Teachers Readiness to Use of ICT in Classroomsand Academic Performance

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Abstract- Information and communication technologies (ICTs) is the use ofmultiple and digital technology resources and tools applied for storing, creating, communicating and managing information. Current era is an era of online learning and day by day the infrastructure barriers of time and place are being substituted by digital world where physical access to education. The study is an intention to explore readiness of teachers in using ICT inclassroom at elementary level. The sample comprised of three hundred andsixteen teachers randomly selected from secondary schools. An instrument,ICT use and Performance Survey [ICTPS]. The results revealed that both genders have no clear distinction in the motivation of using information technology. Experience of teachershave significant impact on the challenges when they use informationtechnology. It is recommended to empower the teachers with ICT for betterperformance and integration with modern era.

Keywords: ICT, Students' achievement, Integration with digital world

I. INTRODUCTION

The world has entered in the age of digital skills and 21st century teaching is basically the use of digital skills and technology in classrooms. The administration of all sizes and types, comprisingschools, have accepted that use of computers during working environments is an important source and an extraordinary challenge that supports people to acquire creative and critical minds in getting opportunities for rapid information, technology and knowledge. Computer expertise has influenced scholars' learning new experiences for entire world (Cuban, 2001).

In the past, the intention to integrate computer technology in classes was more expensive and teachers and institutions use cheaper and accessible resources for information sharing and technological communication problems were common due to lack of expertise and resources. As a result, the ICT services to students were away and had a dream to integrate computer technology for students (Mumtaz, 2000). Almakani and Williams (2012)revealed that many factors affect level of teachers in using ICT in classroomslike lack of skill and self-confidence, administrator attitude, time constraints,effective training, technical barriers and intrinsic motivation strategy. For example, the important elements of teaching and learning which are content and pedagogy must becombined when technology is used in a lesson.

Pakistan has articulated the vast education sector to implement plan for technology that will deliverquality educations tools, assessments and cooperative learning environment. To achieve those plans, the learning barriers should be identified to overcome the situation. Many barriers are still existing in real practice in theinstitutions. Information and communication technology (ICT) has unlocked wider opportunities for teachers to use technology-supported tools in the learning and teaching in improving the students' performance (Jonassen,1995). Using of computer-assisted technology in classrooms will sure provide teachers opportunities and resources in completing instructional tasks with great effort and purposeful

determination for pupils. The use of ICT has become a part and parcel in the subjects of mathematics and sciences.

The studies of Stockdill and Moreshouse (1992) explored multiple technological reflections to effect ICT use and its integration with learning and teaching. ICT use has made the society a dynamic living place. It has effected almost every field of life with more innovative and speedy way. One cannot find any filed in the world that is now working without the use of ICT. It has broadened the mind and skills for workers, teachers, students and every person in the society. These changes have been clearly observed in the latest classrooms and institutions. It is the blessing for students because ICT has changed the traditional teaching learning methods with unique and modern technology. The teachers and students find ample opportunities inadapting learning and teaching for personal needs and desires. Society is more concerned with the use of modern technological inventions.

The ICT integration by the teachers in teaching and learning is based on resources in hand by the institutions and learning organizations (Balanskat, Blamire, & Kefalla, 2007; Chen, 2008; Clausen, 2007; Lim & Chai, 2008; Tondeur, van Braak, & Valcke, 2008). ICT has provided many opportunities for teachers in supported learning material for teaching students in classrooms and improved the achievements of the scholars. Itis observed that teachers are not ready to use ICT effectively in classrooms.They are not making its use effectively in learning and teaching process. So, focus of the study is to find the causes due to which our teachers are not able to use ICT in classroom effectively and how the teachers can use ICT inclassrooms effectively. Hawkins (2004) and Inwent (2004), current education reforms stress on the quality and equal access of educational resources that emphasizes the significant initiative and innovation in the field of education while using ICT with better services. In Pakistan, thegovt. has introduced computers' use in elementary and secondary schools in its current educational policy (NEP, 2009).

