

ICT integration & the role of school leadership: perceptions of head teachers of secondary schools in Quetta Pakistan

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ABSTRACT: The study figure outs perceptions of secondary school head teachers about ICT integration in teaching and learning in schools in Pakistan with focus on Balochistan Province. This was a qualitative study with having eight head teachers as research participants while interviews, informal talks and focused group discussion were used as data collection tools. It is observed from the findings that most of the head teachers had positive perceptions about integration of ICTs into day to day teaching and learning practices. In addition the head teachers although revealed many hindrances in the way of integration of ICT into teaching and learning practices but there existed a significant optimistic approach, at the end of schools' head teachers, for having considered many enablers for promoting ICT integration in teaching and learning. Their effective leadership role was found to be the man enabler in this regard.

KEYWORDS: ICT, Head teacher, Perceptions, ICT integration.

1 INTRODUCTION

The changing times make the job of the educational institutions very much crucial as the 21st century generation demands much more from the schools and the teachers [18]. Since the revolutions in ICT the role of teachers and institutions needs to be redefined [4] and ICT integration therefore earns serious and considerable recognition worldwide and is widely explored [31],[13],[29],[35],[10],[21]. Schools in Pakistan, however, confront with and struggle to face challenges hindering ICT integration. Research studies, in the context of Pakistan, [25] underpin certain challenges hindering the integration of ICT in teaching and learning. These studies highlight lack of teacher's skills, of using ICT in teaching and learning, non availability of ICT facilities and non ICT supportive environment at schools as some key hindrances in the way of its integration at schools.

Despite all these challenges the studies of [11] and [16] for example, also observe a significant improvement in teachers' skills of ICT integration once their capacity is enhanced while [25] finds major development in students' learning outcomes due to ICT being used in teaching and learning by the teachers. This informs that despite the challenges ICT integration bears fruits when measure, like teachers' capacity building and provision of ICT resources, is made. Though teachers' engagement in capacity building programs enhances teachers' skills of ICT integration but theory and practice according to [8] are strongly linked and therefore teachers must be provided regular on the job support. In this regard research study [11] considers support from the school management one of the key enabler for ICT integration. While research in other part of the world do inform that head teachers possess a key role in ICT integration in the process of teaching and learning [15],[27],[2]. Head teachers as educational leader and manager possess a fundamental role in schools in Pakistan [28],[24],[19],[20] and hence could enable ICT integration in schools [11].

Though research informs about head teachers' role being very much fundamental in ICT integration but it becomes imperative to get aware of how do they perceive their role in this regard. This research explores about the perceptions of the head teachers of eight secondary schools, of Quetta Pakistan, to have insight about their perceptions in ICT integration in the process of teaching and learning.

2 CONTEXT & BACKGROUND

Eighteenth Constitutional Amendment, in the constitution of Islamic Republic of Pakistan 1973, has introduced a number of changes that have profound impacts on the existing institutional as well as legal framework of education in Pakistan. Certain major changes such as insertion of article 25-A and omission of concurrent list have occurred. The amendment has resulted in delegation of number of subjects to the legislative and executive jurisdiction of the federating units, the four provinces namely Punjab, Khyber Pukhtunkhwa, Sindh and Balochistan. These subjects, before the amendment, remained in the jurisdiction of the federal government. In context of education these include curriculum, syllabus, planning, policy, centres of excellence, standard of education and Islamic education.

The education department, Government of Balochistan, has further devolved powers to the districts and schools. In addition to devising a Balochistan Education Sector Plan (BESP), District Education Plans (DEPs) have also been developed, through consultative process at districts, for all the thirty two districts of the province. Furthermore targets of the district plans will be reflected in the school development plans being devised by the schools. There are 810 secondary schools in the province [6] and each one has been declared as a hub for the neighboring schools while this forms a cluster where the secondary school functions as nucleus in terms of implementing educational interventions and reforms. The head teachers of the hub schools have been empowered with regard to monitor and assess the performance of his/her own school and of the neighboring ones. S/he has also been authorized, via providing annual budget, to purchase furniture and other reading and writing material for his/her and the neighboring schools as per needs.

