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## **Instructional Barriers of ICTs: Teachers' Experiences in Elementary Schools and Universities**

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### **Abstract:**

*This paper examines the instructional barriers of ICTs in different Pakistani schools and universities. For this a check list, questionnaire and semi-structures interview protocol sheet were used to collect the required data. Total 253 elementary school teachers and 133 university teachers from 20 different elementary schools and 6 local universities participated in the study. Moreover, all the 20 elementary schools principals and 06 chairpersons were also interviewed during the data collection phase. Findings identified that shortage of class time, limited accessibility of ICTs tools, older curricula and traditional assessment system, poor infrastructure, and language skills were the main barriers at school level. While focusing the lecture method, lack of technical staff support and fear of using ICTs tools were the main hurdles for university teachers.*

**Keywords:** *ICT tools, higher education, elementary schools, teaching with ICTs, ICTs barriers*

### **1. Introduction and Background**

The term ICT 'Information and Communication Technology' is comprised to the use of any technological based equipment which allows users to communicate or operate information. According to Cuban (2002) "Technology comprises the employment of tools, machines, materials and processes to do work and perform services or carry out other useful activities." These technological based equipments and/or tools have changed the environment in which we teach and learn. In developed countries, prominent ICTs in/for education includes television, radio, laptops, cellular phones, e-book readers, computers, printers, internet, interactive whiteboards, digital videos, simulations, multimedia, scanners, and other electronic equipments in different teaching/learning activities. The objective of integration or utilization of these ICTs should not only to modernize the educational institutions, but to promote new trends of instruction to develop students' skills for cooperation, communication, problem solving and lifelong learning. It is also expected that transformation towards ICTs based teaching and learning deals with knowledge in an active, self directed and constructive way (Drent & Meelisse, 2008). In the same directions Salehi and Salehi (2012) explained that 'the integration of ICT in teaching and learning is not a method; rather it is a medium in which a variety of methods, approaches and pedagogical philosophies may be implemented'.

Emergence of technology empowered students as an achiever rather than just learner. It is providing channels for bringing change in the learning environments (Goktas, Yildirim & Yildirim, 2009). Use of educational technologies radically increased in the developed regions of the over the last two decades and they are continually enjoying its fruitful effects. In contrast, developing countries have also adopted technology in their educational systems within few last years (Belland, 2009; Ihmeideh, 2009). In this process, they are facing many challenges and hurdles such as limited resources, shortcomings of ICTs plans, lack of administrative and technical support, trainings and teachers' attitude to ICTs (Becta, 2004). Ultimately, they are not getting proper access and results of ICTs based teaching. Unal and Ozturk (2012) extracted from Ertmer who divides these hurdles into first-order (extrinsic) and second-order (intrinsic) barriers. Where extrinsic barriers include equipments, timings, and related trainings and support while intrinsic includes teachers' willingness for ICTs based teaching and learning, role of both teachers and students, curricular objectives and assessment practices.

Teachers need to use ICTs in classrooms in order to prepare students for 21<sup>st</sup> century. For this it is important to format ICTs strategies and then implement these trends with the collaborative efforts of the stakeholders in all educational institutions at all level. To meet international standards, Government of Pakistan along with the efforts of Higher Education Commission (HEC) Pakistan are

continuously encouraging, supporting and establishing the ICTs based teaching-learning trends at all levels of education i.e., schools to universities. For this purpose they have granted funds trainings and resources in all schools within the country with the support of USAID. While HEC Pak has launched several projects in all higher educational institutions such as: Pakistan Research Responsibility, Campus Management Solution, Video Conferencing, National Digital Library, Networking Universities and different scholarships for teachers and researchers (Jamil & Shah, 2011). All elementary schools and departments in all universities have their well equipped computer laboratories. Even then, the use of ICTs at school level is not common. Because school teachers are looking reluctant to promote the use of ICTs in their classrooms and university teachers seem to be non-aggressive in taking maximum benefits from ICTs.

It is clearly mentioned in the document of National Professional Standards for Teachers in Pakistan (2009) that “teachers must be able to use instructional and information communication technologies for curriculum enrichment, instruction, assessment and evaluation of learning outcomes”. This study endeavors to make out the circumstances that obstruct the ICTs integration in education by educational stakeholders. Therefore, the main purpose of this research was to explore which extrinsic or intrinsic factors are dominant to both school teachers and university professors. Moreover, it is also important to state general descriptive information about the problems and to analyze the different aspects of the problem in detail. It would be connected with existing literature to explore possible barriers for utilization of ICTs into elementary schools’ education in Pakistan.

