

Perceptions of Teachers About the Use of Computers at Elementary Schools of Punjab, Pakistan

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Abstract

Digital divide is a social issue which refers to the individuals who are provided information technology and those who do not have access to these technologies. 515 elementary schools were equipped with IT Labs in 2013. Objective of the study was to find the perceptions of elementary schools teachers about the use of computers in IT Labs. The population of the study included teachers of government elementary schools where IT Labs were established. The tool of the study was questionnaire consisting of two parts. The part first was having demographic information about the teacher. Part second included the perceptions regarding the use of computers in IT Labs. The results of the study showed that teachers were not using computers because they had no confidence to use computers due to little knowledge of computer. Majority of teachers were not able to use computers because of lack of time. It was also concluded in this study that lack of effective training was one of the important barriers to use of ICT in teaching.

Keywords: Computers, elementary, teachers, Punjab.

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Introduction

World is changing from an industrial society to information society. This change suggests that people need to be ready for accepting new challenges. Technology has been deeply affecting our social life for many years. Our precursor was utilizing various types of tools to pass on information to its beneficiary. Some made fire to prepare smoke signs and signals, then after this people started to use pen and paper to transfer information to other places. This transformation of knowledge was limited to few people who could afford it.

All comfort and facilities being enjoyed today are the result of technological progress. The information technology plays its role for the growth of economy in two ways. First in form of ICT manufacturing and second by providing ICT services. European Commission (2010) reported that the ICT industry is an important contributor to the growth of the European economy: while representing 5 % of GDP (p. 11). The computers have made it possible to spread information quickly all around the world. The business activities can be monitored irrespective of time and space. Informations can be retrieved at any moment to make choices and to preserve relations. Furthermore, connecting individuals has become rapid and affordable now days. Interconnecting with one another is simple as there are multiple channels accessible today. There is an immense volume of resources and explosion of knowledge due to information technology.

Information technology has made an unprecedented progress and will continue to advance in future too. The information technology interferes in human life as well. The personal information is not even secure. The misuse of private information is on rise. In business, information technology assumes a major part in the administration and management. According to Jorjenson (2001) the development and deployment of information technology is the foundation of the American growth resurgence (p. 2). Information technology supports to exchange informations in business and trade. Because of this, organizations can work with their customers in any part of the planet, just as they are in the same building. Gottschalk (2001) stated that the change in both in information technology and competition continue to changes the roles of the information system executives (p. 155). If we see around us, everything is a consequence of new innovation. Information technology helps in collection and exchange of data in various fields where efficiency is required. According to Global Information Technology Report (2012) information technology is introducing new opportunities to increase productivity and well-being by redefining the way business is done, generating new products and services, and improving the way public services are delivered (p. 4). Information technology is being used in different security frameworks for homes and also in organizations.

Information technology has a profound effect on education. Education has become easier and much more interesting than before due to information technology. According to Bingimlas (2009) ICT has the potential to be influential in bringing about change in ways of teaching (p. 235). Information technology improves thinking and helps to solve problems in groups and as well as increase learning of individuals. Balanskat, Blamire & Kefala (2006) stated there is some evidence that investment in ICT impacts on learner performance, learning and teaching (p. 12).

Digital divide is a social issue which refers to the individuals who are provided information technology and those who do not have access to these technologies. According to Wikipedia Encyclopedia, a digital divide is an economic and social inequality according to categories of persons in a given population in their access to, use of, or knowledge of information and communication technologies. Bridging the digital divide means to provide same technologies to the people as these technologies have been already provided to the other people. It includes providing the telecommunications facilities at every level and region not only the top urban areas of developing market but also to rural community.

Research Questions

- What are the views of teachers about the use of computers in elementary schools?
- At what context academic needs are being fulfilled in elementary schools of Punjab in computer labs?
- What are the opportunities and obstacles to use computers in elementary schools as perceived by teachers?
- Is there any difference between the perceptions of teachers about the use of computers in elementary schools based on demographic?

Design of the Study

The population of the study included teachers of government elementary schools where IT Labs were established. There are three geographic regions in province of Punjab: Northern, Central and Southern Punjab. Six districts; Attock, Jhelum from Northern Punjab, Sahiwal, Layyah from Central Punjab and Bahawal Pur and Rajan Pur from southern Punjab were selected to collect data. The teacher of government schools belonging to these six districts were taken as accessible population.