Owing to and on the face of Pakistan's Medium-Term Development Framework 2005–2010, Vision 2030 and National ICT strategy and the achievement of their goals and the ultimate aim of a knowledge-based economy[4], in the post 18th amendment scenario ICT, in the face of all the interventions remains a cross cutting theme. For example, Education Management Information System [6] has been transformed through a robust and effective use of ICT while real time school monitoring is being carried out through digital devices. Specific interventions with regard to ICT integration in the process of teaching and learning has also been made through certain initiatives. Chief Minister's ICT program has just been initiated where ICT resources are being provided to all the secondary schools of Quetta. While another key intervention regarding ICT integration is the proposed provision of ICT resources to 100 secondary schools of the province. In addition to ICT resources electricity back up support is also being provided to the selected schools due frequent to electric power shut downs occurring in Pakistan [16] A resource center is planned to be established at Quetta where subject experts will devise ICT based teaching and learning material and the same will be provided to the schools for ICT integration in the process of teaching and learning.

All these factors lead to form a different context of education where clarity of roles and responsibilities have been defined at provincial, district and school level in particular the context of schools has become scale of success for any interventions and the head teachers remain the key change agent [7]. ICT being focused and intervened at schools and the head teachers being empowered needs to have clarity and through understanding of the integration of ICT in teaching and learning practice, as they have a leading role in educational intervention [28] and in particular in the exiting educational scenario in Balochistan their role becomes more central. This therefore, becomes pivotal to have the insights of how these head teachers perceive ICT integration in the learning process as their perceptions and attitude matter a lot in playing their leadership role effectively [34]

3 OBJECTIVES OF THE STUDY

The key objective of the study was to identify perceptions of head teachers of secondary schools in Quetta Balochistan about ICT integration in the process of teaching and learning.

4 RESEARCH QUESTION

What are the perceptions of the head teachers, of government secondary schools in Quetta Balochistan, about ICT integration in the process of teaching and learning?

5 LITERATURE REVIEW

ICT in education has been in debate since its revolution and its adoption for creating knowledge economies and education has not remained a part as the very purpose of ICT in education, according to [37] is to facilitate better learning. Research informs that the organizations that do not fit in the use of new technologies provided by ICTs cannot significantly claim to prepare their students for life in the 21st century [18]. Their study suggests that the use of ICT in teaching and learning process enables students via engaging them in problem based learning and make them independent and critical thinkers. They further argue that the use of different approaches offered by ICTs enhance teaching and learning by transforming the environment into the one that is learner centered.

The term learner centered here refers to a complete paradigm shift from teacher centered and student centered but rather to one where both are equally involved in the process of learning. So, learner centered understandably means that not only students but also the teachers are engaged in the learning process and there prevails a learning environment where they learn in collaboration and learning becomes a collaborative process. ICT according to [11] seems to be concerned with achieving the goals of creating and transforming learning environment. For solving the varied problems of education it is understood that educational technology, as previously discussed, promotes suitable child learning processes. In developing countries, as [36] explores, it has to be mastered and utilized by educationists if they are to keep pace with each other and catch up with the developed nations.

Pakistan as a developing country do face huge demand from society to force schools to give appropriate response to this technical innovation [16],[11]. Schools face a huge challenge to meet the expectation of society's demand of ICT integration. The same becomes more challenging when research [11] explores lack of trained teachers and their low level of motivation, towards opting ICT as a tool of teaching and learning, as one of the key hindering factors in integration of ICT in teaching and learning. They emphasize upon developing teachers professionally to meet the purpose ICT integration. In the presence of ICT skilled teachers major differences in the learning of students and teaching approaches are observed [14]. Schools in the western world invested a lot for ICT infrastructures and teachers capacity enhancement over the last 20 years, and students use computers more often and for a much larger range of applications [37].

