Use of ICT in teaching, professional training, management and personal use: Teachers' Perspective

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Abstract

Pakistan's Government and private educational establishments have been trying to integrate Information Communications Technology (ICT) in education since last decade. In view of ICT on-going integration project led by the local Government and private educational institutions, the present convergent parallel design of mix method examines teachers' perceptions about the use of ICT tools and their practices in four important areas namely teaching, management, training and personal use. The research participants were teacher educators from one of the largest women university of the region and one mixed and oldest university of the country. A total of 50 teachers,

20 from Education Department of Women University and 30 from Education institute of the mixed oldest university in Punjab were chosen purposively. The participants comprised of 25 male and 25 female members. Further 10 teachers from sample were randomly selected for conducting interview. Data were collected through using survey and interview technique. Descriptive statistics were used to analyze the quantitative data. While thematic analysis was carried out for interviews. Both results were merged under specific categories based on research questions. It was revealed that use of ICT is seen favorably among the participants; however they highlighted lack of accessibility to ICT tools as the biggest barrier in the wide usage of the tools. A variety of ICT tools were used by female teachers for teaching prospective teachers and management while male teacher educators use ICT tools for professional training and do more personal use of it. It was noted that study participants used ICT tools to accompaniment their current teaching methods, however their usage had not resulted in transformation of their pedagogies. This trend was especially visible in the male teachers as they used ICT but sustained their established practices.

Keywords: Teachers' perceptions; ICT access; ICT competence, ICT use, ICT tools mix method convergent design

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Introduction

This article reports on the mix method study conducted to examines teachers' perceptions and practices of ICT tools in four key areas namely teaching, management, training and personal use .Innovations permit ICT to shape and maintain communities for work, play and learning in ways that were inconceivable few years ago. Ertmer (2005) Juang (2008), Friedman (2009), Steel (2009) and Ismail (2010) reported an increasing rate of amalgamation of ICT in the process of effective knowledge transfer and learning in majority of world's educational institutes. Pelgrum (2001), Kozma & Andersonin 2002, Goodison in 2003; Kangro & Kangro, 2004 Ruthven, & Brindley, 2005, along with many others testified the important role of Information Communications Technology (ICT) in promoting quality education.

Majority of developing and developed countries have spent a huge sum of resources for providing easy access of ICT tools in educational institutes. As in other countries, Pakistan has also initiated efforts to promote ICT integration in education at various levels, which are carried out by the Government, particularly in the province of Punjab, Pakistan. The National educational policy 2009 of Pakistan indicates government's focus on ICT. It stated that Modern information and communications technologies (ICT) are key to enhancing efficiency, efficacy and impact of programs of development in the higher education sector (NEP, 2009). This focus is in line with MDGs (2000) and SDGs (2015) both of which have been indicated the extended role of ICT in education. Establishing computer labs in institutes, awarding merit laptops to students and teachers, providing ICT training and developing ICT based courses for teachers are few steps taken by the Government in recent years for ICT integration in education.

However, along with these initiatives, incorporation of ICT in education requires effective role of teachers considering them as one of the most important stakeholder in delivery of quality education. The teachers has been considered as to play key role in effective implementation of the use of ICTs in the educational system and believed that they have great potential to pass on beliefs and values to students.

Fullan (2015) emphasizes on the changing mindset as a key factor to any educational change struggle. Teachers' effective use of ICT depends on internal and external, individual and organizational factors. Along with knowledge and competence, individual attitudes and perceptions regarding ICT are also important. It is believed that the positive attitude of teachers towards ICT leads to its effective implementation. Teachers' perception about ICT is

the reflection of their attitudes and feelings affecting their classroom practice. Cavas (2009) pointed out that teachers' use of technology in instruction is enhanced by their personal triumph of technological use. They pointed out that the variables like cost and access may become a barrier for ICT integration in schools. Assuming these conclusions as true, the present study was designed to look at the teachers' use and perceptions about ICT tools for teaching, professional development, administration and personal use.

Research conducted in professional national and international agencies at different level of education revealed that teachers have a positive and encouraging attitude towards the use of ICT. However in Pakistani education system, these instructional technologies (ICT) do not have a long history. In national context, it has become important for successful integration of ICTs in education to understand the predispositions and stereotypes that teachers may hold about the use of ICTs and the factors that act as facilitators to teachers' ICT usage or becomes barrier in adopting technology.

The present mix method convergent design study explored the teachers' perspective about use of ICT tools in teaching, professional development, administration and personal use. To what extent they practice ICTs and in which area? How they perceive ICT tools in education? What the key enablers and disablers are for teaches to use ICT in class rooms effectively; I. e to promote ICT based learning theory. Assuming teachers as the main stakeholders, the study was based on the conclusions of Cavas (2009) that successful personal use of ICT by teachers act as a motivator for the use of ICT in other areas like instruction, training and administration etc.