## 2. Research Questions

To conclude the research, following research questions were formulated:

- i. Which extrinsic (external) and intrinsic (internal) barriers were hindering school teachers in using ICT-based tools during teaching within the classrooms?
- ii. Which extrinsic (external) and intrinsic (internal) barriers were hindering university teachers in using ICT-based tools during teaching within the classrooms?

## 3. Methodology

To study the instructional barriers of ICT-based teaching in elementary schools and university level, three different tools were used: (i) semi-structured interview, (ii) a checklist and (iii) a questionnaire consisting of 68 questions were designed and submitted for review to a panel of advisors consisting of 7 head of the departments of the same university where author is employed. The constructs were compiled from the literature (Unal & Uzturk, 2012; Wee & Abu Baker, 2006) and author’s experience as teacher and researcher in a local university. After incorporating panel’s suggestions, the questionnaires and consent letters were administered personally in 20 different elementary schools and 6 local universities (3 public and 3 private).

Elementary schools were delimited because computer labs and other ICT-based tools were not only provided (by government of Pakistan in collaboration with USAID) but also the teachers of the same schools were provided trainings during 2008 -12. In universities, only those teachers were investigated which were offering their services in social sciences departments (i.e., Education, Psychology, Sociology, and Economics). These departments were delimited because of the similarity in the subjects offered by all sampled universities. Moreover, it was observed by the author in different study that teachers were least involved in ICT-based teaching practices because they believe that ICTs are more effective for pure sciences or other subjects as compared to social science (Jamil, Tariq & Shami, 2012). The elementary schools’ list was obtained from the Director of Elementary Schools Multan and the sampled universities were listed in the governmental website of Higher Education Commission Pakistan (2009). Objectives of the research were shared with all head of institutions and then requested for interview time. Checklist information was also collected through these persons on the day of interview.

Interviews consisted of 9 basic questions, were used to collect data from head of the schools or departments in universities to pursue in-depth information around the topic (DrCrcco-Bloom & Crabtree, 2006). These helped to explore the views and experiences of administrators regarding the utilization of ICT-based tools by teachers in their classes. Checklist was used to observe and quantify the ICTs-based tools in sampled institutions as a confirmation of basic ICT usage in the institutions. And data collection through a questionnaire survey was chosen because it allows a larger sample, as well as a wider geographical distribution of the sample, and the collection of a large amount of data in a relatively short time (Ries & Judd, 2000).

Questionnaire consisted of three main parts. Part one consisted of demographic information about teachers, part second was about teachers’ self-confidence about the utilization of ICTs and third part include 25 statements (which were finalized by the panel of experts), dealt with the barriers against the ICTs utilization in the classroom. All the items in part three were designed on a five-point rating scale of agreement, where 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree and 1 = strongly disagree. Reliability test Cronbach’s Alpha was used and resulted as 0.991 which was highly appreciated by the statisticians.

### 3.1. Participants

Figures 1–3 showed demographic information of sampled teachers i.e., school/university name, sex, teaching experiences and qualifications. It was also inquired whether they have received any training for using ICT tools or not? Total 386 teachers responded the questionnaire out of which 66% (253) were from elementary schools (Figure -1). Sex-wise participation of sampled teachers was almost equal in both types of institutions (Figure 2). Overall, 79% (200) school teachers agreed that they were trained to use ICT-based teaching tools while 41% (54) university teachers regretted for the same question (Figure 3).

