Journey towards E-Learning in Pakistan: A Systematic Review

Nabia Luqman Siddiquei
Ph.D. Scholar
Beacon House National University, Pakistan
aiban_20@hotmail.com

Dr. Ruhi Khalid
Professor
Beacon House National University, Pakistan

Abstract

The 21st century has witnessed the advent of Information and communication technology (ICT) as an imperative medium of education to refurbish education by means of efficient, effective and latest way i.e. e-learning. The intention of introducing e-learning in modern world is to open innovation vistas of learning in education and replacing face to face traditional classrooms. Consequently, researches are becoming progressively more interested to observe the proliferation of e-learning across the country. This review intends to present information of the various findings regarding cumulative research work in the domain of e-learning so far. Reviews of nearly 70 articles published in electronic journals in Pakistan and are recognized by HEC during the time period of 2010-2019. The analysis of documented researches reveal that majority of the research literature related to e-learning during early 2010 to late 2014 were primarily focused on computer usage, implementation of Information and Communication Technologies (ICTs) and adoption of e-learning models using research designs such as descriptive, survey and mixed method research whereas the trend shifted towards distance education and e-learning after this time period. The literature review witnessed many researches during 2015 and 2016 after the growing interest of students towards this mode of education. However, the researchers have started giving immense importance to e-learning as the researches begin to publish in social sciences literature in Pakistan during 2017. As far as 2018-2019 is concerned, the relevance and reliance on e-learning have augmented as compared to past because e-learning has broadened its roots and scope whereas researchers show continued interest in this field.

Keywords: *e-learning, Information and Communication Technologies (ICT), Higher Education, f2f Classroom.*

1.   Introduction

The outbreak of pandemic crisis (COVID-19), throughout the world, has coerced towards drastic changes in social interaction. In this regard, the educational institutions have also not been immune. The significant concern for educators, in this unprecedented time, is only to adapt the emerging reality. This new reality that arose was unpopulated as well as un-peopled educational settings (Blumenstyk, 2020). This situation has created an enormous challenge to the educational

institutions all around the globe with an immediate pause to all educational activities. As pandemic safety measures involve "physical or social distancing" which in other words lessen social and personal contact and thus curtail the community transmission which could develop disease rapidly in dense social networks such as the university campus (Weeden &Small, 2020). It is precisely said that extraordinary times requires extraordinary measures, therefore, changing trends of traditional education in the form of e-learning across the globe has been emerged as an alternative response to the pandemic crisis, marking the speedy conversion of face-to-face classes to e-learning systems(Murphy, 2020).

1.1.   Current Status of E-Learning: A Perspective of Pakistan

In this regard, Pakistan, being multi-ethnic, multilingual emerging country and 2nd largest economy in South Asia has experienced an incredible development in ICTs and has paved the way for e-learning for its digital natives (Hussain, Wang & Rahim, 2013). From the time of inception, Pakistan experiences various types of socio-economic problems because it is a developing nation with rapidly growing population. The main cause of these problems is the lack of education i.e. illiteracy (Khalid & Khan, 2006). Furthermore, education is considered as a significant element of national development; therefore, in the Constitution of Pakistan 1973, the promotion of educational facilities has emphasized on the associating units of Pakistan (Khalid & Khan, 2006). The educational expenditure of our country is less than 4% as compared to other developing countries (Green, 2008). The census was conducted for the first time in 21st century by Pakistan Bureau of Statistics which estimates the population at 19 crore whereas 64% of population reside in rural areas characterized by insufficient infrastructure and inadequate resources. In addition, the problem gets worsened due to the abysmal literacy rate which is of 56% (Malik, et al., 2015).

In view of the above scenario, it is evident that educational facts of Pakistan are unfortunate whereas e-learning is at its rudimentary stage in higher education institutes (HEIs) regarding its growth and execution. In this reference, the Government of Pakistan (GoP) is putting their efforts to outreach quality education to every part the country. Furthermore, the Ministry of Education, akin to various South Asian countries have initiated distance education program known as Allama Iqbal Open University (AIOU) and Virtual University of Pakistan (VUP). Working on the same lines, Higher Education Commission (HEC) has taken many noteworthy initiatives by the

introduction of Online Lecturing and Net-Meeting via IP-Based Video Conferencing System, The National Digital Library and Pakistan Education and Research Network (PERN) (HEC, 2008).In conclusion, the implementation of e-learning in Pakistan is a big challenge, however, HEC in this regard is performing pivotal role by taking worth mentioning initiative.

Thus, educational psychologists became increasingly interested in studying how the rapidly changing educational system from face to face learning to e-learning has affected the research work done in the domain of e-learning so far. This article provides a review of almost 52 research articles published in major peer-reviewed journals from 2010-2019.

1.2. Objectives of Study

The aim of this article was to review all the indigenous articles that investigated the status of e-learning in Pakistan, utilization of modern technologies for educational purposes and the literature gap that exist with the purpose of identifying directions for future research.

2. Method

The literature review in this article is a descriptive analysis of empirical studies conducted in Pakistan on e-learning or distance learning since 2010 to date. As this was the time, when significant work in the domain of e-learning and distance education in general was started because two universities were established based on distance education and e-learning at that time as discussed above.

2.1. Data Collection

All the major journals of published electronically in Pakistan and are recognized by HEC consisted the data sources from where articles for this study regarding e-learning or distance learning were obtained. These journals includes|: Pakistan Journal of Distance and Online Learning (PJDOL), Pakistan Journal of Education (PJE), Journal of Research in Social Sciences (JRSS), Journal of Distance Education & Research (JDER), Secondary Education Journal (SEJ), The Dialogue, Gomal University Journal of Research, Pakistan Journal of Medical Sciences (PJMS), Bulletin of Education and research, Khyber Medical University Journal (KMUJ) and International Journal of Distance Education and E-Learning (IJDEEL). The researches were searched from 2010-2019.