Research in the context of Pakistan, finds that most of the teachers are willing to integrate ICT in the process of teaching and learning [11]. A research study [16] carried out in the context of Khyber Pakhtoonkhwa and Punjab provinces of Pakistan on the impacts of teachers course on ICT integration finds a strong correlation between capacitating teachers and its delivery at the classroom level. Study [25] finds higher students learning outcomes in the result of ICT integration in the process of teaching and learning while another study [1] recommends focusing on enhancing the skills of the teachers to meet the purpose of ICT integration. This refers to a strong desire and competency at the end of teachers and a better future prospect with regard to ICT integration in teaching and learning in schools in Pakistan.

Theory and practice are strongly linked [8] while teacher working context is very vital in enhancing their skills of ICT integration [31]. It is fundamental that, in addition to enhancing teachers' capacity, they are to be provided enough on the job support. Such support could only be provided via offering opportunities to the teachers for their growth in ICT at their schools as [12] considers the same to be possible through effective educational leadership. School leadership according to him possesses a key role in this regard as their involvement in the academic process encourages teachers to take part in their ongoing professional growth. He suggests the need to develop a collaborative learning environment at work place and such environment is considered as a process "... in which the teachers in a institute and its administrators continuously seek and share learning, and act on their learning. The goal of their actions is to enhance their effectiveness as professionals for students' benefits..." (p.1).

A study [5] suggests that head teachers themselves have to become authentic learners and integral players in the learning environment they endeavor to create. They are usually perceived to be the role models for teachers and initiatives taker [22]. When they change their own practices and involve in or facilitate teacher learning, the teachers are more encouraged to help each other to grow professionally [5],[7],[9] So, it is quite evident that enhancing the ICT skills of the teachers head teachers need to improve their own capacity with regard to ICT integration. Otherwise their insufficient knowledge and negative perceptions of ICT in teaching and learning will hamper ICT integration in schools [15]. In addition to their understanding of ICT integration their heartening behavior towards teachers, for integrating ICT, inspires them to have a sincere commitment to their own as well as to the learning of students [30]. The head teacher therefore, has to be supportive rather than directive and should guide rather than dictate and must lead from the heart.

A research study on ICT integration [23], in Tanzania, finds the role of head teachers very central while [11] in the context of Pakistan, also proposes the administrative support very much important for the integration of ICT. In Kuwait a research study [2] finds strong co-relation between support from the head teachers and the ICT integration in schools. His study also

reveals that the supportive policies strengthen the role of head teachers to a greater extent. His study informs that the role of head teachers become more effective if the policies provide room for practicing their powers and the influence. Head teacher role associated with influence, power and accountability and finds it pivotal [26]. In the prevailing policy, of power devolution in Balochistan, the head teachers accommodates what [2] recommends and expands their horizon of influences for playing a central role towards the integration of ICT in teaching and learning practices. In addition when the ICT infrastructure, at schools, is also strengthened by the education department, then there emerge ideal conditions for the head teachers to play their role in this regard. This is informed that although teachers remain central in accommodating ICTs into classrooms but the spotlight has shifted to head teachers as key change agent for sustained ICT integration at schools [27]. The head teachers are therefore, very much effective in ICT integration and [15] recommends exploring the same further.

Research in Pakistan though explores about the issues or factors that hinder ICT integration but it meanwhile also suggests to exploring about factors that can make ICT integration possible in schools [11]. The role of head teachers being more considered and found central in ICT integration [27] need to be explored to find how they could make ICT integration possible in schools in Pakistan. The role of head teachers in the context of Pakistan has already been recognized very much fundamental in the overall educational reforms and initiatives [24]; [19]; [20] however, in the prevailing newly emerging educational context after power devolution and the establishment of schools clusters their role becomes much more critical. It is recommended that principals, in Pakistan, need to utilize their leadership capabilities towards integrating technologies [24].