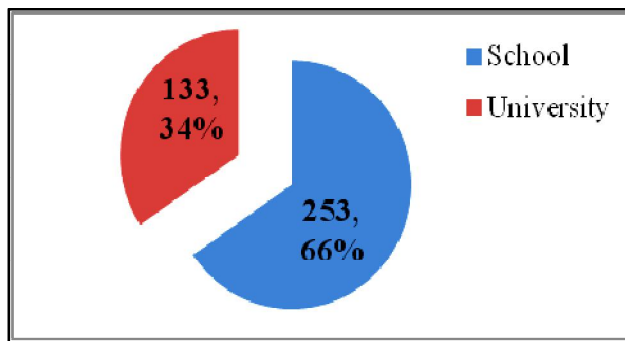


Figure 1: Overall Participants from Schools and Universities

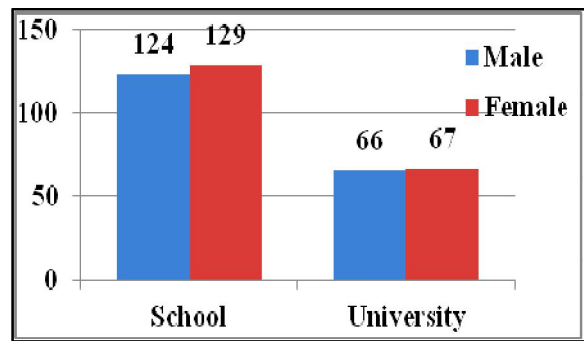


Figure 2: Sex-Wise Participation of Sampled Teachers

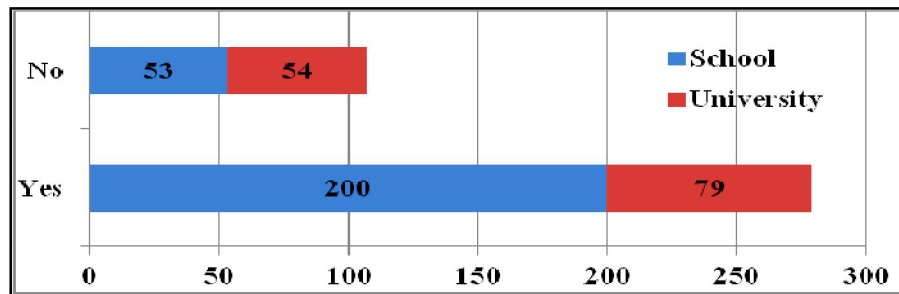


Figure 3: Frequencies of Sampled Teachers Regarding IT Training

#### 4. Results and Discussions

Results of this study were compiled in three different sections. Section – I presents results of checklist, Section – II for interviews and Section – III for Teachers Questionnaire. These results were then linked together to conclude the study.

##### 4.1. Section – I: Availability and Quantification of ICT-based Tools (Check List)

Availability of ICTs was made confirmed through a checklist with the help of all head teachers/principals/chairpersons/directors of the institutes and IT teachers of the sampled schools and universities. Items in the checklist were: (i) Desktop Computers, (ii) Multimedia Projector, (iii) LCD Projectors, (iv) Laptops, (v) CDs/DVDs, (vi) Educational Software (vii) Digital came recorder, (viii) Networking among the available systems, (ix) Audio and Video devices, (x) Online Quizzes, (xi) Students' Portfolios, (xii) Printers (xiii) Scanners (xiv) Technical staff and (xv) IT Teachers.

In the response it was observed that 19 (95%) out of 20 schools had 8-20 Desktop Computer connected with one another in computer laboratory through Networking. They were also providing Educational CD ROM, DVD ROM and Audio & Video devices. Only 4 (20%) schools were providing same ICT tools in classrooms too. Moreover, 16 (80%) schools claimed that they had internet connection in their computer labs. Only 4(20%) were equipped with LCD projectors and Multimedia. In the sampled schools 12 (60%) disclosed that they have no technical staff. IT (Information and Technology) teachers are responsible to manage the computer laboratory at their own. Remaining explain that they had only one IT administrator which also assist head teachers/principals in their offices for maintaining administrative tasks.

In case of sampled universities, it was observed that all departments have their separate computer labs equipped with at least 40-50 computer systems, multimedia and LCD projectors which were properly managed by laboratory assistants and head of the departments by themselves. Each laboratory was secured by networking and other tools as well. Came recorders were not allowed to use until they were permitted to use for specified reasons. In public sector universities, each teacher has been provided a desktop/laptop with internet connection and printer within their offices. Moreover, universities have been facilitated by the HEC Pakistan for Digital libraries and online journals.

##### 4.2. Section – II: Analysis and Interpretation of Interviews

To investigate about the external barriers for the ICT usage in the schools and universities, a structured interview was designed for all (i.e., 20 each) principals/chairpersons of the sampled institutions. The interview protocol sheet was consisted of 9 questions, but in this study authors are sharing few remarks of interviewees to manage the length of this paper.

##### 4.2.1. Perception about ICT – Based Education

- Question: How do you perceive the use of ICTs in school education?

Responding this question, all the sampled administrative authorities (100%) considered it to be good to promote educational technologies as the need of time. They expressed that it is important for all educational institutions to meet the international standards of education.