2.2. Study Selection /Sample

A total of 70 published articles were reviewed from the above-mentioned journals. Articles not directly related to e-learning or distance learning domain was excluded from the analysis. The resulting 52 articles were included in the study for in-depth analysis. There was no constraint of study design and chosen articles could be of any design. Articles selected for the present study was of different nature including survey, cross-sectional designs, correlational, qualitative and mixed designs.

2.3. Data Extraction

From the selected articles, information related to the purpose of the study, study year, study design, sample and significant results were extracted. Results are presented in the result section in tabular format. Two readers independently extracted data and evaluated validity.

3. Results

Analysis of the documented researches shows that the research trends in e-learning is in the rudimentary stages regarding its development in Pakistan (Bhuasiri, Xaymoungkhoun, Zo, Rho, Ciganek, 2012; Nawaz, 2013; Kundi& Nawaz, 2014). Additionally, e-learning is still at infancy stage in many developing countries including Pakistan (Grönlund& Islam, 2010) and the dearth of research publications has continued to be a hitch (Head, Lockee, & Oliver, 2002).

Table 1. *Research Trends During Early 2010 to 2014*

Sr no	Author and Year	Title	Design	Sample	Results
1	Jawaid, Hafeez, Khan, and Khalique(2013)	Computer usage and attitudes towards e-learning among first-year medical students in Karachi, Pakistan.	Survey (questionnaire)	N=436 medical students (males=360, females=76)	Majority students have positive attitudes about e-learning and agreed that it should play a role in learning while few students believed that e-learning is capable to substitute lectures.

| 2 | Majoka, Fazal and Khan (2013). | Implementation of information and communication technologies (ICTs) in education course: A case from teacher education institutions in Pakistan. | Mixed method research design (interviews and questionnaire) | N=240 (teacher=40 & students= 200) | | Results revealed that to overcome load shedding issue, teacher should use laptops in order to implement the course. It was also found that those teachers are proved effective who uses course guide. |
| 3 | Kanwal and Rehman (2014) | E-learning adoption model: A case study of Pakistan (2014) | Descriptive | | | It was found that the e-learning should based on Technology Acceptance Model (TAM) which consider e-learners as the central users of the e-learning and e-learners' personal, social and system characteristics should be explained to an adoption model. |

Table 2. *Research Trends During early 2015 to 2016*

Sr no	Author and Year	Title	Design	Sample	Scale used	Results
1	Ajmal, Tabassum and Hussain (2015)	Comparative analysis of student support services of the distance universities of Pakistan	Cross sectional design	N=200 students from each university	Self-developed questionnaire	Results found computer labs and system should be given to students in AIOU and VU, also arranged workshops for students.

2	Hafeez, and Huma (2015)	Development of open and distance learning model for the revival of destroyed education system in disaster struck areas.	Descriptive	N=5,000 (Students of 51 colleges of Azad Jammu and Kashmir and Khyber Pakhtunkhwa)	Self-developed questionnaire	It was explored that AIOU could play an important role in rehabilitation of the education system because of its exclusive approach in affected areas via the optimal use of technology since it is the essential feature of distance education.
3	Bilal, Rizvi and Khattak (2015)	Theoretical knowledge and professional practice in teacher education: Gaps at application level in distance education Pakistan.	Quantitative	N=400 (Student teachers and teacher educators)	Self-developed questionnaire	A significant difference was found among the student perception of teachers and observation records of the researcher.
4	Rizvi, Khan and Tahirkheli (2016)	Relationship among Distance Learner's Interactions and Success	Quantitative	N=22 (Ms. Leading to P.hD and M.Phil) both male and female	Self-developed questionnaire	A relationship exists between distance education and learner-instructor interaction while the former was least predictor of success in distance education.
5	Sultana (2016)	Social Media as Best Practices for Optimizing the Learning at Allama Iqbal Open University.	Document analysis and questionnaire	N=250 (200 students and 50 tutors)	Self-developed questionnaire	It was concluded that face book was an efficient medium and student should take benefit from it. and face book is used by students of AIOU extensively.

6	Shah and Ahmed (2016)	Effectiveness of Computer Simulation in Teaching Physics in ODL.	Pretest-Posttest design	N=40 (20 students included in group A and 20 students in group B)		Significant difference was found between academic achievements of students studying via simulation method and those who are studying via traditional lecture method.
7	Hussain and Farooq (2016)	Practices and barriers in computer technology skills: Portraying student teachers of open and distance learning	Survey (questionnaire and interview)	N=150 (student-teachers of B.Ed program)	Computer Technology Skills Utilization Questionnaire	There is an association between professional growth& teachers in open and distance learning. Results found that most of teachers-students were not able to use MS Word, excel &PPT required for professional growth.
8	Khan (2016)	Relationship between Student Satisfaction and Learning Style of Distance Learner: A Case Study of AIOU, Islamabad.	Correlational	N=351 (Both male and female students)	Satisfaction Survey	Student satisfaction is related positively with learning style apart from avoidant learning style which was correlated negatively.
9	Sultana, Ambreen and Afzal (2016)	Quality of Teacher Education Program of Distance Mode	Descriptive	N= 250 (200 students and 50 tutors of M.Ed/M.A education)		Most of the students are not satisfied by the curriculum quality, evaluation system, delivery method & support services provided.
10	Noreen and Hafeez (2016)	Challenges of digital learning for distance universities in Pakistan	Qualitative (semi-structured interviews)	N=35 (31 academics from the faculties of Education; 2		It was found that learning resources, development of e-learning material,

