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Digital Media and Smart Education in Pakistan: Challenges and Prospects for the Teachers in the Age of E-Learning

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Abstract: *In the current shift from traditional teaching to a technology-driven scenario, it has to turn out to be a challenge for the teacher to have room for e-learning in the teaching process. Information-Communication Technology is a central part of our daily routine life, except it is still ongoing course to find an improved position in schools and higher education, while large no of teachers still is not up to date with information flooded and technology outburst; however, they are ready to settle in it. Objectives of this paper are to illustrate the responsibility of a teacher and the significance of e-learning in the current scenario COVID19. It highlights the challenges faced by teaching staff in Pakistan to apply e-learning and makes an attempt to propose diverse solutions to the awareness, implementation and compatibility with regard to the e-learning solutions by the teachers in their teaching-learning processes.*

Key Words: Digital Media, Smart Education, Teacher, Information & Communication Technology and E-Learning

Introduction

Teaching and learning have gone through a revolution in the age of Communication and Information technology. The information flourish, consequently, knowledge & awareness explosion led to tremendous change in the life of the individuals today. The effects of these changes can also be noticed in the educational field. Across the globe, connectivity made possible by Information & Communication Technology. Searching information nowadays becomes a child's play. In the 2020s, the young generation is relatively expert at usage and handling of ICT, running and working with new applications, technology and equipment. It is generally observed; the younger kid even toddler, most likely due to their hereditary is capable of manoeuvring smartphones and different contemporary gadgets. Therefore, new technologies and gadgets have been entrenched with the routine of contemporary life. Although there is a growth in the interaction among folks and societies, societal growth is not equal and same in different countries and regions. This discrepancy is further observable among developed and developing countries and nations. Same could be observed their incapability of using latest technology effectively, is a factor among many other factors that are decreasing and slow downing that community & monetary growth in under develop/developing countries and regions (Morgan, 2001). Technologically advanced countries introduced the plan of e-learning, to train the public regarding growth in information, technology and available opportunities worldwide. While in under develop and developing regions, the same ideology has not been implemented having similar objectives; however, it was incredibly useful to bridge up the gap among developing and developed countries. Better reach to learning & comprehensive availability of correct information can help progression in under developing countries. At present, it is observed that

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e-learning, as an economical source as compared to traditional ways of dissemination of information, is an attractive and preferred option of education crosswise the world (Lowenthal, 2010). The current study is a descriptive analysis of the e-learning and its needs and challenges for teachers in Pakistan.

The benefits of technology have cemented ways for globalization. The progress in technology varies from the microcomputer to PCs and laptops. E-learning has developed with the expansion of technological advancement. The E-learning besides the information communication technology put a larger bang on the development of an economically smart education structure for developing countries and regions. The no. of program and courses open online is increased in current era among the majority of the higher educational institutions of the world, via online learning access. The e-learning is an exciting subject of discussion worldwide (Maddux et al., 2005). As e-learning was dazzling in urbanized and developed countries, but now it is stepping into the under developing countries and regions. The entrance of e-learning into the developing & underdeveloped states is an underneath supporting hand for the governments in such countries to beat the deficiency of teaching staff (UNESCO, 2006). The easiest and flexible way of teaching and learning in higher education, it can also be used as a tool to increase the number of students in their institutions (Dhanarajan, 2001; Patton, 2000; Potashnik and Capper, 1998). There are mainly two sources of challenges for e-learning in developing countries, one technology and two human technology-wise; the developing countries face problems like computers, electricity and other technology-related skills (Dhanarajan, 2001; Heeks, 2002; Rajesh, 2003). The lack of self-inspiration and motivation, in energetic input and unwilling to change from traditional learning, is pretentiousness paradoxical situations (Eastmond, 2000; Evans, 2005; Sehrt, 2003). If a country understands all the perspectives and challenges in the way of e-learning before implementing it, the time and cost can be saved. There is remain a discrepancy that would exist among the developed and developing nations and countries in the implementation of the e-learning, and its development is based on the number of computers they have, the technology they use and accessibility of the internet. Amongst the developed countries, the United States of America is the one who has a greater number of computers as compared to all other countries. (Macleod, 2005). They use technology in all aspects like an improvement to learn, communicate, and entertainment in their everyday life (Chan and Lee, 2007). The dares that developed countries are facing will not be similar for developing countries. The developing countries have more challenges than the developed countries due to lack of infrastructure.