#### 4.2.2. Teachers attitude towards the use of ICTs

- Question: What is the general perception of teachers about ICTs in teaching and learning?

According to the school heads, teachers were not very active regarding implementation and practical usage of ICTs in their teaching. Total 6 out of 18 heads commented negatively about teachers' readiness for new and innovative teaching styles. On the other side, 12 principals rescued teachers' negative attitude because they were not given free hand to teach according their own choice. They reported about teachers as they were interested to learn about ICTs but for their personal usage not for professional point of view. Principals remarked that young and newly appointed teachers were more interested in ICTs-based teaching.

While in universities, chairpersons (73%) disclosed that teachers from social sciences (i.e., Education, Sociology, Philosophy etc.) believed that ICTs were more useful for teachers in pure sciences subjects (i.e., Biology, Chemistry etc.). They said they have no computer-based programs related to their course outlines so that they could use ICTs effectively in their teaching. Total 81% chairpersons reported that their teachers were using computer/laptops and internet in their research work effectively.

#### 4.2.3. Availability of Technical Staff

- Question: Is there enough ICT supervisory/technical staff in your institution?

Principals (80%) reported that ICT coordinators (IT teachers) were responsible to manage the computer systems and laboratories within schools and (60%) said no specific technical staff has yet been appointed. This over-load IT teachers which affects on their teaching and administrative support. Principals suggested that it would be advisable to appoint at least two IT teachers and two technical supporting staff to manage and improve the system. Situation in the universities was opposite, 78% chairpersons reported that they had IT technical staff in computer laboratories which also support teachers during classes when they were required to use multimedia or other devices.'

#### 4.2.4. Main barriers to use ICTs in teaching

- Question: What are the main barriers to use ICTs in your institution?

Principals (60%) mentioned the lack of funds and ICT based infrastructure. One of the Principal argued that: "We are not provided up-to-date equipments or enough funds to purchase IT tools according to the needs" (Principal of School 5). Other most reported barrier (73%) refers to the lack of effective trainings to coordinate and support the adoption of ICT at school level along with the limited ICT skills and interest level of the teachers. The third ICT-related barrier (100%) was the examination based curriculum and lengthy syllabus to cover within short time.

Chairpersons (77%) told that in social sciences, subjects and their contents were less supportive to use ICTs tools during teaching. Moreover, lecture method (83%) was widely being used by the teachers to deliver the content. Therefore, they use multimedia presentations frequently to deliver their lectures. They were not trained to use ICTs in different activities in different teaching techniques.

#### 4.2.5. Suggestions to enhance ICTs based teaching

- Question: Would you like to suggest some ways to enhance ICTs use in education?

There were many suggestions from principals to enhance ICTs use in schools. Mostly (65%) suggested flexibility in curriculum, provision of effective trainings and removal of complicated procedures from government for implementing ICTs. One of the principal reflected that: "Government should provide some effective and implacable training to the heads of schools. We should be granted some authority to bring some positive change in curriculum too" (Principal of School 17). While (35%) were suggesting provision of authority to implement innovative means at school level, competition for quality education and establishment of educational websites at local level.

Chairpersons (100%) recommended more trainings, seminars and conferences to change traditional method of teaching and assessment in universities.

### *4.3. Section – III: Analysis and Interpretation of Questionnaire*

It is already explained that questionnaire consisted of three main parts. Part one for teachers' demographic information, part second was about teachers' self-confidence about the utilization of ICTs in teaching process, specifically and third part consisted on 25 statements, in which all the statements were reflecting barriers against the ICTs utilization in classrooms. Table 1 showed the percentages of part two of the questionnaire. Results in the table clearly reflecting teachers' practices with ICTs which were now-a-days very common and available to everyone and everywhere. Majority of the school teachers (58% - 70%) expressed that they 'never' used projectors, word processor, prepared or delivered presentation through multimedia, spreadsheets and digital cameras for teaching specifically. School teachers, which were falling in the ranges of 'moderate' and 'confident', also disclosed to the authors of this study during data collection that they utilize these devices for their personal work at home. Moreover, they said their schools' infrastructure was not advanced to provide this type of resources to teachers in their classes.

Percentages of university teachers were also not very appreciate-able or distinctive to say that they were advanced than to school teachers. Maximum percentages (51% - 57%) showed that university teachers were confidently using word processor; Power Point based presentations on multimedia and spreadsheets in their teaching activities. Teachers in the same range expressed that they highlight different programs on different TV channels like historical, geographical and others to discuss and explain some topics from their course outlines during lectures.