				ICT directors, 2 libraries in charges)		inaccessibility of digital tools and ICT professionals are the identified challenges for distance learning.
11	Shah (2016)	Perception of Students about Tutorials in Open and Distance Learning at Allama Iqbal Open University. Pakistan	Survey	N=12000 (students from Peshawar and Rawalpindi regions of the AIOU	Self-developed questionnaire	It was found that students believed that lectures can assist in building knowledge and develop abilities among students.
12	Iqbal, Shafiq and Iqbal (2016).	Perceptions of undergraduate dental students towards e-Learning in Lahore Medical and Dental College	Cross-sectional	N=280 students (75= 1st year; 80= 2nd year class, 55= 3rd year and 70= 4th year class)	Adapted questionnaire	It was found that students perceive the e-learning in a different way and no difference was found in the perception of e-learning related gender.
13	Khan and Iqbal (2016)	Effects of Learning Style on Achievement of Distance Learners	Correlational	N=351 (both males and female students)	Grasha-Riechmann Student Learning Styles Scale	Learning style & achievement are not correlated, and negative significant relationship was found between avoidant learning style &achievement.
14	Bashir (2016)	Why distance learning programs fail to bring quality: A case study of an online distance learning program in Pakistan	Qualitative (Interviews, focus group and document reviews)	Interviews= 61; focus group=15; document review=several		Results showed that policies at top leadership, middle &lower administrative level are inconsistent while communication gap exists.
15	Rizvi, Naqvi and	Cultural diversity in distance education and problems	Qualitative (document analysis)			It was found that multiculturalism has many dimensions,

	Batool (2016)					and it's valuable for students, teachers and educational organization that are facing diverse challenges.
16	Ali and Mahmood (2016)	Problems faced by tutors in distance education system at regional level	Descriptive	N=250 (tutors of B.A. program)	Self-developed questionnaire	The findings showed that tutors have faced problems such as facility of transport to study centers, adequate training & low remuneration of tutors.
17	Iqbal, Shakoor and Nabi (2016)	An analysis of teaching practice workshop for students of distance education on AIOU	Descriptive (Survey)	N=150 (80 B. Ed and 70 PTC workshop students)	Self-developed questionnaire	It was found that distance students require more attention due to their distance from tutors as compared to traditional students.
18	Ajmal and Shah (2016)	Perception of tutors about tutorials in open and distance learning (A Case study of AIOU)	Descriptive (Survey)	N=150 tutors	Self-developed questionnaire	Mostly tutors believed that tutorials are important for knowledge& skills development among students.
19	Ajmal (2016)	Instructional design for blended teaching learning process, problems and prospects: A case study of Allama Iqbal Open University. Pakistan	Descriptive	N= 120 faculty members of AIOU	Self-developed questionnaire	It was concluded that adequate assessment is required for developing course outlines. Courses should have enough pictures &illustrations.
20	Jabeen (2016)	Perceived Communal Benefits, Conceivable Risks and Potential	Quantitative	N=80 e-educators (40 from public sector organization	Adopted from Okoye (2012) study "Social	Significant difference was found between e-educators (public and private institutes)

		Implications: Opinion of e-Educators		and 40 from private organization)	Implications of ICT"	regarding perceived communal benefits.
21	Zafar (2016)	Effectiveness of Online Discussions in Developing Higher Order Thinking Skills	Quantitative	N=78 (both male and female students)	Renda-Tanali's (2012) questionnaire (Adopted)	It was found that GDB enhance students' knowledge related to subject and assist in sharpen their analytical skills.
22	Sherazi and Jabeen (2016)	Motivational Goal Orientation and Learning Strategies of E-learners	Survey	N= 400 students	Motivational Strategies for Learning' questionnaire	Strong correlation exists between intrinsic motivation and meta-cognitive strategies in e-learning environment.

Table 3. *Research Trends During 2017*

Sr no	Author and Year	Title	Design	Sample	Scale used	Results
1	Khan (2017)	Expanding Horizons: Contribution of an Online Community in the Professional Learning of Teachers in Pakistan	Qualitative (in-depth interviews, field notes, documents and researcher memos)	N= 06 female teachers		It was found that teachers discussed their concerns regarding teaching around the globe via ECN platform in Pakistan.
2	Nasir (2017)	E-Learning as a Means of Knowledge and Learning at Higher Education Level	Descriptive	N= 102 students (56 from UAJK and 46 from IIUI)	Self-developed questionnaire	Results revealed that higher education students are aware of e-learning, yet there is a need to develop the access level to maximum resources.
3	Arshad, Zamir and	Emerging technological	Theoretical			It was identified from literature

	Bhatti (2017)	trends in distance education				review that technological trends regarding e-learning includes ICT, asynchronous& synchronous media, hybrid& mobile learning, LMS, social networks, digital libraries.
4	Shahzad (2017)	A literary review on distance education in Pakistan and future possibilities	Theoretical			It was found that students like to use internet technology for higher studies& interaction with peers and teachers.
5	Mahmood, Ali and Haider (2017)	Diversity in Study Habits of Formal and Non-Formal Students: A Case of F.G Education College and AIOU Islamabad	Survey	N= 500 (formal students=100; non-formal students= 400)	Study Habits Questionnaire (SHQ)	It was found that formal students plan their study schedule & pursue it, &more capable to take & prepare notes in their words as compared to non-formal students.
6	Mir (2017)	Design and development of online student support system	Theoretical			It was resulted that student support system plays a significant role in online institutions.
7	Solangi, Ahmed, Hussain and	Exploring the potential of virtual learning in an open and distance	Survey	N= 101 (male=59; female=42)	Self-developed questionnaire	The survey results showed that students have requisite level of skills to precipitate

	Khattak (2017)	learning (ODL) environment				in different tasks of virtual learning or e-internship.
8	Sughra (2017)	An analysis of perceptions of female students regarding the promotion of distance mode learning in Pakistan	Descriptive (Survey)	N=270 students (152 female and 118 male students)		Mostly female students agreed with present practices and promotion of distance education.
9	Arshad and Hina (2017)	Availability and problems relating to the accessibility of information and communication technologies (ICT's) among university students	Descriptive	N=294 (students of two public sector universities)	Self-developed questionnaire	It was also showed that mostly students are facing problems related to shortage of electricity, lack of projectors, slow internet speed and few websites not available within university.
10	Iqbal, Khan and Malik (2017)	Mobile phone usage and students' perception towards m-learning: A case of undergraduate students in Pakistan	Survey	N=320 (males=186 and females= 134)	Self-developed questionnaire	It was found that student's attitude towards m-learning is positive however; the perceptions of Arts and Engineering students were found significantly different from those of medical and business students.
11	Javed and Mahmood (2017)	Effect of cable TV on educational performance of distance learners	Descriptive	N=90 (36 were males and 54 were females)	Self-constructed questionnaire	There was a positive effect of cable TV on distance student's performance.