This study, in the foresight of all the available literature and at the face of policies that empowers school leaders as key change agents and schools as a real implementation ground for gauging success of educational reforms, finds it pivotal to investigate about how the head teachers perceive the integration of ICT at schools. This is assumed to help in surfacing their perceptions for ICT integration at schools that afterwards lays a foundation for exploring avenues for ICT integration in schools in the context of Balochistan province of Pakistan as head teachers' perceptions and attitude matter a lot in playing their leadership role effectively [34].

6 METHODOLOGY

The qualitative research paradigm was used to generate data from the participants' perspectives in the natural setting, which [3] considers one of the basic characteristics of the qualitative research. It is argued that "Qualitative researchers are interested in understanding people's experience in the context. The natural setting is the place where the researcher is most likely to discover or uncover what is to be known about the phenomenon of interest" [17]. It was important to interact with the principles in real setting to gather healthy and reliable information.

Purposive sample of eight schools with equal participation of boys and girls schools was maintained. The research sites were selected on the basis of availability of ICT infrastructure and ICT teachers. The study had eight head teachers as research participants. A proper prior consent, of the participants, was earned. Semi structured interviews, informal talks and focused group discussions were used as data collection tools. A simultaneous data analysis was done to focus and shape the study as it proceeded. All the categories of the collected data were compared and connected for a more comprehensive meaning making. The reflective memos, field notes and interview transcripts provided substantial support in analyzing and interpreting the data.

7 FINDINGS AND ANALYSIS

In relation to head teachers' perception of ICT integration in teaching and learning at their schools few of the head teachers were found so hesitant about thinking of ICT integration to be merely impossible in initial interviews while in later seating they were with totally changed perceptions. It shows that being not in the discourse of ICT integration they did not feel the intensity of the ICT integration at schools and most importantly in teaching and learning practices. A head teacher in the initial interview shared that they, their school, did not need ICT as they could hardly teach through chalk and blackboard and according to him it was better to effectively manage the same. While in the second interview he shared:

"Don't take my first interview seriously as my views are now changed after I discussed it [ICT integration in teaching and learning] with my ICT graduate daughter. She shared how she is thought through ICT at her university. It is very effective and now I feel why children are afraid of coming schools as they are fed up with the same chalk and blackboard approach. They are the kids of their new world while we teach them with the way we were taught.... Since [after having discussed with his daughter] than I think if the teachers of the university can use ICT in teaching than why not we [schools].... Though it seems difficult but merely doable... you come next time and you will not see my computers [including other ICT resources] that dead but completely utilized"

The views of the head teacher underpin a very important aspect of lack of awareness of some head teachers about ICT integration. The same reflects as causing their lack of interest and intentions in this regard. It also reveals that head teacher's less conceptual understanding of their role as [34] also finds have less room left for creativity and change. On the other hand six of the eight head teachers had enough understanding of ICT and its integration in teaching and learning. They could simply exemplify about how ICT could enhance teaching and learning practices. A head teacher for example shared that if he sees ICT being hugely become part of daily affairs then why not in schools. If shopkeepers for example, manage their business through ICT like CCT cameras and accounting software then why not the schools and the head teachers, according to them, in particular, should help schools to get enable in this regard. Most of them were of the view that ICT can be integrated in teaching and learning practices but may not be to the extent that the developed world opts to.

A principle upon responding to a question of how their perception could be exemplified said that he himself has used certain ICT applications in the classroom. He added that in addition to download different material, such as activity sheets, from the internet and used them in the class. Another head teacher shared that i have been using MS word and in particular Excel in my school planning and budgeting and I think teachers can use the same for enhancing students' skills of organizing and analysing the data. Such understanding of head teachers surfaces an encouraging aspect of their perception for ICT integration in teaching and learning. Another head teacher with having good examples for ICT integration added that ICT integration could be possible, that in addition to provision of ICT equipments, teachers' capacity is enhanced and supportive environment is created at schools by the head teachers so teachers practices newly learnt skills and approaches. He considered head teachers' role very imperative being having powers in schools and in particular after being empowered by the education department. He was confident to have opened the door of ICT integration. In addition to creating opportunities for teachers professional development for ICT integration a head teacher stated that their own skills need to be enhanced first, prior to engage teachers in teaching through ICT. She said:

"We always force others to do things for us and the same perceptions may exist with regard to ICT integration. I have always tried to lead with examples and this convince teachers better than what I intend to convince them through debates and conversations. I strongly support ICT integration in the teaching and learning process as I consider it very much fundamental in this modern world. I have learnt about ICT and its integration into teaching and learning with the help of our ICT teacher"

This head teacher perceives herself as role model and the same reflects in the integration of ICT. To bring about change head teachers, according to her, must lead from the front, via setting examples, in order to inspire and motivate teachers to adopt that change.

She further added that they need to learn from one another at schools as according to her at schools there exist very skilled human resource and according to her she usually go to her teachers for her own learning because she felt that it was not important that a head teacher must ask teachers to meet at her/his office. The perceptions of the head teachers considers the integration of ICT through developing a collaborative cultures at schools as the literature perceive and propose the existence of learning communities or learning organizations where each one seek and learn without fear and authority from one another [32].

In response to what means could they perceive as fundamental elements for ICT integration they mostly pointed out strong desire and motivation of head teachers and teachers for laying the bases for ICT integration at schools. A head teacher pointed that availability of ICT resources are fundamental for ICT integration but according to her they do have equipments that they could proceed with and pointing out the scarcity of resources some time could not be justified as a hindrance in the way of ICT integration but rather an excuse at our part. Another head teacher also shared that there were enough ICT resources in their schools and enough to introduce ICT in teaching practices. Adding further she shared that the need for further resources would definitely emerge as they continued with ICT integration and could put the demands for further resources. Such perceptions of the head teachers reveal a fundamental phenomenon of the process of change being inevitable and beginning from where the change is possible [7]. Probing further, surfaces another important aspect that in parallel to demanding for more ICT resources they need equally skilled and qualified teachers. So, although resources do matter but trained teachers and having a supportive environment available for teachers' professional development, at school, need to earn more focus as ICT integration will need on the job support for the teachers, she added.

Two of the female head teachers perceived ICT very much helpful in managing schools as they were of the opinion that ICT had contributed into many aspects of the schools ranging from devising student assessment tools, exam results, announcing results, maintaining updated record of the school. Though the same doesn't show to have direct link with ICT into teaching and learning but definitely lead to generate cross cutting value of ICT and could definitely trigger its use in each aspect of the schooling. Teachers when see the head teachers using ICT in their professional domain will definitely think of the same in their teaching and will look for exploring further in this regard.

Head teachers perceived the provision of technical and moral support to the teachers with regard to ICT integration very pivotal. In response to exemplifying the support most of them revealed the recognition of incentives in form of awards, encouraging teachers on occasion and during the school assembly. Two of the head teachers were of the opinion that in addition to such support they needed to support teachers via providing technical inputs either by them or having such human resource arranged for them. They considered ensuring the required material such as varied software, internet connectivity and other necessary ICT tools available for the teacher. This refers to head teachers' understanding of the support on their part as [29] finds in his study that the school leadership in Bahrain is limited to recognition and appreciation of teachers efforts and propose school leadership to go beyond appreciation and recognition of teachers efforts via providing technical support and becoming a role model in this regard.

Two of the head teachers pointed out shortage of time a key factor that hinders ICT integration. According to them the teachers have to cover a lengthy syllabus which makes it difficult for them to engage teachers in extra sessions for enhancing their skills of ICT integrations. Four of the teachers on the other hand did consider the same as a key hindrance but were of the view that they needed to think out of the box and could create opportunities for teachers' engagement in sessions being organized for improving their skills of ICT integration. They proposed certain strategies as a head teacher elaborated:

“Why do we think we need to have eight periods a day and each period of 30 minutes... this is not a universal rule ... we can manage time by many ways such as teaching four subjects in one week and four in other and maximize the period timings so, we can cover syllabus and have sessions, at least a week for teachers to help them enhance their skills”.