ICT Tools	School Teachers (% Only)				University Teachers (% Only)			
	Never	Low	Moderate	Confident	Never	Low	Moderate	Confident
Computer	19	53	17	10	03	31	36	30
Internet	43	38	13	06	22	11	29	39
multimedia	63	24	12	02	18	20	23	38
MS Word	60	20	10	10	05	17	27	52
Presentations	63	18	10	09	04	12	27	57
Simulations	70	17	10	02	06	14	28	52
Spreadsheets	66	11	15	08	04	14	31	51
Cell Phones	46	30	11	12	05	11	38	47
Radio – TV	20	51	19	10	02	09	36	53
D-Camera	58	25	14	04	04	17	29	50

Table 1: Overall Teachers' Self-Confidence about the Utilization of ICTs in Classroom

Some intrinsic and extrinsic barriers were drawn after literature review (Kozma 2005, Bingimal 2009, Unal & Ozturk, 2012). After this, 25 statements were finalized and then were asked from sampled teachers in terms of 5 point rating scale. Each category was analyzed separately to reach the conclusion.

#### 4.3.1. Extrinsic Barriers found in the Study

Class duration/time for schools is 30-40 minutes and in universities are 60-120 minutes. Shortage of class duration/time hinders school teachers to utilize ICTs. Results in Table 2 confirmed the above statement by showing that 70% school teachers could not utilize ICTs during teaching because of shortage of class duration/time while university teachers' expressions were not clear regarding this hindrance.

Statement	Responses	School Teachers			University Teachers		
		F	Sum	%	F	Sum	%
Shortage of class duration hinders me to use ICTs.	SA	70	178	70	07	44	34
	A	108			37		
	U	10	10	03	28	28	22
	D	50	65	27	36	58	45
	SD	15			22		
	<b>Total</b>	<b>253</b>	<b>-</b>	<b>100</b>	<b>130</b>	<b>-</b>	<b>100</b>

Table 2: Time Deficiency

Table 3 demonstrated that 70% school teachers were unable to use ICTs because of the inaccessibility to these resources within their institutions while university teachers' responses were not clear to make a decision. This table also verifies the results of Table 1 in which it was already clarified that schools have very few ICTs resources while universities were comparatively rich.

Statement	Responses	School Teachers			University Teachers		
		F	Sum	%	F	Sum	%
Little access to Electronic tools prevents me to use ICTs.	SA	84	177	70	06	56	42
	A	93			50		
	U	15	15	05	34	34	26
	D	45	61	25	27	43	32
	SD	16			16		
	<b>Total</b>	<b>253</b>	<b>-</b>	<b>100</b>	<b>133</b>	<b>-</b>	<b>100</b>

Table 3: ICTs Accessibility

Table 4 below illustrated another limitation regarding the utilization of ICTs in teaching practices. A good majority of school teachers (74%) expressed that they couldn't use ICTs because of little or no technical supporting staff. It is difficult for them to arrange these resources at their own in their classes. While in case of universities, each department has separate computer laboratory and other portable ICT resources and also has technical staff to support in arranging and maintaining the same devices. Therefore, simple majority (56%) rejected the reason of unavailability of technical staff/support.

Statement	Responses	School Teachers			University Teachers		
		F	Sum	%	F	Sum	%
Little technical support at school discourages me to use ICTs in classroom.	SA	90	188	74	05	41	31
	A	98			36		
	U	10	10	03	17	17	13
	D	38	55	22	43	75	56
	SD	17			32		
	<b>Total</b>		<b>253</b>	-	<b>100</b>	<b>133</b>	-

Table 4: Technical Support/Staff

Figure 4 demonstrated that an overwhelming majority of school teachers expressed that syllabus was very lengthy to cover within time (81%, 204) and overall curriculum was not very flexible to support teachers to design ICTs based activities (73%, 184) and if they employ teaching through ICTs then traditional method of assessment prevents them to do so (75%, 191). In case of universities, the difference was found only in one statement in which information regarding the curriculum compatibility with available ICTs was inquired. It was found that 54% (71) were not satisfied with the current situation.

