



RESEARCH PAPER

Role of Technology Integration on Educational Leadership: Impacts on Institutional Performance

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ABSTRACT

The education sector of Pakistan is trying its best to facilitate our education setup to embed the use of the latest technology in line with traditional methods of teaching throughout the country that are being integrated from the very first year of schooling. The primary focus of the government is to replace all traditional methods of teaching with interactive teaching methods so that ICT-based teaching can be promoted throughout the country, necessary to compete with the world in the 21st century. This study highlighted the effective role of technology at the secondary school level as well as on school leadership. The head teachers of the Tehsil Jhang from the public sector were the study population and 50 head teachers were taken as samples of the study. After data collection researcher applied the independent samples t-test to analyze the impact of gender perception to embed or use technology and ICT tools in their classroom. The study results emphasized that the use of the latest technology to educate children is one of the most important needs that has to be used by every instructor in their school setting so that interactive teaching can be made possible for the effective learning of children.

KEYWORDS ICT in Education, School Leadership, Technology in Education, Transformational Leadership

Introduction

Education in the 21st century is moving towards greater merging of technology as this is a program that is more reachable, popular, and has greater demand as compared to earlier tools used in education. The computer is being used within classrooms throughout the world and it helps students to acquire expertise and provides help to teachers for significant and advantageous learning environments for all students (Webster, 2017).

Leadership is essential to the success of any business. In the coming decennium, digital leaders in institutions or schools will create important changes through the use of technology. Digital leaders have a significant role in supervising the school educational system and administering the educational modern technology assets in those their organizations invested in the broader sense (Albright & Nworie, 2008). Your digital leaders of the future should be known to recognize the potential of modern technology in school education (Nworie, 2009). Leadership is a requirement for organizational processes and performance in education (Hope, 2012).

School leaders should follow and learn about studies related to modern technology equipment such as personal computers and their software to become professionals. That may help in to become successful leaders of the future in education sector. For this purpose, they should visit other schools that have good technology resources at their institutions. Therefore, a school must have a leader who is aware of the

potential of technology and its future development, and who is also aware of how the school can integrate this technology into teaching and learning. This is important for the successful development of ICT within the school setting (Stegall, 1998).

Nowadays, parents who want to get their children educated, they prefer not to rely only on buildings or structure of educational institutions. They do look for the use of modern aspects of education such as e-learning, e-education, and e-tech. etc. Despite this, they are looking for proper staff that is skillful and aware of the technology that fulfills modern age requirements of children (Bozkurt & Ruthven, 2017). In addition, they are looking for the technical shape of the institution, an educational institute that encourages the autonomy of people with special needs (Kumar & Sharma, 2010).

Transformational leadership is a type of leadership that is truly committed to the change phenomenon because our schools have to be shifted towards technology in all aspects. (Leithwood, 1994). The transformational leadership concept was given by James McGregor Burns. James work has a lot of importance in the educational leadership area, especially in changing of school environment towards technology. The basic rules and exercises on transformational leadership are also studied & picked up in applied education (e.g., Sergiovanni, 1990; Brown, 2001; Leithwood, 1994) and are studied for research purposes (Lam, 2002; Fisher, 1994). Few researchers agreed that transformative leadership exercises are really helpful in the application of technology at the school level (Leithwood, 1994; Yukl, 1994).

We live in a time called the digital-modern age and the age of knowing all things. The fast development of Information and Communication Technology (ICT) combined with the demands of the wisdom organization has an enormous effect on learning. Suppose that ICT has become commonplace in many schools over the past decade. Competitive economies such as Hong Kong, America, Singapore, United Kingdom, and Finland accepted the role and importance of ICT at school-level. Many of these are countries became leaders to encourage use of ICT and new technologies in school setting. Researchers related to education are in search of the study of influencing factors that are barriers to putting technology in schools (Comber & Lawson, 1999; Mumtaz, 2000). Educational or institutional leadership is one of the important factors in identifying the barriers where the gaps are found in applying technology (Bingham & Byrom, 2001).

Literature Review

The latest digital era leads the way for major substitution in the development of technology. Many of the persons want access to information technology for change from beginning to end. The Digital era & the source of internet-related devices are growing continuously all over the world. The use of Internet technology continues to every day at its peak as seen from the previous day. Due to more and more use of e-tech especially internet & social networking in young students is very common. From a research study by the Pew Research Center, 95 percent of young students from the ages of twelve to seventeen use the Internet 80 percent for social media networks (Lenhart et al, 2011).