Pakistani teachers and students need more computer skills for educated workers with ample use of ICT. We need an ICT literate society to compete the rest of the world. This objective can only be achieved if we provide computer-based education, reserve incentives for students and teachers and constant training. All education sectors understand the benefits of investing in ICT and in theinfrastructure required for introducing ICT in education.

Almekhlafi and Almeqdadi (2010) explained that un-supportive management, missing technical skills and un-availability of computer labs restrict the use of ICT in classes.There is a need forgovernment to partner with the private sector for resource mobilization tofund the use of ICT in education (Mndzebele, 2013). In institutions, the use of ICT impacts the learning and teaching process (Honey et al., 2000; McCombs, 2000). The institutional reforms need better and competent leadership that may improve the learning and teaching with purposeful activity (Berg & Sleegers, 1996). The use of technology becomes more productive in achieving teachers' expectations toward technology. The second is about the Remote experience: Zhao and Cziko (2001) revealed that observation may increase teachers' beliefs about classroom approaches. The third is about the Socio-cultural influence: Zhao and Frank (2003) explained that use of computers may change teachers' beliefs in socialized network after the integration of technology. An innovation may not have adopted properly if it contradicts the current values, educational beliefs, and teachers and learners. The vision proposed in NEP (2009) Pakistan evidently stresses on faculty training in pedagogical, communication and ICT skills is required at all levels. It acknowledges that private sector institutions have making efforts in bridging the gaps in education with the help of teachers' in-service and pre-service ICT training.

Govt. spends very low budget on education. On the other hand, private institutions invest most of the budget in facilitating students regarding ICT use. Now a day, the computer is gaining a vital popularity instead of making it visible in showcases. Science subjects need more attention of students as compared with subjects like Islamiat, Pakistan Studies, Urdu (Munir & Khan, 2015). The developing nations have many problems of integration of ICT in education. Pakistan being a developing country is facing many complications in all sectors especially in education as it is far behind to fulfill the dream of developed nations. The literacy level in ICT is near zero. ICT integration policy is missing in learning and teaching. The rest of the world uses modern tools and techniques of teaching and learning but unfortunately here situation is not very good.

Traditional methods which are almost obsolete in developed world are still being practiced. Most of the schools in rural areas of Pakistan are facing lackof physical and technical infrastructure and facilities which are supportive toICTs. Poor school buildings, limited supply of electricity and poortelecommunication links are major problems faced by schools. Capacity building at different areas like professional development of teachers, technical support and content development are real challenges faced by education sector of Pakistan (Hassan & Sajid, 2013). Teacher education program in Pakistan went through a rigorous review process that started in 2004 and concluded in 2009.

The review about to integrate ICT in education was initiated with the help of financial assistance under United States Agency, UNESCO, Pakistan. The board formed to evaluate teachers' education studied curriculum, teaching practice used by teachers and resources available for teachers' education institutes (Jamil, 2004; UNESCO, 2003). The review resulted in change in the teachers' curriculum about education, training of teacher educators at the national level and providing resources to teacher educational departments and institutes. The review committee suggested National Professional Standards for Teachers in Pakistan, a guide line for teacher educators teaching pre-service teachers' education courses at the college or university level.

The Standard 7 focuses on ICT and suggests to teacher educators to equip pre-service teachers with teaching skills used for communication technologies in software and hardware (Policy and Planning Wing, 2009). The Standard 7 presumes that pre-service teachers' training will assimilate ICT in their classroom instruction practices during their school teaching experience, which is an essential component of the Bachelor Education (B.Ed.) program. The fact that use of ICT has vital role in provide chances for students to participate better in education process (Douglas, 2001). The relationship between students' achievement and use of ICT is positive. Aristovnik (2012) investigated that ICT had an impact on academic performance with great possibility of efficient and better research outcomes. The integration of (ICT) in educational institutions will bring better change and will able to transforms the teaching and learning process with better understanding of knowledge and expertise in academic environment, self-directed learning and with productive education (Volman & Eck, 2001).