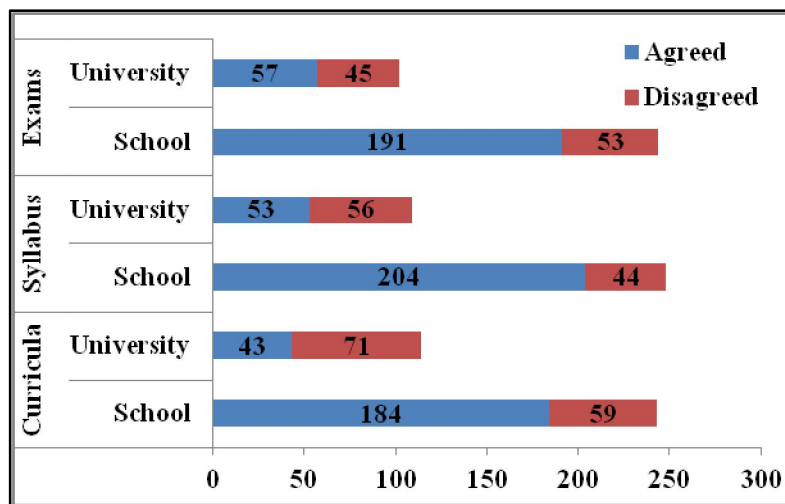


Figure 4: Curriculum & Examination Barriers

People in Pakistan are facing serious shortfall of electricity since last 5-7 years. It was observed by the researchers that few educational institutes have arranged systems of saving electricity, i.e., UPS (Uninterrupted Power Supply System) or generators. Figure 5 illustrated that 84% (212) teachers were unable to use ICT-based tools in teaching due to frequent electricity failure, but 50% (67) university teachers disagreed with the given statement.

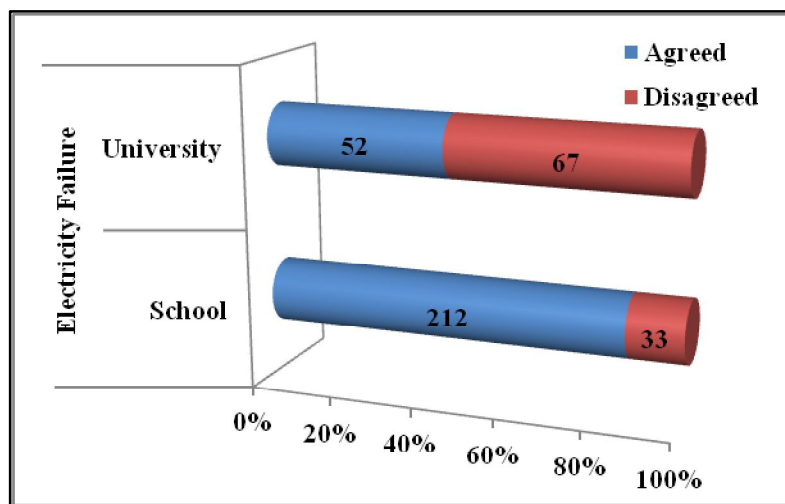


Figure 5: Electricity Problems

It was observed by the author of this study that schools' infrastructure was not supportive to promote ICTs-based education. Table 1 already disclosed the availability of computers and related technologies' availability in schools. Figure 6 confirmed that 73% (185)

school teachers were worried about the situation. And 38% (50) university teachers also explained that the available resources didn't fulfill necessities of the subjects they were teaching at that time.