12	Hina, Arshad, Kashmeeri and Mehar (2017)	Demographic diversity affecting teacher's perceptions related to quality of research produced in distance education	Mixed design	N=66 teachers (30 from public and 36 from private sector).	Self-developed questionnaire (adopted from Obiageil crystal oluka, shaofaNie,Yi sun, 2014).	No significant difference was found in the perceptions of teachers related to research quality based on gender, sector, age, academic-professional qualification and teaching experience.
13	Shahid and Mehmood (2017)	Reflective practice and action research: A holistic view in distance education teaching learning environment	Quantitative (Survey)	N=65 teachers (serving in four faculties)	Self-constructed questionnaire	It was concluded that teachers are aware of significant role of process and implementation of action research in distance education.
14	Bhatti, Shamim and Mukhtar (2017)	Investigating the perspectives of TEFLers about distance learning: A case study	Descriptive (Survey)	N=70 teachers of both genders	Self-constructed questionnaire	It was revealed that students don't have adequate knowledge about objectives of programs in distance education.
15	Gul, Ramzan and Batool (2017)	The efficacy of e-learning technologies in higher education: students' perspective	Survey	N=535 (both enders are included)	Adopted questionnaire	It was found that VU students'access VUTV channel less frequently because of difference in time while content available on DVD and internet is more preferable as it is accessible at any time.

Table 4. *Research Trends during 2018 and Early 2019*

Sr no	Author and Year	Title	Design	Sample	Scale used	Results
1	Qadri (2018)	Quality assurance toolkit for open & distance learning institutes: A glimpse of e-learners' perspective	Qualitative (focus group)			It was showed that e-learners are significant element in open and distance education. Numerous factors are identified for quality assurance.
2	Farid, Qadir, Ahmed and Khattak (2018)	Critical success factors of e-learning systems: A quality perspective	Quantitative	N=97 (Male=41 and Female= 56)		It was found that there are number of critical factors that are responsible for e-learning system quality.
3	Naseer and Majid (2018)	Prediction of achievements of distance learners from locus of control	Survey	N=1513 (Males=391; Females=1182)	Nowicki-Duke Locus of Control Scale	It was explored that distance learners with LOC internal have high academic achievement.
4	Hussain (2018)	Preferences of learning styles & approaches of English language teachers enrolled in distance education program	Quantitative (Survey)	N=78 (43 were male and 35 were female)	Self-developed pre-coded survey questionnaire founded on Entwistle (2001)	No significant difference was found regarding gender based on learning approaches.
5	Samiullah and Qadeer (2018)	Effect of communicative approach on proposal writing skills of distance learners at AIOU	Pre-test post-test non-equivalent control group	N=60 M. Phil scholars		No significant effect of communicative approach was found on synopsis writing of 2 groups' i.e. experimental and control group.
6	Jumani, Malik and	Challenges and successes of	Mixed method	N=146 (126 are students and 40are teachers)		It was found that students and teachers

	Akram (2018)	blended learning in directorate of distance education, IIIUI	(Survey and interviews)			are satisfied with blended learning.
7	Nisar (2018)	Students' attitude towards the use of mobile telephone technology in distance education	Survey	N=355 (students are 333 and academics are 22)		Supportive student attitude was found for utilizing mobile technology, yet not accepted by all age groups.
8	Ajmal and Rafique (2018)	Relationship between academic self-concept and academic achievement of distance learners	Cross-sectional	N=800 (427 learners from M.Ed program and 373 learners from B.Ed)	Academic self-concept scale	Strong relationship exists between distance learners regarding academic self-concept and achievement.
9	Akhter and Mahmood (2018)	Study of the Impact of Online Education on Student's learning at University Level in Pakistan	Descriptive	N=90 students (males=58 and females=32)	Self-developed questionnaire	It was suggested that efforts must be made to enhance online expertise that promotes dynamic learning.
10	Masaud, Awan and Ali (2018)	Role of Allama Iqbal Open University in promoting education among rural women in southern Punjab.	Quantitative (Survey)	N= 485 (308 female students and 177 tutors)	Self-developed questionnaire	It was explored that AIOU played an important role to promote education among females' students in rural areas.
11	Hussain and Sajjad (2018)	Role of distance education in nurturing learning pursuance among learners: A qualitative study	Qualitative (Interviews)	N=38 of both genders		The only mode to promote education among learners is distance education due to its ease of access, objectivity, litheness and cost-effectiveness.
12	Hussain,	Prospects of virtual education in Pakistan:	Survey	N=351 virtual learners	Self-developed questionnaire	Virtual education was found to be preferable medium of education

Hussain and Ramzan (2019)	opportunities and challenges		due to slogan of education at doorstep and education for all.

4. Discussion

4.1. Research Trends during early 2010 to late 2014

Majority of the research literature related to e-learning from early 2010 to late 2014 was focused on implementation of Information and Communication Technological (ICT) tools in educational sector, the impact of distance education on the performance of students studying in distance education institution and Computer usage and attitudes towards e-learning (Majoka, Fazal & Khan, 2013; Kanwal &Rehman, 2014; Jawaid, Hafeez, Khan, &Khalique, 2013). The use of ICTs since 1980 is being appreciated by the government as an efficient tool for the development and expansion of education (Majoka, Fazal & Khan, 2013). In this regard, Majoka, Fazal & Khan, (2013) revealed that teachers should be facilitated with the ICT tools in order to develop a collaborative approach of learning for learners. They have also concluded that there is an imperative role of teachers skilled with ICTs (Majoka, Fazal & Khan, 2013).