Multi stage sampling technique was used to select the sample. Two districts were selected from each geographic region northern, southern and central Punjab for collecting data. At second stage, from each district, 5 male and 5 female schools from urban and, 5 male and 5 female schools from rural area were selected by using stratified random sampling technique. The total number of schools was 120 (60 male+60 female). At third

stage 6 teachers from each school were selected randomly. Total number of 720(360 male+360 female) teachers were sent questionnaire for data collection. There were received 652 responses. The tool of the study was questionnaire consisting of two parts. The part first was having demographic information about the teacher. Part second included the perceptions regarding the use of computers in IT Labs.

Results of the Study

The data were collected from schools located in urban areas as well as in rural areas. The sample was included 236(36.2%) urban respondents and 416(63.7%) rural respondents. The rural teachers dominate the sample. This is shown in table 1.

Table 1
ICT Orientation for Teacher

Attribute		Frequency	Percentage	Cumulative%
Computer at home	Yes	474	72.7	72.3
	No	178	27.3	100
	Total	652	100	
Internet at home	Yes	335	51.4	51.4
	No	317	48.6	100
	Total	652	100	
Use of Computer at home/net café	Never	188	28.8	28.8
	Seldom	114	17.5	46.3
	Monthly	33	5.10	51.4
	After two weeks	16	2.50	53.8
	Weekly	92	14.1	67.9
	Almost Daily	124	19.0	87.0
	Daily	85	13.0	100
	Total	652	100	
Use of IT lab	Never	301	46.20	46.2
	Seldom	131	20.10	66.3
	Monthly	16	2.50	68.7
	After two weeks	17	2.60	71.3
	Weekly	77	11.8	83.1
	Almost Daily	58	8.90	92.0
	Daily	52	8.00	100
	Total	652	100	
No Training	195	29.9	29.9	

Training of Computer	Basic Level	286	43.9	73.8
	Application Level	167	25.6	99.4
	No response	4	0.60	100
	Total	652	100	—
Reason for not Using IT Lab	Lack of time	352	54.0	—
	Lack of Knowledge	217	33.0	—
	Lack of Confidence	42	6.44	—
	Computer unreliable	34	5.21	—
	Fear	25	3.83	—
	Little Experience	96	14.7	—
	Lack of training	195	29.9	—
	Accessibility	78	12.0	—

Availability of Computer at Home. Majority of the respondents 474 (72.7%) out of 652 had computer at their home while 178 respondents had no computer at their home. It means majority of sample had a computer at their home (Table 1).

Availability of internet at Home. Majority of teachers 335 (51.4%) had a facility of internet at their home while 48.6% teachers had no internet at their home (Table 1).

Use of computer at internet cafe/home. A total of 188 (28.8%) out of 652 reported that they never used computer at home or internet cafe. Only 114 (17.5%) respondents used computer at home or net café seldom whereas 33 (5.1%) respondents used computer at home or internet café on monthly basis. A short number of teachers 85(13.1%) teachers used computers daily at home or net café (Table 1). A reasonable number of teachers had no experience of using computers.

Use of computer Lab. According to collected data 301(46.2%) teachers out of 652 teachers never used IT Lab. Only 131 teachers (20.1%) seldom used IT Lab, 16 teachers (2.5 %) used IT Lab on monthly basis, 17 teachers (2.6%) used IT lab after two weeks, 77 teachers (11.8%) used IT Lab weekly, 58 teachers out of 652 (8.9%) used IT Lab almost daily and 52 teachers (8% respondents) used IT Lab daily (Table 1).

Training of Computer. A total of 195(29.9%) respondents reported that they had got no training of computer. 286 (43.6%) teachers had computer training of basic level while 167(25.6%) teachers had a training of computer of application level. There was no response by 4 teachers regarding computer training. Majority of teachers (73.8%) had no training for using applications (Table 1).

Reason for not using IT Lab. Table 1, clearly indicates that majority of teachers were not able to use computers because of either lack of time or training. 78(12%) did not have access to computers. Lack of time was the main barrier to use computers. 54% (352)

teachers reported that they were not using computers in lab due to lack of time. Lack of knowledge about computers was the second reason for not using computers. 33%(217) teachers were of view that they had no enough knowledge to use computers. 6.4% (42) teachers informed that lack of confidence was the reason for not using computers in lab. 3.8% (25) teachers were not using computers because they had fear of failure. 36.3% (96) teachers had little experience of computers. A number of teachers had lack of training to use computers. A total of 195(29.9%) respondents reported that they had got no training of computer. They had lack of training and motivation to use computer in their daily routine (Table 1).

Table 2

Comparison of Perceptions of Teachers about different Factors based on Gender.