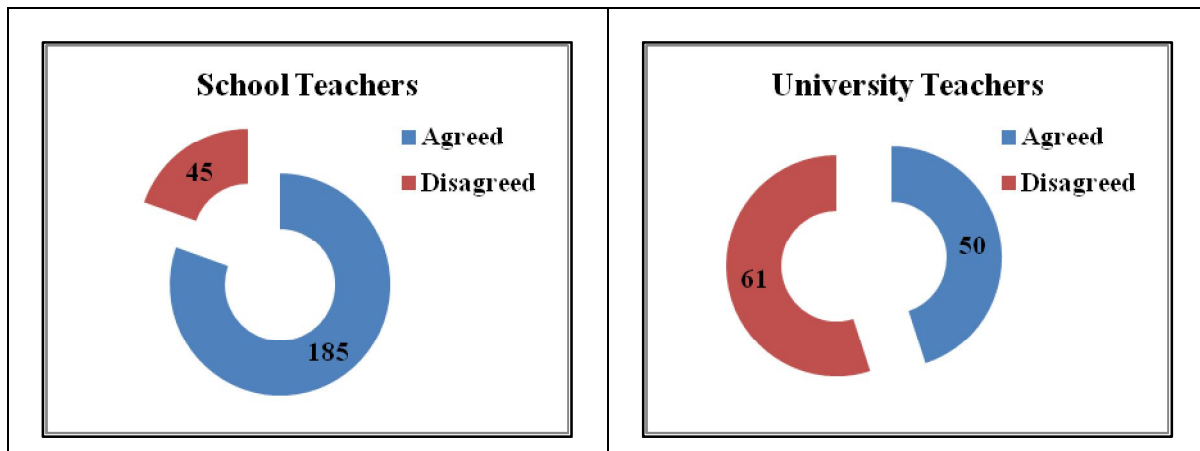


Figure 6: Institute's Infrastructure

Table 5 displayed that 53% school teachers and 35% university teachers also expressed that their authorities were not supportive to them in providing and maintaining ICTs based tools within their institute.

Statement	Responses	School Teachers			University Teachers		
		F	Sum	%	F	Sum	%
Lack of administrative support hinders me to use ICTs.	SA	44	133	53	12	46	35
	A	89			34		
	U	23	23	09	23	23	17
	D	66	97	38	52	64	48
	SD	31			12		
	<b>Total</b>		<b>253</b>	-	<b>100</b>	<b>133</b>	-

Table 5: Administrative Support

Table 6 highlighted that sampled teachers from both types of educational institutions (i.e., schools and universities) rejected the statement and expressed their confidence and readiness in using any type of technological based tool for teaching purposes.

Statement	Responses	School Teachers			University Teachers		
		F	Sum	%	F	Sum	%
I cannot adjust my teaching with ever changing educational technologies.	SA	34	95	38	03	31	23
	A	61			28		
	U	23	23	09	20	20	15
	D	56	135	53	66	82	62
	SD	79			16		
	<b>Total</b>		<b>253</b>	-	<b>100</b>	<b>133</b>	-

Table 6: Adjusting with ever changing Educational Technologies

4.3.2. Intrinsic Barriers Found in the Study

Following table illustrated a complete list of intrinsic barriers that were being presented to teachers and were asked about their opinion based on their experiences.

Statements	School Teachers (n = 253)			University Teachers (n = 133)		
	SA+A (%)	U (%)	SD+D (%)	SA+A (%)	U (%)	SD+D (%)
Time needed to work with ICTs prevents me to use ICTs.	140 (55)	20 (08)	93 (37)	52 (39)	36 (27)	45 (34)
Requirements of qualifications discourage me to use ICTs.	117 (46)	12 (05)	124 (49)	53 (40)	21 (16)	57 (44)
Insufficient information about the effects of ICTs in education discourages me for using ICTs.	152 (60)	13 (05)	88 (35)	54 (41)	21 (16)	56 (43)
Low English language skill is obstacle for me to use ICTs resources.	136 (54)	10 (03)	107 (43)	36 (28)	11 (08)	83 (64)
Colleagues' negative views about ICTs hinder me to use ICTs in classroom.	114 (45)	17 (07)	122 (48)	48 (36)	15 (11)	70 (53)
The fear of getting something wrong prevents me from ICTs application.	103 (41)	18 (07)	<b>132</b> <b>(52)</b>	<b>66</b> <b>(51)</b>	11 (08)	54 (41)
The existing software is not easy to use for class instructions.	79 (31)	88 (35)	86 (34)	40 (30)	27 (20)	66 (50)
I do not know what is expected for teaching with technology.	60 (24)	49 (19)	144 (57)	28 (21)	22 (17)	83 (62)
I can do what the computer can do equally as well	55 (21)	29 (11)	169 (68)	28 (21)	20 (15)	84 (64)

Table 7: Intrinsic Barriers

From Table 7, it was depicted that teachers' responses were not very supportive to decide which intrinsic factors were creating hurdles in using ICT tools professionally. Very simple majority of school teachers disclosed that they need more time (55%, 140) to prepare themselves for using ICTs; moreover, low English language skills (54%, 136) and insufficient information (60%, 152) regarding the use of ICTs in teaching process prevents them to use the same. While simple majority of university teachers refused regarding the English language skill (64%, 83), colleagues negative remarks (53%, 70), and unfamiliarity with ICTs based teaching outcome (62%, 83). Both categories of sampled teachers (school=169, 68% and university=84, 64%) accepted that computers' based teaching performance is far much better than their own. But school teachers rejected about the fear of doing something wrong (52%, 132) and university teachers (51%, 66) accepted the same.