E-Learning with Digital Media and ICT

Despite the evolution in learning technology and its relevant fields, practitioners, and researchers yet not agree on a common definition and terminologies (Lowenthal, 2010; Volery, 2000). In this current research paper, e-learning is discussed mainly in procession with the definition set forward by the Higher Education Funding Council for England (HEFCE,2005) in which “e-learning is any learning experience supported by information and communication technologies (ICTs.).” Furthermore, there are many definitions that prop up and guide the usage of the term of e-learning in this research paper. As per the E-Learning Policy (2007-2010) of the University of Liverpool, “E-learning is learning which is enhanced, supported or assessed by the use of electronic media. E-learning may involve the use of new or established technology and/or the creation of new learning material; it may be deployed both locally and at a distance”. Fry (2000) precisely define e-learning in these words “delivery of training and education via networked interactivity and a range of other knowledge collection and distribution technologies”. Bleimann (2004), elaborates that “E-learning is a self-governing learning that is based on technology, especially web-based technology”. Horton (2001) states e-learning in this way, “the use of the Internet and digital technologies to create an experience that educates fellow human beings”. Evans and Lahn (2004) define, “E-learning is a web-based technology that involves multimedia courseware”. Carefully it can be stated that the E-learning process is information and communication technology-based. To enhance learning performance and efficiency, they evolved around Information Technology” (Hamid & Lytras, 2002). A reasonable E-learning explanation depends upon correct usage of technology, Handy user-device interface and its general adequacy as human experience. As a result of this conversion, a disagreement among few intellectuals is found, whether computers can replace the teachers or not.

Significance of Digitalized Learning

The Digitalized Learning could be a mixture of textual material and graphical instructions with the teacher's personalized enthusiasm blended finely. The digitalized studies could be possible as a combination of media elements like words, graphs, photographs, visuals, illustrations and other methodologies during delivering of lectures easily. This method of study expanded the organizational accomplishment and classroom performance, but this relied on skill development and individual's learning of teachers too. The digitalized studies expanded the horizons of knowledge and collaborating study around the globe. The research testimony signifies that accurate execution of digitalized studies – "E-Learning" – in education sector enhanced the effectiveness of scholastic procedures. ICT would be applied to solve the grouping obstacles and interconnected ventures. Hence ICT could improve learning consequences.

Furthermore, e-learning can cater to the contemporary age's technological needs of the young ones as the young generation is very comfortable and uses to of technology via various medium and applications, so they get facilitated and involved in their learning if traditional methods of teachings are replaced by the latest one of ICTs by the old teachers to bridge up the generation gap. That generation gap is now turned in to "NO INTEREST" in knowledge by old methods of teaching without ICTs. E-learning also facilitates information and knowledge by way of global connectivity and keeps the interest of young generations. It enables them to be used as an efficient source to implement constructivist pedagogy among young learners. It is similar to the constructivism planned by National Curriculum Framework in 2005 by NCERT, India. E-learning will make it easy for the learners to learn "how to learn" rather than that of the old one "what to learn". If the students are taught 'how to learn' and they are engaged in the learning processes by using ICTs by experienced teachers, learning would be an appealing and motivating job for them and students would themselves developed ability to become ultimate learners for a lifetime.

E-Learning need in Pakistan

The existing situation of Pakistan, especially in COVID 19 regarding e-learning is, ICT has a lot of potential in upcoming days in higher education. The prospective necessity for e-learning in Pakistan has been getting substantial consideration from various other sectors of education and business too. Although there seemed to lack the digitalized infrastructure and appropriate funding and interest in/for training but in the era of pandemic situations and security threats for education institutes, the need of distance cum e-learning had been becoming desired preference and the alternative possibility for the field of education.