Research Questions

- How do and to what extent Pakistani teacher educators perceive and use ICT for teaching and learning?
- How do and to what extent Pakistani teacher educators perceive and use ICT for professional development?
- How do and to what extent Pakistani teacher educators perceive and use ICT for administrative purposes?
- How do and to what extent Pakistani teacher educators perceive and use ICT for their personal purposes?
- Is Teachers' personal use of ICTs encourages their technology use for teaching, professional development and management?
- Significance of the case study

The study has significant prospective benefits for the stakeholders in education. It provides information about teachers' inclination and tendency to use ICT. Furthermore, teachers' personal experiences of using ICT contributing towards understanding of insight regarding appropriate amalgamation of ICT in instruction i.e teaching and their behaviors. Teachers' personal experiences help in need analysis of teachers' training for accurate technology integration in the class rooms practices. In this context, the concerned stakeholders and institutes can develop and modify their relevant programs. In addition, the findings of the present study aim to provide directions for future research in Pakistan and will add to the current knowledge, decision-making and scheduling for future projects.

Method

For in-depth analysis, a mix method approach and basic convergent design was used in the present research to investigate the teachers' perceptions and practices, in Pakistan where process of ICT integration in education is underway. Mix method balances the strengths and weaknesses of both quantitative and qualitative research (Creswell & Plano Clark 2007).

Sampling

Teacher educators from IOE, of Women University and IER of mixed oldest university, Lahore were the target population of the study. A total of 50 teachers, 20 from IOE and 30 from IER were purposively selected. 25 teacher educators were male and 25 were female. For interview, 10 teacher educators from them were randomly selected. Five from each university were interviewed. Among them 6 were female and 4 were male. The age range of 50 teacher educators was from 27 to 52 and job experiences from 2 to 22 years. Ten teachers of both institutes had been trained in ICT, duration of training ranging between fifteen days to one year from their schools, colleges and other private institutes. However, the remaining forty teacher educators had not had any type of computer training.

Data collection

A structured questionnaire and open ended interview protocol was used to collect data. Both instruments consisted of questionnaire based on similar categories. The questionnaire had focused questions while during interview the questions were purposively made to unlock and unravel comprehensive and in-depth views from teacher educators. The questionnaire had four sections focusing on specific areas. As the section 1 included item related to teachers' accessibility to

computers place, their ICT competence, and their personal use of ICT. The section II consisted of statements related to the use of ICT in teaching. The section 3 paid attention to the use of ICT in administration while the section 4 was about ICT use in Management. Both data collecting tools, questionnaire and interview protocol were developed by the researchers themselves after a vast literature review. The Questionnaire was pilot tested for reliability and validity. Reliability was found to be 0.82 while experts in the area found it to be valid.

Data analysis

Quantitative and qualitative data were analyzed by appropriate methods. Data from questionnaire were analyzed in the form of percentages while data from interviews were recorded, transcribed and then coded into themes accordingly. Results were merged under specific themes and then interpreted.

Results and Discussion

Results were discussed under themes. Quantitative findings were supplemented with qualitative themes. It was concluded that overall teachers did significant use of ICT in all 4 domains. They admired use of technology but at acceptance level not at practice level. Especially male teachers did not use ICT for transforming their traditional pedagogies; instead they used ICT to sustain their established practices. All educators (100 %) had a personal computer. Around half of them (54 %) had owned their computers for about 7 to 10 years, while others (46 %) had owned their computers for 3 to 6 years.

Teaching

Teachers were asked to indicate their response regarding use of ICT in their instruction and learning on a five-point Likert scale. Majority of the teachers (91%) thought that teachers can enhance their knowledge and can update their strategies by using ICT (M=4.75, SD=1.09) and also can advance their instructional techniques (M=4.63, SD=1.21). Ninety two percent teachers reported that ICT can enhance students' classroom participation and their feedback can be heightened (M=4.68,SD=1.02). Ninety four percent teachers perceived that ICT is a source for students' collaborative learning (M=4.55, SD=1.18). Seventy six percent teachers thought that students' writing skills can be improved through ICT (M=3.96, SD=1.89). It was a less perceived statement. Overall teachers had positive perceptions about the use of ICT in teaching and learning environment. This was supported by the interview conducted. Ten (10)

teachers emphasized the importance of the use of ICT. However, they considered institutional leadership's role the most important in this regard. Special reference was made to the provision of resources and resolving power issues referring to the responsibility of institutional leadership to provide continuous, consistently and creating environment conducive to ICT use by providing appropriate equipment and set up.

The result of the research shows that teachers frequently used ICT to evaluate students' learning through test or quizzes (M=4.99,SD=1.23). The second most frequent use of ICT was reported in giving instruction to pupils (M=4.65, 1.90). The least use of ICT appeared in sending assessment report to students and communicating with them (M=2.57, SD=2.05). However,

they needed more training and facilitation by the institute in terms of provision of resources and technical help was emphasized. These results are in line with the findings of Alharbi (2014) who reported there were some teachers who recognize the importance of ICT in developing more constructivist methods in the classroom. Results were also supported by earlier study conducted by Hennessy, Ruthven & Brindley (2007) who found a gradual process of pedagogical evolution. Teachers were developing and trialing new strategies specifically for mediating ICT - supported learning.

