infrastructures, there is still a gap between the innovation objectives and level of ICT use by teachers and connectivity and access to equipment do not necessarily guarantee successful or productive ICT use (Granger et al., 2002). It is suggested that ICT use is a complex and slow process (Levin and Wadmany 2008) that is influenced by many key factors such as the characteristics of users (teachers and students), context of technology use, and pedagogical philosophies of the country’s educational system (Granger et al., 2002). After reviewing the literature, it was found that most of the studies are restrained to foreign countries. Owing to dissimilarities in social norms and cultural values, the finding obtained from these studies may not be really applicable and useful to explain the case of Punjab (India). Although many researches were already conducted on studying this phenomenon, there are still flaws in our understanding as there is no consensus on the relationship between the variables: Computer Phobia, ICT Culture.

Objectives

1. To Study the significant difference between Computer Phobia of pre-service and in-service teachers.
2. To Study the significant difference between Computer Phobia of teachers with science and humanities academic streams.
3. To Study the significant difference between Computer Phobia of teachers with high and low ICT culture.
4. To Study the significant interaction between type of teacher and academic stream on the variable of Computer Phobia.
5. To Study the significant interaction between type of teacher and ICT Culture on the variable of Computer Phobia.
6. To Study the significant interaction between academic stream and ICT Culture on the variable of Computer Phobia.
7. To Study the significant interaction between type of teacher, academic stream and ICT Culture on the variable of Computer Phobia.

Hypotheses

- H1 There exists no significant difference between Computer Phobia of pre-service and in-service teachers.
- H2 There exists no significant difference between Computer Phobia of teachers with science and humanities academic streams.
- H3 There exists no significant difference between Computer Phobia of teachers with high and low ICT culture.
- H4 There exists no significant interaction between type of teacher and academic stream on the variable of Computer Phobia.
- H5 There exists no significant interaction between type of teacher and ICT Culture on the variable of Computer Phobia.
- H6 There exists no significant interaction between academic stream and ICT Culture on the variable of Computer Phobia.
- H7 There exists no significant interaction between type of teacher, academic stream and ICT Culture on the variable of Computer Phobia.

Sample

The sample was selected through cluster random sampling technique from Colleges of Education (600 Prospective Teachers) and Government Secondary Schools (600 In-service Teachers) of Amritsar District of Punjab.

Tools Used

1. Computer Phobia Scale (Rajasekar and Raja, 2010).
2. ICT Culture Scale developed by the investigator.

Statistical Techniques Used

2x2x2 ANOVA was used for analysis of Computer phobia scores of government and private school students with different academic streams (Science and Humanities) having high and low Peer Pressure.

Results

Table 1 Means, standard deviations and number of students on the scores of Computer Phobia in Type of Teacher, Academic Stream and ICT Culture

(2X2X2) (factorial design)

		Type of Teacher					Total	Total
		Pre-Service		Total	In-service			
		Academic Stream			Academic Stream			
		Science	Humanities		Science	Humanities		
ICT Culture	Good	M =76.11 SD=11.19 N =119	M =72.64 SD=17.18 N =70	M =74.82 SD=13.78 N =189	M =79.74 SD=19.80 N =74	M =74.49 SD=14.82 N =61	M =77.37 SD=17.86 N =135	M =75.88 SD=15.82 N =324
	Poor	M =75.53 SD=11.60 N =45	M =66.44 SD=13.39 N =67	M =70.09 SD=13.41 N =112	M =66.65 SD=14.84 N =104	M =64.75 SD=20.02 N =108	M =65.68 SD=17.65 N =212	M =67.20 SD=16.31 N =324
Total		M =75.95 SD=11.28 N =164	M =69.61 SD=15.70 N =137	M =73.06 SD=13.81 N =301	M =72.09 SD=18.27 N =178	M =68.27 SD=18.86 N =169	M =70.22 SD=18.63 N =347	
Total		M =73.94 SD=15.31 N =342				M =68.86 SD=17.51 N =306		M =71.54 SD=16.55 N =648

It may be seen from table 1 that the mean scores of students on Computer Phobia range from a low score of 64.75 in case of In-service humanities stream teachers having poor ICT culture to a high score of 79.74 in case of in-service science stream teachers having good ICT culture. The mean scores and standard deviation of these 648 cases across computer phobia is 71.54 and 16.55 respectively.

On the basis of above data three way (2X2X2) analysis of variance was carried out and the results are recorded in table 2:

Table 2 Summary of 2X2X2 Analysis of Variance on Scores of Computer Phobia in Relation to Type of Teacher, Academic Stream and ICT Culture

Source of Variation	SS	df	MSS	F-Value
Main Effects				
A: Type of Teacher	1005.80	1	1005.80	4.01**
B: Academic Stream	3464.82	1	3464.82	13.83*
C: ICT Culture	8236.20	1	8236.20	32.87*
First Order Interaction				
A X B: (Type of Teacher X Academic Stream)	299.58	1	299.58	1.19NS
AXC: (Type of Teacher X ICT Culture)	2466.51	1	2466.51	9.84*
BXC: (Academic Stream X ICT Culture)	35.51	1	35.51	0.142 NS
Second Order Interaction				
AXBXC: (Type of Teacher X Academic Stream X ICT Culture)	791.91	1	791.91	3.16NS
Within Group (Error)	160360.57	640	250.56	
Total		647		

*Significant at 0.01 level of Confidence. **Significant at 0.05 level of Confidence.