## 5. Conclusion

It was concluded from the above mentioned results that:

Sampled elementary schools don't have proper setup to promote ICTs based teaching learning trends. Administratively, authorities were found to be supportive and they showed their positive attitude towards ICTs based teaching and learning processes and willingness to bring improvement in the existing infrastructure as they will have funds for the said purpose. Schools teachers use word processor, multimedia – based presentations, spread sheets, cameras, printers, scanners, cellular phones and other ICT tools for their personal usage but not for their teaching purposes. They argued that their schools do not have and/or have little access to these devices and software in their schools. Extrinsic barriers encountered during the analysis were: 30-40 mints class duration, limited ICTs tools accessibility, shortage or non-availability of technical staff, older curriculum and paper-pencil based examinations systems, shortage in electricity problems and school infrastructure. While intrinsic barriers included: additional time to work with ICTs tools in the classrooms, insufficient information regarding the effects of ICTs in education, and English language skills.

In case of sampled universities; teachers were selected from the departments of social sciences, only. And all of these departments were having fully equipped computer laboratories along with the recruited technical staff. Administratively, not only the chairpersons and higher authorities of their universities, but even the Higher Education Commission (HEC) Pakistan were supporting to establish and promote the ICTs based teaching and learning processes. Extrinsic barriers for sampled university teachers were: un-awareness or few practices with different teaching and assessment techniques and little support of technical staff in maintaining the computer laboratories. And fear of using ICTs tools within the classrooms was the only intrinsic barrier found from university teachers.

It is recommended that schools should be provided more computer laboratories, technical staff, improvement in existing curriculum and assessment system. But teachers – either teaching in schools or universities – must be provided trainings through workshops or conferences to prepare them to use ICTs effectively. Moreover, other research studies with different tools and sample are required to conduct for social sciences teachers in universities to find barriers of using ICTs in detail in the teaching process.



## 6. References

- i. Becta ICT Research (2004). A review of the research literature on barriers to the uptake of ICT by teachers. Retrieved from <http://www.becta.org.uk>
- ii. Belland, B. (2009). Using the theory of habitué to move beyond the study of barriers to technology integration. *Computer & Education*, 52(2), 353-364.
- iii. Cuban, L. (2002). *Oversold and underused: computers in the classroom*. Cambridge MA: Harvard University Press.
- iv. Drent, M. and Meelissen, M. (2008). Which factors obstruct or stimulate teacher educators to use ICT innovatively? *Computers & Education*, 5(1), 187-199.
- v. DrCrcco-Bloom, B. and Crabtree, B. F. (2006). The qualitative research interview. DOI:10.1111/j.1365-2929.2006.02418.x
- vi. Goktas, Y., Yildirim, S. and Yildirim, Z. (2009). Main barriers and possible enablers of ICTs integration into pre-service teacher education programs. *Educational Technology & Society*, 12(1), 193-204.
- vii. Higher Education Commission (HEC) Pakistan (2009). HEC recognized universities and degree awarding institutions. Retrieved from <http://hec.gov.pk/OurInstitutes/Pages/Default.aspx>
- viii. Ihmeideh, F. M. (2009). Barriers to the use of Jordanian Pre-School setting. *Technology, Pedagogy and Education*, 18(3), 325-341.
- ix. Jamil, M., Tariq, R. H. and Shami, P. A. (2012). Computer-based VS paper-based examinations: perceptions of university teachers. *TOJET: The Turkish Online Journal of Educational Technology*, 11(4), 371-381.
- x. Jamil, M. and Shah, J. H. (2011). Technology: Its potential effects on teaching in higher education. *New Horizons in Education*, 59(1), 38-51.
- xi. Reis, H. T. and Judd, C. M. (eds.) (2000). *Handbook of research methods in social and personality psychology*. Cambridge, UK: Cambridge University Press.
- xii. Salehi, H. and Salehi, Z. (2012). Challenges for using ICT in Education: teachers' insight. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 2(1), 40-43.
- xiii. Unal, S., and Ozturk, I. H. (2012). Barriers to ITC integration into teachers' classroom practices: Lessons from a case study on social studies teachers in Turkey. DOI: 10.5829/idosi.wasj.2012.18.07.1243
- xiv. Wee, M. C. and Abu Baker, Z. (2006). Obstacles towards the use of ICT tools in teaching and learning of information systems in Malaysian Universities. *The International Arab Journal of Information Technology*, 3(3), 203-209.