A key factor that determines the usefulness and effectiveness of technology at the school level or in class is leaders' attitudes and opinions. The impact of attitudes and beliefs on pedagogical practices as well as technology adoption will be generally felt by education leaders. In this paragraph, several issues are raised, and we need to find ways in which it is possible to promote a favorable attitude for optimal use of technology. Technology is being used in mostly schools right now. The important question is how best to implement the technology, not whether the technology will be used (Keengwe, Onchwari, & Wachira, 2008; Ertmer, 1999; Ertmer et al, 2012).

Leaders need to rely upon comfort and confidence in their ability to make the most of these opportunities given the wide range of teaching technologies available. The leaders of today are growing up without access to technology, e.g., personal computers and the Internet, but younger students grow up in a world that's filled with computer technologies. These digital natives can be intimidating to teachers, in particular those who do not have any experience with technology. If the teacher feels it lack of skills to use technology, they may feel a lack of fluency in class, use less technology and be less likely to explore new possibilities that benefit from technology and designing their classes (Hughes, 2005). Stick to traditional teaching methods, teachers are less familiar with technology to maintain an understanding of internal control classrooms and do not need to prepare them for the challenges of a digital native teaching environment. Therefore, for schools that know of information and communication technologies, teachers must be selected by their headmasters.

From 1990-2000, the primary responsibility of teachers was to integrate pedagogical techniques aside from knowing their important role in the development of educational leaders as a whole procedure (Brockmeier, 2017). Application of technological process needs over and above the addition of technical tricks to the lessons, but changes in lesson planning, preparation, and application. School leaders must be leaders of change. The leader's role in the process of applying advanced e-technology efforts requires the involvement of stakeholders where hurdles and requirements arise and are solved in cooperation with the frontline leader.

Key concepts of digital leaders of the future in education are related to integrating technology into classes that include different postulates of e-leadership and e-technology readiness. Technology application is explained in terms of its basic chief function followed by the engagement procedure that is effective in their educational experiences in the schoolroom. The theoretical sub-structure of the research study highlights the analysis of the basic elements related to educational technology challenges identified in the implementation strategy study. Hence, an examination of the literature review emphasizes certain technical factors implementation and technical guidance with lessons learned from previous research. Review including the key principles of teachers and school leaders in the application structure for implementation of technology use in school culture trying to incorporate e-technology into the educational procedure. This study also shows how obsessed the educational leader is with technology leadership education and approaches (Bullock, 2004).

The role of e-tech in altering the attitude of educators is one more measure and it has the connection between monitoring of educational aspects and digital or e-leadership. The task of educational leaders to process the programs, assess education, learning, and engagement with collaborators can be just a waste of time and assets if not administered accurately and if tackled with a poor frame of mind. From past studies, it is very clear that everyone was focusing on simple leadership skills but it's the twenty-first century the age of digitalization. In this digital age education is changed from top to bottom in every field of life. Computers, laptops, tablets, mobile phones, and smartphones come into the field which is why the quality of education is going to its higher level of achievement. Now, accessing knowledge is just at your fingertips, you can search for data, and literature from many search engines like Google, YouTube, etc. Digital libraries or e-libraries are introduced to many of the top universities and students all around the world benefit from them (Copeland, 2014).

One more significant point of view of implementing technology as a digital leader of the future is how will power skills be managed by the educational leader for decision-

making in the sense of effect on designing and success of teachers. Different research writings show that the approach adopted by digital leaders addresses the issues and difficulties they are facing by the teachers who are using technology is very important to continue the usage of e-tech in the schoolrooms. Educators who are working on the application of e-technology exposure help, support, and education for technology concerns faced with technical leadership school administrators. A joint research overview on technology integration was synthesized and criticized indicating where the study led to e-technology applications beginning on which present and further writings will play a vital role (Clement, 1996).

Material and Methods

The method used for this study is described in this portion related to essential tools used and techniques that are applied statistically and data collection method according to the research objectives of the study.

Nature of Research

The nature of the study for this research was quantitative and the survey research method was used in the form of dichotomous (Yes / No) format to fulfill the basic requirement of the study. The purpose of the study was to explore the role of technology in education and school leadership.

Population

The population for this research study was the heads of public secondary schools of Tehsil Jhang, both male and female. Sample was drawn from these head of institutions by following the given procedure below.

Sample and Sampling Technique

From 115 secondary schools of Tehsil Jhang (62 male schools and 53 female schools), 50 secondary school heads were selected of which 28 male heads and 22 female heads participated in this research study by simple random sampling technique.