F table (1,640) at 0.01 and 0.05 level of significance is 6.70 and 3.86 respectively

Main Effect A: Effect of Type of Teacher (Pre-service and In-service) on the variable of Computer Phobia

Table 2 reveals that the F-ratio for the difference between the mean scores of Computer Phobia of Pre-service and In-service teachers came out to be 4.01 which is significant at 0.05 level of confidence. It means that both the groups were significantly different on the mean scores of Computer Phobia. The mean scores of the Pre-service and In-service teachers on the variable of Computer Phobia found to be 73.06 and 70.22 respectively. The result seems to be justified as the studies showed that today's pupil teachers are referred to as digital natives, and today's in-service teachers as digital navies. So teachers often avoid technology because they don't understand it or know how to use it to their best advantages. Pre -service teachers with more computer experience showed less computer phobia. . On the other hand, many in-service teachers claim that they have never worked in an environment where trying something genuinely innovative and giving real responsibility to learners is acceptable.

Main Effect B: Effect of Academic Stream (Science and Humanities) on the variable of Computer Phobia

Table 1 reveals that the F-ratio for the difference between the mean scores of Computer Phobia of science stream and humanities stream teachers came out to be 13.83 which is significant at 0.01 level of confidence. It means that both the groups were significantly different on the mean scores of Computer Phobia. The mean scores of the science stream and humanities stream teachers on the variable of Computer Phobia found to be 73.94 and 68.86

respectively. The result seems to be justified as. Type of teacher found significantly related to computer phobia. Science teachers are less phobic to computer because while studying science subjects digital knowledge gets involved in their studies. To prove some scientific theories, data has to be fed, calculations to be made with the help of computers. Math teachers do calculations and are very much familiar with signs and symbols, so it becomes easy for them to operate computers. Further it is noted that arts teacher are having more computer phobia than that of science teachers. Teachers dealing with social sciences and languages involved more in manual teaching-learning. Knowledge imparted by social science teachers is of descriptive nature and usage of technical terms is less in their teaching-learning.

Main Effect C: Effect of ICT Culture (Good and Poor) on the variable of Computer Phobia

Table 2 reveals that the F-ratio for the difference between the mean scores of Computer Phobia of teachers with good and poor ICT Culture came out to be 32.87 which is significant at 0.01 level of confidence. It means that both the groups were significantly different on the mean scores of Computer Phobia. The mean scores of the teachers with good and poor ICT Culture on the variable of Computer Phobia found to be 75.88 and 67.20 respectively. The result seems to be justified as Result indicates that good ICT culture decrease the computer phobia. Teachers have computer and internet facilities at school and universities believe that the use of computer supports their learning. Computer use and efficacy significantly play role in reducing phobia towards accomplishing given academic tasks via computer. Another study concluded that teachers generally have no access to ICTs in their various schools, lack expertise in using ICT and are more phobic while using computers.

Interactional Effect (AXB): Effect of Type of Teacher and Academic Stream on the variable of Computer Phobia

Table 2 reveals that the F-ratio for the difference between mean scores on Computer Phobia of teachers due to interaction between Type of Teacher and Academic Stream came out to be 1.19 which is not significant at the 0.05 level of confidence. The results show that different groups did not score different mean scores on Computer Phobia for two types of teachers and two types of academic streams.

Interactional Effect (AXC): Effect of Type of Teacher and ICT Culture on the variable of Computer Phobia

Table 2 reveals that the F-ratio for the difference between mean scores on Computer Phobia of teachers due to interaction between Type of Teacher and ICT Culture came out to be 9.84 which is significant at the 0.01 level of confidence. The results show that different groups scored different mean scores of Computer Phobia for two types of teachers and two types of ICT Culture.

To investigate further F-ratio was followed by t-test. t-ratios' for the difference in means of different combination pairs of type of teachers and ICT Culture were computed and have been recorded in table 3.