Similarly, Kanwal & Rehman (2014) contributed that the significant role of ICT in education has benefited developed countries in their economy as well as by amalgamating ICT into their business and education. However, Kanwal & Rehman (2014) introduced conceptual model of e-learning adoption based on TAM in which learners are regarded as focal users of e-learning medium. Furthermore, Jawaid, Hafeez, Khan, & Khalique (2013), tried to assess student's attitudes and experience of e-learning in their medical education. Thus, it could be concluded that e-learning implementation faces technical as well as organizational challenges and might be dealt by organizing e-learning courses for both students and faculty members, which will cater to their specific needs.

4.2. Research Trends during 2015 and 2016

The review of related literature reveals that there is a scarcity of research findings regarding e-learning during 2010-2014 especially in Pakistan, however, the research trend shifted towards distance education and e-learning after this time period. The major focus of researchers' during 2015 was on Comparative analysis of student support services of the distance universities of Pakistan (Ajmal, Tabassum & Hussain, 2015) in addition to developing open and distance learning

model for the revival of destroyed education system in disaster struck areas (Hafeez & Huma, 2015) as well as theoretical knowledge and professional practice in teacher education (Bilal, Rizvi & Shah, 2015) have also been studied.

Results of these researches explored that distance education has evolved over the years in Pakistan from basic correspondence courses via postal service in the form of distance education to the online courses using internet (Ajmal, Tabassum & Hussain, 2015). In another study, Hafeez & Huma (2015) discovered role of AIOU in opening avenues of distance education in Pakistan and identified the extent of the problem faced by education sector in our country. In addition, the gaps in distance education in Pakistan regarding theoretical knowledge and professional practice have been investigated (Bilal, Rizvi & Shah, 2015). Researches (Sultana, Ambreen, & Afzal , 2016; Ajmal & Shah, 2016) also showed that most of the students are not satisfied with the curriculum quality, examination system, content delivery and student services, but workshop is the only effective component for improving knowledge and professional skills among students.

Few researches (Rizvi, Khan, & Tahirkheli, 2016; Zafar, 2016; Sherazi and Jabeen, 2016) during 2016 has focused their attention from administrative part of e-learning to student perspective. In this regard, it was established that there is a significant relationship between motivation and meta cognitive strategies utilized by the learners in e-learning settings (Zafar, 2016). On the other hand, Sherazi & Jabeen (2016) explored that student subject knowledge could be enhanced with the help of GDB discussions and assist in enhancing learners' analytical skills. Furthermore, many researchers (e.g. Hussain & Farooq, 2016; Noreen & Hafeez, 2016; Bashir, 2016) explored the challenges of e-learning and revealed that many of the students in e-learning are not competent to work on internet for their learning purpose. Similarly, e-learning have faced diverse issues from academics training to e-content development and inaccessibility of technology to costs incurred (Noreen & Hafeez, 2016).

With reference to perception of students towards e-learning illustrates that learners' perception of e-learning regarding its usefulness varies as they move in their study program whereas no significant gender difference was found in this regard (Shafiq & Iqbal, 2016). Very few researches have also attempted to study the cultural diversity in distance education which found that there are three types of diversity in an educational system (Rizvi, Naqvi & Batool, 2016). Moreover, some researches (Khan &Iqbal, 2016; Jabeen, 2016) conducted to investigate

student variables like satisfaction, learning styles and their academic achievement. It was found that no relationship exists between learning styles and achievement (Khan & Iqbal, 2016).

4.3.   Research Trends during 2017

The researches started gaining popularity and appearing in social sciences literature in Pakistan during 2017. This was the time, as literature review also suggests when researchers fully began to realize the importance of integrating e-learning in educational system of Pakistan and believes that it has enormous impact on social, cultural and economic concerns dwelling within a country. Researchers, distance learners, academicians and psychologists began to understand the gravity of this issue with the intention of encouragement and promote e-learning initiatives across the country. This has not only encouraged the attention of researcher towards this emerging technology as well as different domains of e-learning have begun to investigate which have been neglected before this time.

Results of these researches indicated that with the development of technology, distance education is taking a new form and it opens new avenues of research in a limited time(Arshad, Zamir & Bhatti, 2017). Researches revealed that emerging trends of e-learning appeared to play an effective role in the teaching and learning process (Khan, 2017). Moreover, the role of Pakistani teacher in the developing trend of e-learning is also served as a benchmark for enhancing its significance(Khan, 2017). On the other hand, learners are happy and open to welcome technology in their personal, professional and social lives and they want to equip higher education with technological tools (Shahzad, 2017) because students are very much contented from the online universities where they are at a distant geographically from their teachers, class mates and most importantly from administration for any administrative concern (Mir, 2017).

With reference to student participation in e-learning researches revealed that both male and female have enough ICT skills whether they came from remote areas of Pakistan (Solangi, Ahmed, Hussain &Khattak, 2017). In fact, their involvement in regular academic activities is quite rare (Nasir, 2017).Moreover, e-learners have equal ability of written communication and timely complete their assigned task as compared to conventional students (Mahmood, Ali & Haider, 2017). Likewise, the lectures are easy to access for e-learners at anytime and anywhere as the content is available both in the form of DVD and on the internet (Gul, Ramzan & Batool, 2017). However, few studies (e.g. Arshad &Hina, 2017; Bhatti, Shamim& Mukhtar, 2017) explored that

most of the e-learners are also experiencing problems include electricity shortage, slow internet, lack of technical staff, insufficient computers, unavailability of Wi-fi to remote areas, unavailability of lectures in electronic forms and lack of virtual conference rooms (Arshad & Hina, 2017). With the reference to teachers' perception regarding quality of research produced in distance education, few researches (e.g. Hina, Arshad, Kashmeeri& Mehar, 2017) explored that there was no significant difference based on gender, age, qualification (academic & professional) in their perception for research quality. On similar lines, another study (Shahid & Mehmood, 2017) was conducted taking into consideration perception of teachers working in distance education concerning reflective practice and action research.