Administration

Research finding with reference to the ICT use by teacher educators in administration indicated that there are various prospective and management tasks of teachers that involved ICTs tools. Moreover, teachers felt they need more effective skills in ICT. They had the knowledge but felt handicapped in resolving some problems and with troubles shooters and feeling independent. 75% teachers preferred desktop or laptops for recording and saving students results, 55% teachers wrote students reports using MS Word and MS Excel (27%). Some used it for checking student lists (24%) and a few for checking timetable or notices (22%). Majority of the teachers reported ICT as constructive, helpful and supportive administrative tool. These are in line with the findings of Cowie (2008) who reported use of ICT by science teachers in communicating with parents, recording and checking students' information. Cowie's work is with science teachers, the present study primarily deals with teachers preparation – teacher educators interviewed were of the view that if the TEI, need to incorporate ICT more in regular practice to provide maximum exposure to

student teachers to help them develop essential skills and knowhow in ICT use – women university incorporated ICT more as compared to the other mixed large

university. The use of LMS and ICT was more in practice in the women university; however, all interviewees from the universities stressed the importance of more rigorous training on campus and during practicum to comprehend the effectiveness of ICT use in education.

Professional Development

Data analysis showed that the majority of teachers (85 %) with different areas of specialization, from both institutes and across the gender divide did not get any formal training from anywhere. Sixty percent (60%) teachers were reported as self-learners of how these tools work (55% male,57% female) while peer-assistance was extended to 42% males and 49% females in learning how to use ICTs . Technical support also contributed towards learning ICT tools for some teachers, more apparently in the Women University.

It is concluded on the basis of above findings that the professional development, especially in the form of training, is an important need for the Pakistani teachers to develop and improve their competence, to accelerate their motivation and for their effective teaching and overall job performance.

All interviewed highlighted the fact that in order to bring innovation in teaching and overall education system, ICT based professional development is essential. It thus believed, encourages innovative thinking and the implementation of modernized strategies for effective teaching and learning. Furthermore, all interviewed supported the view proposed by Earl (2002) that" when teachers teach in the classroom, they put into practice their thinking and beliefs about teaching and learning, consequently promoting a change".

Personal use

Teachers interviewed, further emphasized the notion that in this tech savvy revolving and vibrant environment of technology, teachers progress who have the capacity and knowledge to successfully teach online (e-learning), need to be able to transmit knowledge and culture to those that are being taught. This they said needs to be part of teacher's education. Eighty two percent (82%) teachers used internet for searching information and for various personal purposes. Ninety one percent (91%) teachers used email for correspondence. MS Word was used for recording personal experiences, information etc by 25% of the teachers. Power Point was not used for personal purposes by teachers. Excel was least used by teachers for maintaining and handling various personal data (13%). Forty Five percent (45%) teachers spent free time by

enjoying with the Paint software. Fifty two percent (52%) teachers used laptop or desktop for watching favorite movies or shows, saving pictures etc. in their free time. This indicates that, there is a significant personal use of technology by the teachers they therefore, need to connect their habits or personal use of ICT with their teaching and learning. The current curriculum, as pointed out by majority of the interviewed (7 out of 10) is not part of the formal curriculum more training by incorporation of such uses in the current teaching and learning in TEI is needed. They believed this would give them a better understanding of aligning personal use of ICT with teaching and learning in general. All ten teacher educators interviewed for the study pointed to the fact that there is minimal training and exposure with regards to effective use of ICT for standardized assessment. They stressed the importance of the promotion of technology-based teaching and learning, more significantly in standardized testing and assessment. This was essential for more democratic teaching and learning (Quraishi, 2004).

Recommendations

The above mentioned finding suggests that teachers need to be trained in a more organized fashion. Innovation should be carried out in teachers' professional development. Teacher educators should be successfully and effectively trained in order to prepare the prospective teachers. The findings of the study suggest that there is a general consensus among the teacher educators regarding the effectiveness of ICT for teaching and learning across all subjects. The following recommendations are presented in the light of these research findings:

1. ICT related curriculum is essential to be incorporated in the current teaching education curriculum, in order to upgrade it and align it with international best practice universities used to develop.
2. Continuous education programs, focusing on ICT use for effective teaching and learning. This must be developed by TEI in universities of Pakistan to support in service teachers to upgrade their skills and knowledge in ICT.
3. Leadership programs incorporating ICT use to equip institutional leadership with latest knowledge and skills related to ICT to help them improve their institution to make them more effective in teaching and learning.
4. Policy makers in the public sector used to develop pre-service and in-service programs for teachers in ICT to ensure that teaching and learning in schools and higher education is align with modern trends and requirements.

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