The possibility and capability of e-learning could not be exactly rendered because of several elements, like the poor structure of digitalized utilities, the dearth of public awareness, load shedding, steeplechases in curricula advancement and contradictory conventional schooling in Pakistan. The successful enactment of "E-Learning" in Pakistan depends on these four factors;

- Institutes
- Curriculum
- Students
- Teachers

Role of Teachers in the Technological World

The arena of digital technology provides easy access to information. In the backdrop of Corona Virus Disease, 2019 (COVID - 19), educational institutions across the globe shifted their traditional classroom teaching to online teaching. Given this system, all the stakeholders viz a viz students, teachers and institutions are entrusted with a role to play. The instructors are supposed to play the role of facilitators and guide students to access useful information out of the big online data and to use it to their better advantage. In the digital technology-driven society, the instructors' are assigned the crucial duty of making the students learn how to critically evaluate huge stuff of online information to isolate fake from genuine and facts from propaganda. The teachers are also supposed to guide the students to identify

ethical dimensions of the big online data with respect to avoid its legal, social, psychological and political concerns.

The above-mentioned points take on learning in the broader perspective of today's technology-driven society to enable the students to understand how to learn than what to learn. Learning in such an environment tends to help students to find out the solution to the problems in hand and play an effective role in their respective fields.

"With the onset and proliferation of Information and Communication Technology (ICT), there is a growing demand that it be included in school education. It has become more of a fashion statement to have computers or multimedia in schools, the result being that in spite of its potential to make learning liberating; its implementation is often not more than cosmetic. It is also often touted as a panacea for the shortage of teachers. These are detrimental to the learning of the child. Teacher education needs to orient and sensitize the teacher to distinguish between critically useful, developmentally appropriate and the detrimental use of ICT. In a way, ICT can be imaginatively drawn upon for professional development and academic support of the pre-service and in-service teachers" (National Curriculum Framework on Teacher Education, 2010). The teachers in such an environment need to develop critical thinking aptitude in their students so that they can select online contents by differentiating between useful and useless and right and wrong. Imparting of such skills help promote students' decision making potentials and rationality. In this age of digital technology and e-learning, the instructors are bestowed with an important duty of properly equipping their students with the skills that meet the 21st-century market demand and requirements.

According to a report of National Policy on ICT in School Education (2012), the world is in dire need to develop and employ a variety of "useful applications, software tools, media and interactive devices" for promoting "creative, aesthetic, analytical and problem-solving abilities and sensitivities in students and teachers". In this domain, the instructors are required to reshape, rearrange and reschedule teaching contents, methods of the delivery system and evaluation of the learners' academic performance by making use of the latest information communication technology.

Opportunities and Challenges in Handling ICT

Online enrollment in courses has increased manifold as compared to traditional face to face classroom settings in higher education (Allen & Seaman, 2010). To concise, almost 97% of the well-populated degree-awarding institutions in America offer online courses (Gaytan, 2009). The widespread shifting of traditional education to online learning during Carona Virus, 2019 (COVID - 19) pandemic brings testimony to the importance of online enrolment. However, turning to E-learning requires a higher educational institution to revisit their fiscal plans (Schmidt, Hodge, & Tschida, 2014). Likewise, Wise & Rothman (2010) suggest cost-effectiveness of E-learning in several ways. According to them, infrastructure and different teaching aids are no more needed in the online education system. Young & Lewis (2008), specifically, see an opportunity in E-learning for those students who one way or the other could not afford traditional education in degree-awarding institutions. Chief, time-saving and easily accessible, distance education online programs prove to be a good example of the above proposition (Pontes & Pontes, 2012).