4.4. Research Trends during 2018 and early 2019

The same revolutionized and revitalized research trends of e-learning have broadened its roots and scope whereas researchers show continued interest in this field. Hence, the scope of research regarding e-learning has also witnessed during 2018 and early 2019. In this context, few researchers (e.g. Farid, Qadir, Ahmed & Khattak, 2018; Jumani, Malik &Akram, 2018; Hussain, Hussain & Ramzan, 2019) begin to focus their attention toward critical success factor which include lack of learning material in local languages, perceived usefulness, quality of education, insufficient instructional design, software quality and information quality have been appeared as e-learning success factor (Farid, Qadir, Ahmed & Khattak, 2018).

However, researches to explore the certain other variables of e-learners regarding their learning styles (Hussain, 2018), locus of control (Naseer & Majid, 2018)students attitude towards mobile phone technology in e-learning (Nisar, 2018), academic self-concept and academic achievement (Ajmal & Rafique, 2018) have also been witnessed during 2018 and 2019 which shows that e-learners are now becoming focus of interest for researchers and scholars.

In addition to e-learning from e-learners perspective, few researches have also attempted to study quality assurance (Qadri, 2018), impact of online education on learning (Akhter & Mahmood, 2018) and role of AIOU for promotion of education among rural women (Masaud, Awan & Ali, 2018) and role of distance education in nurturing learning pursuance among learners (Hussain & Sajjad, 2018). Additionally, it has also been suggested that significant efforts are needed to enhance and upbringing of e-learning that consequently will help to promote e-learning and open vistas for learners (Akhter & Mahmood, 2018). Thus, one can finally see how

researchers, academicians and scholars started by studying Information and Communication Technology (ICT) after exploring in detail its role, usage, challenges and future prospects have finally come to focus their attention towards e-learning in particular which is the most pertinent and relevant technology for today's world.

5. Conclusion

Review of research studies carried out from 2010 to 2019 submitted in different journals of Pakistan in the field of e-learning and distance education has been done in the present study which shows that the research trend in the domain of e-learning has significantly increased over a period of time fueled by Internet connection, latest ICT tools and establishment of online university. E-learning has developed from 19th century correspondence programs to the 21stcentury's vibrant and well-designed e-learning university.

5.1. Implications of Study

The present study was carried out to explore rapid advancement of technology in the field of education and its impact especially on e-learning with reference to Pakistan. Though the research review provides a multiplicity of approaches about adoption of e-learning, development of curriculum, design of e-learning environment, and throws light on multiple other variables associated with e-learners. The review of literature also helps to investigate the online instructions required to meet the needs of distance learner or e-learners. The literature review of few studies discussed strategies required to develop effective e-learning program in order to attain course objectives and organized online course whereas it has also found that very limited studies focused on age, gender, culture, language and ethnicity in e-learning mode of education. Similarly, the literature further explored that instructors, no doubt played a pivotal role for smooth delivery of courses.

5.2. Recommendations

In light of the findings attained from the current study, following recommendations can be given for future studies:

1. The current findings assist researchers in the future studies especially in the domain of e-learning in order to develop a deep understanding of distance education and e-learning.

2. The researchers should explore further practical avenues for e-learning as compared to the theoretical grounds.

3. It is also showed that most of the research studies used quantitative research design. The researcher should encourage mixed method research design which facilitates to produce accurate and consistent findings.

4. The findings of the review explored that needs of e-learners are significantly ignored and the notion "one-size-fits-for-all is followed so it should be focused to investigate how e-learning could convene the needs and requirements of all e-learners and give differentiated online instructions based on their courses.

5. It is also required to recognize the experiences of e-learners and what motivates them to take part in e-learning.

6. The findings of current study will facilitate the policy makers, academicians and practitioners to develop comprehensive strategies for expansion and encouragement of e-learning.

7. Lastly, e-learning instructors be worthy of more research attention to discover the journeys and professional development needs of teachers.

References

Ajmal, M. & Rafique, M. (2018). Relationship between Academic Self-Concept and Academic Achievement of Distance Learners. *Pakistan Journal of Distance and Online Learning, 4*(2), *225-244.*

Ajmal, M. (2016). Instructional Design for Blended Teaching Learning Process, Problems and Prospects: A Case Study of Allama Iqbal Open University. *Pakistan Journal of Distance and Online Learning*, *1*(1), 39-48.

Ajmal, M. J., & Shah, A. A. (2016). Perception of Tutors about Tutorials in Open and Distance Learning (A Case Study of Allama Iqbal Open University). *International Journal of Distance Education and E Learning*, *2*(1), 22-34.

Ajmal, M., Tabassum, S., & Hussain, J. (2018). Comparative Analysis of Student Support Services of the distance Universities of Pakistan. *International Journal of Distance Education and E Learning*, *1*(1), 9-23.

Akhter, H., & Mahmood, M. (2018). Study of the Impact of Online Education on Student's learning at University Level in Pakistan. *International Journal of Distance Education and E Learning*, *3*(2).

Ali, B., & Mahmood, A. (2016). Problems Faced by Tutors in distance education at Regional Level. *International Journal of Distance Education and E Learning*, *1*(2), 30-33.

Arshad, M., &Hina, Q. A. (2017). Availability and Problems Relating to the Accessibility of Information and Communication Technologies (ICT's) among University Students. *Pakistan Journal of Distance and Online Learning*, *3*(1), 33-50.

Arshad, M., Zamir, S., & Bhatti, R. U. (2017). Emerging Technological Trends in Distance Education.*Pakistan Journal of Distance & Online Learning, 3*(2), 71-84.