Another head teacher came up with more suggestion as she shared that they would co-teach with the teachers to help them during what they actually do in the classroom. She said... it will help manage time effectively and facilitate the teacher in real working environment and develop good working relationships with the teachers and even involve the students in the process. Such opinions leads to evolve head teachers role to more a mentor and coach rather merely a school administrator.

The head teachers, all of them, were of the opinion that ICT integration remains possible once they are themselves capable of integrating ICT into teaching and learning practices. A strong desire and optimistic opinion were found at their end with regard to ICT integration as they perceived ICT as facilitating teachers and students in their learning. According to them it depended mostly on the head teachers that how they come up and play their leadership role effectively towards making teachers enable to integrate ICT in their teaching practices.

8 DISCUSSION

The findings inform about the head teachers perceptions to be very positive towards ICT integration. They consider schools equally responsible to respond to the changes and demands that ICT has. In addition they were also able to inform about how they perceive their leadership role towards facilitating the ICT integration. This reveals the idea of ICT integration being well realized yet the same is new to them. The important point is that these head teachers were open to learning. A head teacher, for example, not considering the ICT in teaching and learning was very much convinced when he was oriented by his daughter about the due role of ICT in education and he had very different and positive perceptions in the next session of interview. This implies that enhancing head teacher' skills remain prerequisite in order to improve their leadership role with regard to ICT integration or other educational initiative and reform. [20] In the same way found that if the head teachers are aware of the scope and value of ICT in the due process of learning then it will make them more inclined to and effective in playing their role towards ICT integration.

The head teachers have considered a collaborative learning culture and supporting working conditions as a vehicle for professional growth with regard to ICT integration. The same process was perceived by the head teachers to be very much important for their own and the learning of the teachers. This is similar to the findings of other studies [2],[15]. In this study there were certain facets ranging from regular interaction and discussions, organization of session and co-teaching perceived to be vital for ICT integration. Above all the head teachers perceived their own involvement a corner stone in this regard. The same is refers to pedagogical leaders that becomes integral part of the teaching and learning practices [32] rather than behaving as boss and focus more on directing others. Such perceptions, of the head teachers, are found to be more of enabling others and in particular very helpful towards ICT integration at schools [27].

In addition to their own involvement in the due process of ICT integration in teaching and learning practices the head teachers perceived their out of box thinking as a major shift from a more traditional style of leadership and management, that is limited to accomplishment of more administrative tasks, to initiating the process of change [22]. The head teachers for example considered the work load of teachers and shortage of time, as mostly the head teachers in Pakistan are faced with [28] as a key hindrance in ICT integration and proposed to deal with these issue more tactically rather than blaming the issue

and having their hands up. A head teacher for example provided an insight about how she could minimize the issue via bringing about change in the length of period as according to her a thirty minute period and eight periods in a day was not a universal truth. She could maximize period duration to an hour and have four to five periods a day via putting alternate subjects a week. Such approach of the head teachers reveal them to be more focused about eliminating the hindrances via realizing their due role. This refers to improved leadership skills and strong level of empowerment and of the paradigm of practicing powers and empowering and heartening other [30].

Another key aspects revealed by the head teachers was scaling up the ICT integration gradually rather than waiting for the environment to become ideal in terms of availability of sophisticated ICT resources and intervene with full scale reforms agenda of ICT integration. They were more focused on ICT integration not as only about availability of the required resources but about influencing and empowering teachers in the ongoing engagement in their learning. The same perceptions of the head teachers emerge as one of the key enablers towards ICT integration in teaching and learning. They deem to have good understanding of their context in terms of the available ICT resources, the human capital and above all the level and scope of ICT integration in teaching and learning.

9 IMPLICATIONS OF THE STUDY

Being a small scale qualitative research, the findings might not be applicable for all educational contexts but they provide head teachers of the province, or of the similar contexts, deeper insights about framing future strategies with regard to ICT integration in day to day teaching and learning practices.