Successful incorporation of ICT in education process depends on the training of teachers at all levels. The uses of ICT in classrooms are very crucial in providing multiple chances for scholars to learn and cooperate in an information era. Less training facilities and expertise are the prominent indicators of incompetence of teachers and students while using ICT in the classes. Hence, the current study is an intention to explore educators' willingness in using ICT in classroom at elementary level.

II.   OBJECTIVES OF THE STUDY

The objectives were as under:
1.   To analyze the teachers' motivation when theyuse ICTs in secondary school classrooms.
2.   To explore the teachers' attitudewhen they use ICTs in secondary school classrooms.
3.   To investigate theteachers' competence in application of ICT in secondary school classrooms. 6.To trace out effect of teachers' experiences on challenges in using ofinformation technology.

Hypotheses of the Study
Following null hypotheses were designed for the study:
Ho1: There is no distinction in male and femaleteachers' motivation regarding the use of information technology.
Ho2:There is no distinction in male and female teachers'regarding the challenges of using information technology.
Ho3: There is no clear distinction in male and female teachers' competence regarding the application ofinformation technology.
Ho4: There is no noteworthy impact of teachers'experience on the challenges in using of information technology.

Population and Sample

The current study was carried out in District Toba Tek Singh(TTS), all secondary school teachers were the population of study. Thesample comprised of three hundred and sixteen teachers randomly selectedfrom secondary schools. Both group of teachers have equal participation in the study. In this way one hundred and fifty-eight teachers were selected ineach category. There were 42.2% Masters level respondents. BS levelrespondents were 4.7% and BSc level respondents were 26.6%. Therespondents belonged to MSc level were 14.9% and that of MPhil level were 6.6%.

Research Design

The aim of the study is to examine the level ofinformation and attitude about ICT use by the secondaryschool teachers. The study was descriptive and completed with the help of survey technique for collection of data from the respondents.

Instrument

The data werecollected with the help of an instrument, ICT use and Performance Survey [ICTPS]. The instrument was validated by the expert of educationists. Thereliability was computed from the sample of 40 teachers not included in thefinal sample. The Cronbach Alpha reliability was calculated as .950 for fortyitems which was excellent for conducting the educational research. Theinstrument was then finalized for data collection. The questionnaires weredelivered to teachers using both postal mail and personal survey by theresearchers. The teachers filled the questionnaires and returned toresearchers. The results of respective classes of the teachers was collected asthe performance of teachers

Data Analysis

The collection process of data is useless unless a proper statistical process is not applied. It should bear presentable shape to reach the final conclusion (Khan, 2007). Data analysis is important to present in comprehensible form. The data were analysed by SPSS. Quantitative data was analyzed through various statistical techniques like mean, sd, ANOVA, and t-test.

III.   RESULTS

Ho1: There is no clear distinction in male and female teachers' motivation regarding the use of information technology.

Table 1

Comparison between Male and Female Teachers' Motivation in using the Information Technology

Group	N	M	SD	t	p.
Male	158	3.92	.89	.039	.969
Female	158	3.92	1.13		

According to table 1, t-test was applied to explore the difference between male and female teachers' motivation regarding the use of information technology. It is evident that there exists no clear distinction in the male and female teachers' motivation regarding the use of information technology. The mean achievement score of male teachers (M =3.92, SD = .89) and female teachers (M = 3.92, SD = 1.13, t (314), .039, p>0.05). The mean achievement score revealed that the both genders have no clear distinction in the motivation of using information technology. So, the null hypothesis was accepted.

Ho2: There is no clear distinction in male and female teachers regarding the challenges of using information technology.

Table 2

Comparison between Male and Female Teachers regarding the Challenges of Information Technology

Group	N	M	SD	t	p.
Male	158	3.76	.81	-.212	.832
Female	158	3.78	.84		

According to table 2, t-test was applied to explore the difference between male and female teachers' challenges regarding the use of information technology. It is evident that there exists no clear distinction in the male and female teachers' challenges regarding the use of information technology. The mean achievement score of male teachers (M =3.76, SD = .81) and female teachers (M = 3.78, SD = .84, t (314), -.212, p>0.05). The mean achievement score revealed that the both genders have no clear distinction in the motivation of using information technology. The stated hypothesis was accepted.