Table 3 The t-values testing significance of difference in Computer Phobia scores due to interaction of type of teacher and ICT Culture

		Type of Teacher		t-value
		Pre-service	In-service	
ICT Culture	Good	M =74.82 SD=13.78 N =189	M =77.37 SD=17.86 N =135	1.38NS
	Poor	M =70.09 SD=13.41 N =112	M =65.68 SD=17.65 N =212	2.51**
t-value		2.93*	5.97*	

* Significant at 0.01 level; ** Significant at 0.01 level; NS- non-significant at 0.05 level

Table 3 reveals that:

i. Type of Teacher and Computer Phobia in terms of two types of ICT Culture

The t-ratio showing significance of difference in Computer Phobia scores of pre-service teachers with good and poor ICT Culture came out to be 2.93 which is significant at 0.01 level of significance. It leads to the conclusion that the pre-service teachers with good and poor ICT Culture have significantly different mean scores on Computer Phobia. A comparison of the two means suggests that pre-service teachers with good ICT Culture have higher mean scores of Computer Phobia (Mean = 74.82) as compared to pre-service teachers with poor ICT Culture (Mean = 70.09). It leads to conclude that pre-service teachers with good ICT culture have less computer phobia as compared to pre-service teachers with poor ICT culture.

Whereas the t-ratio showing significance of difference in Computer Phobia scores of in-service teachers with good and poor ICT Culture came out to be 5.97 which is significant at 0.01 level of significance. It leads to the conclusion that the in-service teachers with good and poor ICT Culture have significantly different mean scores on Computer Phobia. A comparison of the two means suggests that in-service teachers with good ICT Culture have higher mean scores of Computer Phobia (Mean = 77.37) as compared to in-service teachers with poor ICT Culture (Mean = 65.68). It leads to conclude that in-service teachers with good ICT culture have less computer phobia as compared to in-service teachers with poor ICT culture. The result seems to be justified as

Even if there are sufficient ICT resources in the school to plan lessons incorporating their use, overall studies have shown that in-service teachers computer phobia to some extent is determined by availability and access to ICT material.

ii. ICT Culture and Computer Phobia in terms of two types of teachers

The t-ratio showing significance of difference in Computer Phobia scores of pre-service and in-service teachers with good ICT Culture came out to be 1.38 which is not significant at 0.05 level of significance. It leads to the conclusion that the pre-service and in-service teachers with good ICT Culture did not have significantly different mean scores on Computer Phobia. Whereas the t-ratio showing significance of difference in computer phobia scores of

pre-service and in-service teachers with poor ICT culture came out to 2.51 which is significant at 0.05 level. A comparison of the two means suggests that pre-service teachers with poor ICT Culture have higher mean scores of Computer Phobia (Mean = 70.09) as compared to in-service teachers with poor ICT Culture (Mean = 65.68). It leads to conclude that pre-service teachers with poor ICT culture have less computer phobia as compared to in-service teachers with poor ICT culture. The result seems to be justified as Result indicated that providing ICT facilities during course enables them to learn about technology integration before they start their career. There are many educational colleges which have not good technical facilities due to which pre-service teachers lack behind and are more phobic in using technology in real classroom.

Interactional Effect (BXC): Effect of Academic Stream and ICT Culture on the variable of Computer Phobia

Table 5.10 reveals that the F-ratio for the difference between mean scores on Computer Phobia of teachers due to interaction between Academic Stream and ICT Culture came out to be 0.142 which is not significant at the 0.05 level of confidence. The results show that different groups did not score different mean scores on Computer Phobia for two types of Academic Stream and two types of ICT Culture.

Interactional Effect (AXBXC): Effect of Type of Teacher, Academic Stream and ICT Culture on the variable of Computer Phobia

Table 5.10 reveals that the F-ratio for the difference between mean scores on Computer Phobia of teachers due to interaction between Type of Teacher, Academic Stream and ICT Culture came out to be 3.16 which is not significant at the 0.05 level of confidence. The results show that different groups did not score different mean scores on Computer Phobia for two types of teachers, two types of academic streams and two types of ICT Culture.

Educational Implications

This study may be helpful for modifying computer literacy and education among prospective and in-service as well as may be helpful for identifying the causes & problems for computer phobia among teachers by discussing them. This study proved that academic stream effects the computer phobia among science and humanities teachers and revealed that generally arts teachers are more computer phobic therefore there should be special provisions made for their training and learning computers. It is also helpful in creating learning environment to reduce computer phobia among teachers as well as students. This study may be giving a platform to students and teachers to discuss the related issues and to explore the different opportunities for their career advancement.

Conclusion

The present study is an attempt to explore the relation between Computer Phobia and ICT culture among pre-service and in-service teachers of different academic streams. The findings show that the pre-service teachers have less computer phobia as compared to in-service teachers. As far as the academic stream is concerned science stream teachers have less computer phobia as compared to humanities stream teachers. Also the teachers with good ICT culture have low computer phobia as compared to their counterpart. There exists significant interaction between type of teacher and ICT culture on the variable of computer phobia. There exists no significant interaction between type of teacher and academic stream

as well as academic stream and ICT culture on the variable of computer phobia. Whereas there exists significant interaction between Type of teacher and ICT culture on the variable of Computer phobia. There exists no significant interaction between type of teacher, academic stream and ICT culture on the variable of Computer phobia.

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