Most of the higher education institutions across the globe have opted for online delivery of education in the backdrop of the COVID -19. Shifting to E-learning, on the one hand, increases enrollment and on the other, helps these institutions to overcome financial constraints. However, the teacher, as one of the most important stack holders in teaching-learning process faces difficulties in the online delivery of education. According to Kugel (1993), "Most of what they have learned, they have learned from watching others and, as they start to do it on their own, they usually wish they had paid more attention to what their professors did as they taught".

The knowledge gap and the wealth gap, particularly in developing countries, contribute a lot to the newly emerged premises of the "digital divide" "digital inclusion and digital exclusion". As noted by Macleod (2000), the people who could not afford the technology fail to reap its benefits. The same holds true for those who do not have enough know-how of using the technology. Some of the other problems

linked with the use of technology and access to online learning system as mentioned by Nawaz & Qureshi (2010) include lack of responsiveness to the technology, lack of methodical approach to deal with technology, and lack of institutional patronage with regard to shifting of the traditional face to face teaching-learning process to virtual online delivery of education.

Despite the fact that developing countries face numerous problems with respect to the ICTs, they are producing a substantial number of a skilled and efficient network, software and hardware engineers who in turn contribute a lot to the national earnings (Krishan, 2006). According to Tubaishat et al (2006), socio-cultural differences in the developing countries are reckoned as some of the obstacles in the diffusion of the technology in length and breadth of their societies. Similarly, Mehra & Mital (2007) perceive that "experience, age, gender, accessibility to technology lack of educational technology and poor integration towards globalization" are the other hurdles in benefiting from E-learning. The online education system also confronts with issues such as the absence of government patronage and financial assistance, inefficiency in dealing with digital technology and lack of skilful trainers to teach the E-learning system. The online learning management system is also badly affected by the nonavailability of quality software and hardware that supposed to be pre-requisites of imparting standard education through information and communication technology. Some limitations on the part of students with regard to the online education system are observed to be lack of awareness in connection with the usefulness of the technology, affordability to acquire knowledge about the technology and buy computers and the will to use the technology for the purpose of imparting education. People, usually, misperceive E-learning. They believe that online learning requires the toughest schedules and rigid discipline. Schulmeiste (2008), however, considers online learning as very casual and requires less discipline as compared to traditional face to face classroom learning.

Digital Natives VS Digital Immigrants and E-Learning

Since the emergence of new information communication technology, the researchers in the field have been trying to measure its effects with reference to people, especially, the youth around the world. The people who make use of these technologies are seemed to be the key beneficiaries. That is why some of the researchers have laid emphasis on the nature of users instead of the nature of usage. People have been divided into different categories with respect to the use of digital technologies. Among such researchers, Prensky (2001) has used the expression of "digital natives" for the people born in the digital age. Those who were born before they were termed by Presenky as digital immigrants. Presenky found significant differences in the two generations with regard to the use of social networking media or digital media. The native is found to be very sharp and skilful in using the technology while digital immigrants are a bit alien to the technology and their thinking and approach in line with digital technologies is thought to be outdated.

While Lankshear and Bigum (1999) used the phrases "insiders" for digital natives and "newcomers" for digital immigrants, their differentiation between the two generations was not based on the differences in skills of using the technology, but they rather talked of the differences between the two generations in terms of their perception about the technology. The insiders believed that the world was the same; the only change they thought was the presence of technology. However, the newcomers termed the world to have been changed drastically just because of the diffusion of technology into it. Likewise, Rosen (2009) termed the people born the 1980s and 1990s as "Net Generation" whereas; Tapscott (2009) named them as "Net Geners". Rosen believes that net generation "spend their days immersed in a "media diet" accumulating a fulltime job plus overtime devouring entertainment, communication, and every form of electronic media. They are master multi-taskers, social networkers, electronic communicators and the first to rush to any new technology".