Bashir, A. (2016). Why Distance Learning Programs fail to bring Quality: A Case Study of an Online Distance Learning Program in Pakistan. *International Journal of Distance Education and E Learning*, *1*(2), 1-11.

Bhatti, M. S., Shamim,M. & Mukhtar, R. (2017). Investigating the Perspectives of TEFLers about Distance Learning: A Case Study. Journal of Distance Education and Research, *2*(1), 30-39.

Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J. J., &Ciganek, A. P. (2012). Critical Success Factors for E-learning in Developing Countries: A Comparative Analysis between ICT Experts and Faculty. *Computers & Education*, *58*(2), 843-855.

Bilal, M. Rizvi, A.A. Khattak, R.S. (2015). Theoretical Knowledge and Professional Practice in Teacher Education: Gaps at Application Level in Distance Education Pakistan. *International Journal of Distance Education and E Learning, 1(1), 44-75*

Blumenstyk, G. (2020). Why coronavirus looks like a 'black swan 'moment for higher education? *Chronicle of Higher Education*. https://www.chronicle.com/article/Why-Coronavirus-Looks-Like-a/248219

Farid, S., Qadir, M., Ahmed, M. U., &Khattak, M. D. (2018). Critical Success Factors of E-Learning Systems: A Quality Perspective. *Pakistan Journal of Distance and Online Learning*, *4*(2), 1-20.

Green, D. (2008). F*rom Poverty to Power: How Active Citizens and Effective States can Change the World.* Rugby, UK: Practical Action Publishing and Oxford: Oxfam International.

Grönlund, Å., & Islam, Y. M. (2010). A Mobile E-learning Environment for Developing Countries: The Bangladesh Virtual Interactive Classroom. *Information Technology for Development*, *16*(4), 244-259.

Gul, I., Ramzan, M., & Batool, S. (2017). The Efficacy of E-learning Technologies in Higher Education: Students' Perspective.*Journal of Distance Education and Research,2*(1), 5-15.

Hafeez, A., & Huma, Z. (2015). Development of Open and Distance Learning Model for the Revival of Destroyed Education System in Disaster Struck Areas. *Pakistan Journal of Distance & Online Learning*, *1*(11), 51-68.

Head, J. T., Lockee, B. B., & Oliver, K. M. (2002). Method, Media, and Mode: Clarifying the Discussion of Distance Education Effectiveness. *Quarterly Review of Distance Education*, *3*(3), 261-68.

Higher Education Commission (HEC). (2019, April 15). E-Reforms: PERN, PRR, eLearning, CMS & Digital Library. Retrieved from http://www.hec.gov.pk/new /eReforms/eReforms.html

Hina, Q. A., Arshad, M. A., Kashmeeri, S. A., & Mehar, S. A. (2018). Demographic Diversity Affecting Teacher's Perceptions Related to Quality of Research Produced in Distance Education. *International Journal of Distance Education and E Learning*, *2*(2), 1-13.

Hussain, I., & Sajjad, S. (2018). Role of Distance Education in Nurturing Learning Pursuance among Learners: A Qualitative Study. *Journal of Research in Social Sciences*, *6*(2), 120-139.

Hussain, I., Hussain, I., & Ramzan, M. (2019). Future Prospects of Virtual Education in Pakistan: Opportunities and Challenges.*Journal of Research in Social Sciences, 7*(1), 152-166.

Hussain, M. A., & Farooq, M. S. (2016). Practices and Barriers in Computer Technology Skills: Portraying Student Teachers of Open and Distance Learning. *Pakistan Journal of Distance and Online Learning*, *1*(1), 25-38.

Hussain, N. (2018).Preferences of Learning Styles and Approaches of English Language Teachers Enrolled in Distance Education Program. *Pakistan Journal of Distance and Online Learning*, 4(2), 49-66.

Hussain, S., Wang, Z., & Rahim, S. (2013). E-learning services for rural communities. *arXiv preprint arXiv:1308.4820*.

Iqbal, M. J., Shakoor, A. J., & Nabi, M. J. (2016). AN Analysis of Teaching Practice workshop for Students of Distance Education Allama Iqbal Open University Islamabad Peshawar Region. *International Journal of Distance Education and E Learning*, *2*(1), 9-21.

Iqbal, S. A. D. I. A., Shafiq, A. S. M. A., & Iqbal, N. (2016). Perceptions of Undergraduate Dental Students towards E-Learning in Lahore Medical and Dental College. *Pakistan J Med Heal Sci*, *10*(4), 1191-3.

Iqbal, S., Khan, M., & Malik, I. (2017). Mobile Phone Usage and Students' Perception towards M-Learning: A Case of Undergraduate Students in Pakistan. *International Journal of E-Learning & Distance Education*, *32*(1), 1-16.

Jabeen,S. (2016). Perceived Communal Benefits, Conceivable Risks and Potential Implications: Opinion of E-Educators. *Journal of Distance Education and Research, 1*(1), 25-36.

Javed, S., & Mahmood, M. (2018). Effect of Cable TV on Educational Performance of Distance Learners. *International Journal of Distance Education and E Learning*, *2*(2), 33-46.

Jawaid, M., Hafeez, K., Khan, M. L. U. Z., &Khalique, A. (2013). Computer Usage and Attitudes towards E-learning among First-Year Medical Students in Karachi, Pakistan. *Khyber Med Univ J*, *5*(1), 13-17.

Jumani, N. B., Malik, S., &Akram, H. (2018). Challenges and Successes of Blended Learning in Directorate of Distance Education, IIIUI.*Pakistan Journal of Distance and Online Learning, 4*(2), *143-156.*

Kanwal, F., & Rehman, M. (2014). E-learning Adoption Model: A Case Study of Pakistan. *Life science journal*, *11*(4), 78-86.

Khalid, S. M., & Khan, M. F. (2006). Pakistan: The State of Education. *The Muslim World*, *96*(2), 305.