Ho3: There is no clear distinction in male and female teachers'competence regarding the application of information technology.

Table 3

Comparison between Male and Female Teachers regarding the Application of Information Technology

Group	N	M	SD	t	p.
Male	158	3.07	.82	3.108	.002**
Female	158	2.78	.84		

**p<0.01

According to table 5, t-test was applied to investigate the difference between male and female teachers regarding the application of using information technology. It is evident that there exists a clear distinction in male and female teachers with respect to the application of using information technology. The mean achievement score of male teachers (M = 3.07, SD = .82) and female teachers (M = 2.78, SD = .84, t (314), 3.108, p<0.01). The mean achievement score revealed that the male teachers were found to be more competent in applying information technology than that of female teachers.

Ho4: There is no significant impact of teachers' experience on the challenges in using of information technology.

Table 4

Impact of Teachers' Experience towards Challenges of the Information Technology

	SS	df	Mean S.	F	p.
Between Groups	59.104	2	29.552	59.304	.000**
Within Groups	155.974	313	.498		
Total	215.079	315			

**p<0.01

According to table 6, ANOVA was performed to explore the significant impact of teachers' experience on the challenges when they use information technology. Results F (2, 29.552) = 59.304, p<0.01 indicate that experience of teachers have significant impact on the challenges when they use information technology.

The current study explored the teachers' opinions about the use of ICT in classrooms. It is evident that there exists no clear distinction in the male and female teachers' motivation regarding the use of information technology. The mean achievement score revealed that the both genders have no clear distinction in the motivation of using information technology.

It is evident that there exists no clear distinction in the male and female teachers' challenges regarding the use of information technology. The mean achievement score revealed that the both genders have no clear distinction in the motivation of using information technology.According to Bauer and Kenton (2005), teachers with minor computer skills did not use ICT regularly in classes because they need extra time for lecture preparation. Lack of technical skills in software and hardwareleads to barriers of ICT use in classes. Almekhlafi and Almeqdadi (2010) explained that un-supportive management, missing technical skills and un-availability of computer labsrestrict the use of ICT in classes. Unfortunately, this situation is mostly observed in Pakistany Public sector institutions where basis life requirements are still missing. What about the question of ICT use?

The study of Tondeur, Van Braak, and Valcke (2006) investigated teachers' view point about using ICT based on their attitude and level of experience and information.It is evident that there exists a clear distinction in male and female teachers with respect to the application of using information technology. The mean achievement score revealed that the male teachers were found to be more competent in applying information technology than that of female teachers. Many studies have highlighted the use of ICT in classrooms. As Morley (2010) revealed nosubstantial variance while using ICT in classrooms. He explored that male teachers had lowaffinityin using computers in classrooms than female teachers. Alazam, Bakar, Hamzah, and Asmiran (2012b) explored the same findingsas gender had some impact on teachers' readiness in using ICT. The studies of Elsaadani (2012) did notexploreanycorrelation between genderof teachers' attitude in using ICT in classrooms for teaching.It was indicated that experience of teachers have significant impact on the challenges when they use information technology.According to Chandra and Lloyed (2008), ICT enhances the students' achievement when teachers apply excessive use of technology. Youssef and Dhamani (2008) explored that ICT had an impact on teaching and learning process when empowered to students and teachers with ICT resources. There is a positive correlation between ICT use and pupils' achievement. Aristovnik (2012) investigated that ICT had an impact on academic performance with great possibility of efficient and better research outcomes.

V. RECOMMENDATIONSFOR FURTHER STUDY

The institutions should have ample facilities of using ICT in classes. ICT in educational institutions should be introduced as an elected subject like other subjects. ICT labs should be designed and furnished with modern ICT resources. The teachers should have opportunities for training in ICT use. Teachers' ICTtraining should be based onICT integration syllabus and curriculum. The access and use of internet should be compulsory for educational institutions.