Some of the researchers in the area, however, believed that one could not necessarily become skilful in using digital technologies by virtue of his/her birth in the digital age. Kennedy (2010)

Judd, Dalgarnot & Waycott (2010) in a study on "Beyond Natives and Immigrants: Exploring Types of Net Generation Students" found that 45 percent of the respondents knew only the rudiments of digital technology. They were neither frequent users of new developing digital technologies nor that of

standardized web tools. The findings of their study revealed that 15 percent participants were skilful users who could make use of digital technologies effectively and much to their advantages. Although, digital natives are skilled users of technology, they, according to Salaway & Caruso (2007) very often confined themselves to the use of social networking and leave behind the use of other features like blogging. They further noted that a very few among the young people could be termed efficient users of information communication technologies. A few research studies in the field, such as that of Livingstone (2008), found the majority of these young people born in the digital age as a bit ignorant of the use of information communication technologies.

Since most of the teachers still come under the category of digital immigrants, so they are not willfully attracted by the technology and subsequent online education. Teachers in this age bracket feel hard to adapt to the new online education delivery system, but still, they are trying their best to contribute to the E-learning system, especially, in pandemic situations. On the other side, almost all students are counted as digital natives and net generation and are believed to be the potential beneficiaries of the technology since they are natural allies of the digital technology and are supposed to rush to its use. But still, they avoid taking full advantage of the new online learning system. So far as education institutions in developing countries like Pakistan are concerned, they lack physical facilities for online education. Universities have been equipped with the required infrastructure for an online learning management system, but some of the colleges and most of the high and primary schools in Pakistan lack these basic facilities.

Suggestions

The information and communication technology has penetrated deep into human life. It has affected almost every walk of life across the world. The technology has developed a deep link with education as one of the most important fields of life. Education institutions, teaching-learning process, the students and the teachers have been changed by this new technology. Since the use of technology has become part and parcel of the teaching-learning process, all stakeholders need to adapt to technology. The education institutions are required to be fully equipped with the infrastructure of the technology. There must have digital labs equipped with computers, laptops and internet connection. The students need to be trained by skilled trainers in the use of technology to their better advantage.

Likewise, it is crucial for the teachers to be at ease in using the technology well for teaching-learning purpose. While delivering their lecture material online, the teachers need to keep in mind the individual differences. To avoid any apprehension with respect to the use of technology for education purpose, it is apt for the teachers to do such activities collectively and then carry them on for individual lecture delivery. The lecture material should have contents that develop critical thinking and problem-solving skills. For this purpose, the instructors can make use of network resources such as some YouTube channels for relevant videos and talks.

The teachers with a lack of skills and experience in handling the technology must spend some time for practice to get necessary know-how and feel comfortable in using the same technology.

The instructors need to consider this digital technology as a teaching aid and resource material normally used in traditional classroom settings. For instance, teachers should better use short videos to students with visuals for clarifying various important concepts and bringing relevancy to their respective lessons. Instructors should make use of some online resources for teaching learners about raising social realization and awareness with regard to certain causes, movements, and policies. Students should also be encouraged to start blogging in connection with various social, cultural and economic issues of the society.

In service, technical training needs to be imparted to teachers after regular intervals to bring them at par with updated knowledge of the technology. Teachers' attitudes and interests in learning the skills of digital teaching technology should be positive enough to optimize the fruitful results of these training sessions.

In the same manner, while preparing contents for online delivery, policymakers need to ensure the participation of the teachers in the process of digital content selection. The teacher should have enough

confidence to design material of their choice for digital transformation and share the same with other instructors involved in the digital teaching-learning process. Similarly, the teachers need to be able to use all available digital resources as teaching aids for online classes.

On the way to becoming part of the E-learning system, mentoring proves to be of some help in acquiring the required skills. To equip a maximum number of teachers with the required skills, an instructor among the colleagues with sufficient know-how, proficiency and skills to use the technology needs to be selected as a mentor. In case of nonavailability of such a mentor among the colleagues, he/she could be hired from outside of the institution. The digital learning management system should be considered as a useful innovation in the teaching-learning domain. The system should not be taken as a barrier to teaches' career. Will to do and hard work tends to turn this challenge into an opportunity.