The research for example [19] consider the role of the head teacher very significant in the context of developing countries and in the context of Pakistan in particular, where the teachers have fewer opportunities for professional development and the head teachers are more concerned about administrative affairs rather than the academic ones. However, it is now time for the head teachers to think of their roles seriously in terms of ICT integration at schools in order to meet the challenges of modern era that revolution of ICT has imposed on schools. This study will help and provoke the desire of head teachers for ICT integration as they will think seriously about ICT integration as a dire need and an imperative to be opted by them towards transforming schools into real learning places.

The findings earn more value in the educational scenario of power devolution to the clusters and the head teachers of the cluster schools having the horizon of influence more broadened. The findings can help them about how to integrate ICT at their own schools and at the neighboring ones coming into their cluster jurisdiction.

The study was conducted in public schools, in Balochistan which were similar, in terms of physical resources especially with regard to ICT infrastructure and ICT skilled human resource, to the rest of the schools in Pakistan and particularly in Balochistan. By sharing the similarities do not mean that the head teachers in other public schools can or should necessarily perceive ICT integration in the same way, but they may add value via perceiving ICT integration beyond the perceptions of head teachers in this study and hence may establish effective ICT integration at their schools.

10 RECOMMENDATIONS

The study surfaces new dimension of head teachers' role, as they despite many hindrances in the way of ICT integration, is found very much optimistic. At instances some head teachers had very practical ideas and strategies for ICT integration in schools and it therefore, would be very much fundamental if future research focuses on the role of these head teachers in ICT integration at schools and in particular enabling teachers towards its use in the process of teaching and learning. The study at instances finds the female head teachers being more optimistic and serious about ICT integration in teaching and learning practices so, exploring the same from gender perspective would also be very much interesting and productive.

Most of the head teachers, in the study, were found more aware of their due role in the process of educational change with respect to ICT integration but at instances few lacked deeper understanding about ICT in education. The same establishes a fundamental need for enhancing their understanding in this regard. This aspect calls for serious consideration, of the education department, policy makers and educationist, about how they strengthen their understanding of ICT in education.

One of the major recommendations would be to look into how empowering the head teachers leads to effective educational reforms or serve the overall school improvement agenda. This study finds the empowerment of the head teachers' as one of the significant dimensions in terms of enabling them thinking out of the box, challenging the laid down traditional principals and the statuesque and bringing about change. This aspect does need some consideration in terms of looking at it from the perspective of a correlation between empowerment and accountability.

In the context of the developing countries, particularly in Pakistan, where opportunities for teachers' professional development are very limited, studies need to be conducted to explore appropriate ways that help teachers grow professionally in the area of ICT by providing opportunities at the school level. So, studies conducted in this regard in the context of Pakistan but in particular in Balochistan, where head teachers become more influential in terms of possessing more authority and influence after being empowered through cluster based power devolution, would be a valuable contribution towards integration of ICT in teaching and learning at schools.

Another important feature, as this study explores, could be to look into ICT from the perspective of its use in helping out the head teachers in effectively managing schools. The same if explored further would provide deeper insight to them in this regard.

11 CONCLUSION

The head teachers, in this study, were found to be very much inspired with the use of ICT in education and perceived the same to be greatly applicable at the school level. They considered bringing about change with regard to ICT integration a slow and gradual process that according to them would bear fruits once schools proceed with ICT integration from the level that they deem possible rather than waiting and intending to start with a full scale ICT utilization. Such perception according to them itself hinders the ICT integration at schools. Head teachers perceived their role very much effective to improve the use of ICT in teaching and learning at their respective schools. They considered their role to be very effective with regard to enhance teachers' skills of ICT integration via realizing the concept of ICT in education to them, encouraging them to regularly use the available ICT resources in the process of teaching and enabling them through role modeling with regard to understanding and utilization of ICTs in the due process of teaching and learning. They perceived their strong will and commitment and more importantly thinking out of the box as key factors that enable schools and teachers to best utilize ICT in the process of teaching and learning.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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