Khan, A. (2017). Expanding Horizons: Contribution of an Online Community in the Professional Learning of Teachers in Pakistan.*Pakistan Journal of Distance & Online Learning. 3*(2), 25-40.

Khan, J., & Iqbal, M. J. (2016). Effects of Learning Style on Achievement of Distance Learners. *Dialogue*, *11*(3).

Khan, J., & Iqbal, M. J. (2016). Relationship between student satisfaction and academic achievement in distance education: A Case Study of AIOU Islamabad. *FWU Journal of Social Sciences*, *10*(2), 137.

Kundi, G. M., & Nawaz, A. (2014). From E-Learning 1.0 to E-Learning 2.0: Threats & Opportunities for Higher Education Institutions in the Developing Countries. *European Journal of Sustainable Development*, *3*(1), 145-160.

Mahmood, E., Nadeem, H. A., & Haider, I. (2017). Diversity in Study Habits of Formal and Non Formal Students: A Case of FG Education College and Allama Iqbal Open University Islamabad.*Pakistan Journal of Distance & Online Learning. 3*(2), 103-112.

Majoka, M. I., Fazal, S., & Khan, M. S. (2013). Implementation of Information and Communication Technologies (ICTs) in Education Course: A Case from Teacher Education Institutions in Pakistan. *Bulletin of Education and research*, *35*(2).

Malik, A. B., Nasir A., Kakli, M., Piracha Z. F., & Zia, M. A. (2015).*Pakistan Education Statistics 2013-14*. Islamabad: National Education Management Information System

Masaud, Z., Awan, M. I., & Ali, M. Q. (2018). Role of Allama Iqbal Open University in Promoting Education among Rural Women in Southern Punjab. *International Journal of Distance Education and E Learning*, *3*(1).

Mir, K. (2017). Design and Development of Online Student Support System. *Pak. J. Distance Online Learn*, *3*, 1-8.

Murphy, M. P. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, 1-14.

Naseer, N., & Majid, S. (2018). Prediction of Achievements of Distance Learners from Locus of Control. *Pakistan Journal of Distance and Online Learning*, 4(2), 25-48.

Nasir, M. (2017). **E**-Learning as a Means of Knowledge and Learning at Higher Education Level. *Pakistan Journal of Distance & Online Learning. 3*(2), 41-52.

Nawaz, A. (2013). Using E-learning as a Tool for Education for all in Developing States. *International Journal of Science and Technology Education Research*, *4*(3), 38-46.

Nisar, N. (2018).Students' Attitude towards the Use of Mobile Telephone Technology in Distance Education. *Pakistan Journal of Distance and Online Learning, 4*(2), *195-212*.

Noreen, S., & Hafeez, A. Challenges of Digital Learning for Distance Universities of Pakistan.*Gomal University Journal of Research, 2*, 69-80.

Qadri, M. M. (2018). Quality Assurance Toolkit for Open and Distance Learning Institutes: A Glimpse of E-Leaners' Perspective. . *Pakistan Journal of Distance and Online Learning*, 4(2), 1-24.

Rizvi, A. A., Khan, S. B., &Tahirkheli, S. A. (2016). Relationship among Distance Learner's Interactions and Success. *Pakistan Journal of Distance and Online Learning*, *2*(2), 1-10.

Rizvi, A. A., Naqvi, M. A., & Batool, M. (2016). Cultural Diversity in distance education: Advantages and Problems. *International Journal of Distance Education and E Learning*, *1*(2), 12-23.

Samiullah, M., & Qadeer, M. Z. (2018). Effect of Communicative Approach on Proposal Writing Skills of Distance Learners at Allama Iqbal Open University Islamabad. *Pakistan Journal of Distance and Online Learning*, *4*(2), 119-128.

Shah, A. A. (2016). Perception of Students about Tutorials in Open and Distance Learning at Allama Iqbal Open University. *Pakistan Journal of Distance and Online Learning*, *2*(2), 67-95.

Shah, I., & Ahmed, W. (2016). Effectiveness of Computer Simulation in Teaching Physics in ODL. *Pakistan Journal of Distance and Online Learning*, *2*(2), 11-16.

Shahid, W., & Mehmood, A. (2018). Reflective Practice and Action Research: A holistic View in Distance Education Teaching Learning Environment. *International Journal of Distance Education and E Learning*, *2*(2), 24-32.

Shahzad, M.U. (2017). A Literary Review on Distance Education in Pakistan and Future Possibilities .*Pakistan Journal of Distance & Online Learning. 3*(2), 85-102.

Sherazi, N. &Jabeen, S. (2016). Motivational Goal Orientation and Learning Strategies of E-learners. *Journal of Distance Education and Research, 1*(1), 47-55.

Solangi, A. F., Ahmed, M. U., Hussain, S., &Khattak, M. D. (2017). Exploring the Potential of Virtual Learning in an Open and Distance Learning (ODL) Environment. *Pakistan Journal of Distance and Online Learning*, *3*(1), 9-22.

Sughra, G. (2017). An Analysis of Perceptions of Female Students Regarding the Promotion of Distance Mode Learning in Pakistan. *Pakistan Journal of Distance and Online Learning*, *3*(1), 23-32.

Sultana, N. (2016). Social Media as Best Practices for Optimizing the Learning at Allama Iqbal Open University. *Secondary Educafion Journal*, *1*(1), 15-22.

Sultana, N., Ambreen, M., & Afzal, M. T. (2016). Quality of Teacher Education Program of Distance Mode. *Pakistan Journal of Distance and Online Learning*, *2*(2), 17-35.

Weeden, K. A., & Small, M. (2020). The Small-World Network of College Classes: Implications for Epidemic Spread on a University Campus. *Sociological Science*, *7*, 222-241.

Zafar, A. (2016). Effectiveness of Online Discussions in Developing Higher Order Thinking Skills. *Journal of Distance Education and Research, 1*(1), 37-46.