Attributes	Male		Female		t	Sig.
	Mean	SD	Mean	SD		
Resources	16.66	2.95	17.09	2.50	4.07	.000
Accessibility	26.93	4.52	27.93	4.18	5.83	.000
Relevance	13.80	3.90	14.79	3.56	6.73	.000
Support	24.47	3.06	25.31	4.34	5.79	.000
Connectivity	15.21	3.19	16.23	2.81	8.71	.000
Monitoring	7.50	2.10	8.34	1.66	11.39	.000

The results of independent t-test indicated that there was no significant difference based on gender in availability of resources in IT Lab as perceived by teachers ($t=4.07$, $P<.05$).

The results of independent t-test indicated that there was no significant difference based on gender in accessibility of IT labs as perceived by teachers. ($t=5.83$, $P<.05$). The results of independent t-test indicated that there was no significant difference based on gender in use of IT labs for relevance use of IT Lab as perceived by teachers ($t=6.73$, $P<.05$). There was no significant difference based on gender in use of IT lab for support in use of IT Lab as perceived by teachers ($t=5.79$, $P<.05$).The results of independent t-test indicated that there was significant difference based on gender in connectivity IT lab as perceived by teachers ($t=8.71$, $P<.05$). The female teachers perceive better about connectivity of IT Lab.

Comparison of rural and urban teacher's Perceptions based on Different Factors. There was no significant difference between urban and rural teachers regarding the availability of resources in IT lab as perceived by teachers ($t=5.91$, $P<.05$). The results of independent t-test indicated that there was significant difference based on rural or urban

area in accessibility to IT Lab as perceived by teachers ($t=4.66$, $P<.05$). The urban teachers perceived better about the accessibility to IT Lab.

Table 3

Difference between the Perceptions of Teachers based on Rural and Urban.

Factors	Urban		Rural		t	Sig.
	Mean	SD	Mean	SD		
Resources	17.27	2.35	16.65	2.91	5.91	.000
Accessibility	27.97	4.02	27.17	4.55	4.66	.000
Relevance	14.68	3.83	14.15	3.66	3.66	.000
Support	25.13	3.25	24.83	3.97	2.08	.037
Connectivity	16.39	2.60	15.37	3.22	8.66	.000
Monitoring	8.06	1.84	7.89	1.94	-2.24	.025

The results of independent t-test indicated that there was no significant difference based on rural and urban teachers regarding the relevance use of IT Lab as perceived by teachers ($t=3.66$, $P<.05$). The results of independent t-test indicated that there was no significant difference based on rural and urban in providing of support for IT Lab as perceived by teachers ($t=2.08$, $P<.05$). There was significant difference based on urban and rural schools in connectivity of IT Lab as perceived by teachers ($t= 8.66$, $P<.05$). The urban teachers perceive better in connectivity of IT lab. The results of independent t-test indicated that there was no significant difference based on urban and rural schools regarding the monitoring of IT Lab ($t=2.24$, $P<.05$).

Discussion

The implementation of ICT in education is obstructed by various barriers. The barriers to implement ICT in education can be classified into different types. Keengwe and Onchwari (2008), has categorized the barriers as internal (first-order) or external(second-order) (p. 564).The barriers related to resources are first ordered barriers while the barriers related to organizational and teacher's trend and attitude to use equipment are second level barriers. The barriers to implement ICT in education are also divided into another categories. These are teacher-level barriers and school-level barriers.

Newhouse (2002) concluded that the teacher requires skills to initiate, organize and evaluate, and often needs to be prepared to change (p. 36).In this study it was reported that 3.8% (25) teachers were not using computers because they had no confidence to use computers due to little knowledge of computer. These results were supported by a study conducted by Balanskat. Balanskat (2006) found in his study that due to lack of knowledge in computer teachers feel fear of failure and they are not confident to use computer in their lesson. According to Afshari (2000), technology integration takes time; time to learn about

the innovation, time to be adequately prepared to use it (p. 96). The results of this study showed that the majority of teachers were not able to use computers because of lack of time. 54% (352) teachers reported that they were not using computers in lab due to lack of time. In earlier studies lack of effective training was also found as an important barrier to use ICT in education. In this study total of 195(29.9%) respondents reported that they had got no training of computer. Beggs (2000) concluded that the lack of effective training was one of the three important barriers to use of ICT in teaching. According to the results of this study 78(12%) did not have access to computers. Sicilia (2005) described in her study that because most of the resources were shared, there would always be someone who would not have access to computers.

Conclusions

A reasonable number of teachers had no experience of using computers. Teachers were not using computers because they had no confidence to use computers due to little knowledge of computer. Majority of teachers were not able to use computers because of lack of time. It was also concluded in this study that lack of effective training was one of the important barrier to use of ICT in teaching.