Research Instruments

To see the role of technology and school leadership survey, the researcher selected an research instrument in the form of dichotomous (Yes / No) questions/questionnaire. These questions were closed-ended. The validity of the instrument was assessed through expert opinions and validation of the study was assessed through pilot study. It consisted of 50 heads (male and female) of secondary schools of Tehsil Jhang. The researcher administered the questionnaire to the heads of secondary schools personally to get feedback. There were 10 questions for each head to know the role of technology in education. Additionally, the heads of institutions were asked structured questions regarding the influence of technology on their institutional performance.

Analysis of Data

The collected data was tabulated in the form of frequency against each response with the help of SPSS. For statistical treatment, a simple percentage, and Independent Samples t-test techniques were applied to analyze and interpret the quantitative collected. Thematic analysis technique was used to analyze qualitative data based on structured interviews of participants.

Results and Discussion

The collected data was analyzed with the help of simple percentage table as well as independent sample t statistics so that research questions can be answered accordingly.

Table 1
Gender-wise distribution of sample taken from heads of secondary schools

Gender	Frequency	Percentage
Male	28	56%
Female	22	44%
Total	50	100%

Table 1 shows the sample taken for this study. The whole sample consisted of male and female heads of different public secondary schools. They are 50 in number, 28 male and 22 female heads of the institutions.

Table 2
Summary of T-test of the Study from the Sample Taken

	Responses	f	t-value	f-value	Sig.
Basics About Technology	YES	39	0.568	1.346	0.252
	NO	11			
About Technology Helpfulness	YES	44	-1.185	5.976	0.018
	NO	6			
About the Future of Education Based on Technology	YES	28	-0.108	0.046	0.831
	NO	22			
Related to Internet Availability	YES	39	-1.489	8.873	0.005
	NO	11			
Related to Computer Lab Availability	YES	39	-0.787	2.429	0.126
	NO	11			
Idea About Online Learning	YES	31	-1.556	4.752	0.034
	NO	19			
Related to IT Expert Presence	YES	39	-0.787	2.429	0.126
	NO	11			
Offered Computer Subjected or Not	YES	39	-0.787	2.429	0.126
	NO	11			
Possibility of Management Without Technology	YES	38	-1.839	13.196	0.001
	NO	12			
Need Training Sessions	YES	45	-1.726	14.334	0.001
	NO	5			

Table 2 shows the several responses of secondary school heads related to the role or importance of technology and t-test values. Most heads of secondary schools in the public sector choose the option YES which shows that they admitted the role of technology and its effectiveness to influence students learning in educational setting.

Conclusion

That most of the heads of public schools know the importance of technology, they have a basic idea about technology use as well and they know that technology is helpful in education and it has great importance in future education. The majority of participants were found very dedicated to promoting the use of technology and ICT-based tools in their schools and considered it to be helpful, not limited to students and teachers but also

for their day-to-day tasks. They further emphasized that the more education gets advanced, no educational institution can keep teaching students without the use of such advanced technology that has an enormous role in the intellectual development of students. They confessed that by keeping this importance in mind, they were trying their best to equip their educational institutions with computer labs along with available uninterrupted internet facilities for all the stakeholders under the supervision of qualified IT experts. By knowing the role of technology in education they have provided their schools with internet facilities, computer labs, and IT experts. Most of them have ideas about online learning and are offered computer science subjects at their institutions. They think that management cannot be possible without technology and they need training sessions to improve themselves according to the modern age of technology. The participants further clarified that the use of technology and ICT-based tools in schooling not only helps the students and teachers but also helpful for the heads of educational institutions to polish their leadership skills and be able to manage the day-to-day tasks easily such as over-see routine operations at the school, management of budgeting and logistics, establishing and ensuring learning goals in line with national curricula, assessment and monitoring the performance of teachers, and so on.

Recommendations

Based on the results of the study, a few recommendations were made:

- head of educational institutions may have basic knowledge of ICT tools and understanding to handle such tools effectively;
- head of institutions may put their effort into encouraging the availability of computer labs at school, accessible to all stakeholders including students, teachers, and administration so that people may get enough experience to ensure such tools in their day-to-day work;
- head of institutions may ensure to arrange periodic training sessions so that administration, as well as teachers, can get the proper training to use any latest revision in different software available in the market, particularly useful in the academic field. It may be helpful to improve the performance of the educational institutions as a whole.

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