REFERENCES

1. Alazam, A. O., Bakar, A. R., Hamzah, R., & Asmiran, S. (2012a). Teachers' ICT skills and ICT integration in the classroom: The case of vocational and technical teachers in Malaysia. *Creative Education, 3*, 70-76.
2. Alazam, A. O., Bakar, A. R., Hamzah, R., & Asmiran, S. (2012b). Effects of Demographic Characteristics, Educational Background, and Supporting Factors on ICT Readiness of Technical and Vocational Teachers in Malaysia. *International Education Studies, 5*(6),
3. Almakani, G., & Williams, N. (2012). A strategy to improve the usage of ICT in the Kingdom of Saudi Arabia primary school. *International Journal of Advanced Computer Science and Applications, 3*(10), 42-49.
4. Aristovnik, A. (2012). The impact of ICT on educational performance and its efficiency in selected EU and OECD countries: A non-parametric analysis. *The Turkish Online Journal of Educational Technology, 3*(11), 144- 152.

5. Abbas, F., Farid, M. F., Iqbal, A. & Parveen, S. (2020) Impact of using newspapers reading on English reading proficiency: A study of Pakistani university students. *International Journal of Innovation, Creativity and Change. 14* (10), 223-232.
6. Abbas, F., Jalil, M. K. & Rehman, Z. (2019). The Status of Punjabi language in the province of Punjab, Pakistan. *The Dialogue, 14* (2), 255-264.
7. Balanskat, A., Blamire, R., & Kafal, S. (2007). A review of studies of ICT impact on schools in Europe. European Schoolnet.
8. Bauer, J., & Kenton, J. (2005). Toward technology integration in the schools: Why It Isn't Happening. *Journal of Technology and Teacher Education, 13*(4), 519-546.
9. Berg, R., van den, & Sleegers, P. (1996b). The innovative capacity of schools in secondary education: A qualitative study. *International Journal of Qualitative Studies in Education,9*(2), 201-23.
10. Chen, C. H. (2008). Why do teachers not practice what they believe regarding technology integration? *The Journal of Educational Research, 102*(1), 65-75.
11. Chohan, M. N., Saleem, M., Abbas, F. (2018). CALL as a tool in teaching EFL in Pakistani religious institutes (Madaris): A survey of issues and challenges. *Al Qalam, 23* (1), 355-368.
12. Clausen, J. M. (2007). Beginning teachers' technology use: First-year teacher development and the institutional context's effect on new teachers' instructional technology use with students. *Journal of Research on Technology in Education, 39*(3), 245–261.
    a.computer-mediated classroom lessons. *British Journal of Educational Technology, 39*(5), 807–828.
13. Cuban, L. (2001). *Oversold & underused: Computers in the classroom.* Cambridge and London: Harvard University Press.
14. Earle, R. S. (2002) The integration of instructional technology into public education: Promises and Challenges. *ET Magazine, 42*(1), 5-13.
15. Elsaadani, M. (2012). Exploration of teaching staff and students' preferences of information and communication technologies in private and academic lives. *International Journal of Computer Science Issues, 9*(2), 396-402.
16. Ertmer, P. A. (2005). Teacher pedagogical beliefs: The final frontier in our quest for technology integration? *Educational Technology Research and Development, 53*(4), 25-39.
17. Fullan, M. (1993). *Change Forces Probing the Depths of Educational Reform.* The Falmer Press, Bristol, PA.
18. Hallinger, P., & Heck, R. H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1995. *School Effectiveness and School Improvement, 9*(2), 157-179.
19. Hasan, T., & Sajid, A. R. (2013). ICTs in learning: Problems faced by Pakistan. *Journal of Research and Reflections in Education, 7*(1), 52 -64.
20. Hawkins, R. J. (2004). *Ten lessons for ICT and Education in the Developing World.* World.
21. Honey, M., Culp, K. M., & Carrigg, F. (2000). Perspectives on technology and education research: Lessons from the past and present. *Journal of Educational Computing Research, 23*(1), 5-14.
22. Inwent. (2004). eLearning development and implementation: Course information and documentation. Bonn: Inwent
23. Iqbal, A. Ali, M.S., Abbas, F Shah, M.A.H. & Anjum, S. (2020). A Study of Work-Family Conflict among Elementary School Teachers. *International Journal of Innovation, Creativity and Change. 14* (10), 198-209.
24. Jamil, B. R. (2004). *From teacher education to professional education development in Pakistan: A (Draft) Position Paper.* Presented at the National Conference on Teacher Education, Islamabad, Pakistan.
25. Jonassen, D. H. (1995). Supporting Communities of Learners with Technology: A Vision for Integrating Technology with Learning in Schools. *Educational Technology, 35*(4), 60-63.
26. Khan, J. A. (2007). *Research Methodology.* APH Publishing Corporation, New Delhi.
27. Lai, K., & Pratt K. (2004). Information and Communication Technology(ICT) in Secondary Schools: the role of the computer coordinator. *British journal of Educational Technology, 35*(4), 461-475.
28. Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly, 30*(4), 498-518.
29. Lim, C. P., & Chai, C. S. (2008). Teachers' pedagogical beliefs and their planning and conduct of
30. McCombs, B. L. (2000). Assessing the role of educational technology in the teaching and learning process: A learner-centered perspective. *Paper presented at the Secretary's Conference on Educational Technology*, 11-12 September, Alexandria, VA.