Some of the international training institutes such as NIIT run the Pedagogical ICT Certification Training Programme should be engaged, and it may be made mandatory for all teachers to enrol in the program for certification. Likewise, the teachers should make use of the "Learning Management System" equipped with MOODLE for the digital teaching-learning process. Most of the developing countries, including Pakistan, made use of the mentioned technology for online delivery of education during the pandemic, COVID-19. The management should arrange seminars, workshops and training sessions with regard to the "MOODLE Learning Management System" be provided teachers with necessary skills.

Discussion and Conclusion

Some of the researchers (Prensky, 2001; Rosen, 2009; & Tapscott, 2009) have laid emphasis on the nature of users instead of the nature of usage. People have been divided into different categories with respect to the use of digital technologies. Among such researchers, Prensky (2001) has used the expressions of "digital natives" for the people born in the digital age and digital immigrants for those born latter. Presenky found significant differences in the two generations with regard to the use of social networking media or digital media. The native is found to be very sharp and skilful in using the technology while digital immigrants are a bit alien to the technology and their thinking and approach in line with digital technologies is thought to be outdated. Likewise, Rosen (2009) termed the people born the 1980s and 1990s as "Net Generation" whereas; Tapscott (2009) named them as "Net Geners". Rosen believes that net generations are master multi-taskers, social networkers, electronic communicators and the first to rush to any new technology".

Here goes application of the knowledge gap when it comes into reference with E-learning through the Learning Management System in Pakistan during COVID-19. After becoming part of the system as instructors, the researchers observed that the students most of whom are digital natives failed to properly benefit from the technology as compared to their teachers who are considered as a digital immigrant. The teachers with more knowledge after having acquired the technology faster than their students took advantage of the new digital technology in a better way Tichenor, Donohu, and Olien (1970). In the same manner, the proposition of individual differences played a role with regard to reaping fruits of digital technology. Some of the students were observed to supersede their teachers in making good use of the digital teaching learning technology.

The premises of "digital divide" and "digital inclusion and digital exclusion" are also made part of the cited literature. In developing countries like Pakistan, inefficiency in the online learning management system tells a bit different story. Major reasons for lack of access to the technology on the part of both the teachers and the learner are reckoned as nonavailability of electricity, weak mobile communication signals, particularly, in rural areas of the country coupled with unaffordability to buy Smart Phones, Laptops or Computers, and the required know-how of the technology. Unfortunate enough, for most of the students, the above reasons as barries to the E-learning system were observed not as much serious as the 'will' to actively participate in the online teaching-learning activities.

It is concluded that the diffusion of innovations in the form of ICT in developing countries widened the knowledge gap, given the uneven distribution of wealth and access to technology. This knowledge gap, in turn, contributed to the concepts of the digital divide and digital inclusion and digital exclusion. When the premise came across with the new trend of E-learning, particularly, in the backdrop of the

COVID-19 in Pakistan, the two stakeholders; the students and the teachers brought testimony to the fact. Almost 25% of the teacher's community and more than 30% of the students turned their back to the system and could not utilize it properly.

Since most of the teachers still come under the category of digital immigrants, so they are not willfully attracted by the technology and subsequent online education. Teachers in this age bracket feel hard to adapt to the new online education delivery system, but still, they are trying their best to contribute to the E-learning system, especially, in pandemic situations. On the other side, almost all students are counted as digital natives and net generation and are believed to be the potential beneficiaries of the technology since they are natural allies of the digital technology and are supposed to rush to its use. But still, they avoid taking full advantage of the new online learning system. So far as education institutions in developing countries like Pakistan are concerned, they lack physical facilities for online education. Universities have been equipped with the required infrastructure for an online learning management system, but some of the colleges and most of the high and primary schools in Pakistan lack these basic facilities.

To fill this gap, developing countries, including Pakistan, should provide basic infrastructures in the institutions and make arrangements for technical training of the students and teachers with respect to the digital teaching-learning technology.

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