31. Mndzebele, N. (2013). Teachers readiness in using ICT in the classroom: the case of a developing country. *International Journal of Information and Education Technology, 3*(4), 409-412.
32. Morley, G. (2010). Gender, age or teaching experience: Are they issues for primary teachers with ICT? *International Journal of Information and Operations Management Education, 3*(4), 349-355.
33. Mumtaz, S. (2000). Factors affecting teachers' use of Information and Communications Technology: A review of the literature. *Journal of Information Technology for Teacher Education, 9*(3), 319-341.
34. Munir, S. S., & Khan, I. (2015). Practices and Integration of ICT at Private Higher Secondary Level in Pakistan. *International Journal on New Trends in Education and Their Implications, 6*(2), 93-104.
35. NEP (2009). National Education Policy (2009) Govt. of Pakistan.
36. Schunk, D. H. (2000). *Learning theories: An educational perspective* (3rd. ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
37. Senge, P. (1990). The fifth discipline. New York Doubleday.
38. Sherry, L., & Gibson, D. (2002). The path to teacher leadership in educational technology. *Contemporary issues in technology and teacher education, 2*(2),178-203.
39. Stockdill, S. H., & Morehouse, D. L. (1992). Critical factors in the successful adoption of technology: A checklist based on the findings. *Educational Technology, 32*(1), 57-58.
40. Tinio, Victoria L (2002). ICT in education. Available at: http://www.apdip.net/publications /iespprimers/eprimer-edu.pdf.
41. Tondeur, J., Van Braak, J., & Valcke, M. (2006). Curricula and use of ICT in education. Two Worlds apart. *British journal of Educational Technology,* 1-15.
42. UNESCO. (2003). *ICT for education in Asia-pacific. ICT policy and Strategy*. UNESCO Asia-Pacific Regional Bureau for Education, Bangkok, Thailand.
43. Volman, M., & Eck, E. (2001).Gender Equity and Information Technology in Education: The Second Decade. *Review of Educational Research, 71*(4), 613-634.
44. Youssef, A., & Dhamani, M. (2008). The impact of ICT on student performance in higher education: Direct effects, indirect effects and organizational change. *Magazine of University and Society of Knowledge, 5*(1), 45-56.
45. Zhao, Y., & Cziko, G. A. (2001). Teacher adoption of technology: A perceptual control theory perspective. *Journal of Technology and Teacher Education, 9*(1), 5-30.
46. Zhao, Y., & Frank, K. A. (2003). Factors affecting technology use in schools: An ecological perspective. *American Educational Research Journal, 40*, 807-840.
47. Zhao, Y., Tan, H. S., & Mishra, P. (2001). Teaching and learning: Whose computer is it? *Journal of Adolescent & Adult Literacy,* 44(4), 348-354.