CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

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NATIONAL UNIVERSITY OF MOERN LANGUAGES

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **"Challenges of E-Learning Faced by Students at University level, A Descriptive Comparative Study."** Submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Title: Challenges of E-Learning Faced by Students at University level, A Descriptive Comparative Study.

This study aimed to analyze the challenges of e-learning faced by students at public sector universities in Gilgit-Baltistan. This study used the theoretical framework of Andersson & Grounlund (2009), which has four domains including technological challenges, individual challenges, contextual challenges, and course challenges. Quantitative research methodology was used. The population were the students of two public universities of Gilgit-Baltistan including Karakoram International University (KIU) and University of Baltistan (UOB). Using stratified random sampling technique, the study collected the sample data from bachelors' students of three departments of each university, including Department of Business and Management Sciences, Department of Educational Development, and Department of English Languages. Using the stated theoretical framework, a questionnaire was developed based on the Likert scale. Cronbach's Alpha test was used to check the validity of the questionnaire, having 0.80 indicating quite satisfactory reliability of the scale. A sample of 400 (193 from UOB and 207 from KIU) was collected and performed descriptive and inferential statistics using SPSS. The findings of the study showed that students sometimes faced challenges during e-learning. The study also revealed that there was significant difference in e-learning challenges between male and female students, the female students were facing more technological and contextual challenges than male students. The primary reason is that society is patriarchal, and females less encouraged for accessing technology. Likewise, it was revealed that there was a significant difference among public universities. The students of the University Y are facing more challenges than the students of University X. University X is well-developed with more technological and physical infrastructure as compared to University Y which is recently established, hence it is struggling for more resources including physical, human, and technological. The study suggested that the students should be facilitated with more computer labs, fast internet service and regular electricity. Moreover, there is needed to create awareness among students about effective usage of internet.

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LIST OF ABBRIVATION

TC	Technological Challenges
IC	Individual Challenges
CC	Contextual Challenges
CrC	Course Challenges
ICT	Information Communication Technology
E-L	E-learning
CAI	Computer Assisted Instruction
CBE	Computer Based Education
CAL	Computer Assisted Learning
LMS	Learning Management System
CAE	Computer Assisted Education
UOB	University of Baltistan
KIU	Karakorum International University
G.B	Gilgit Baltistan

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DEDICATION

I dedicate my work to my affectionate father DIDAR ALI, and my loving mother BI-BI RASHIDA for their immense love, and unconditional sacrifices they rendered for me throughout my life. And for their prayers that helped me sustain myself in this world.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

E-learning is comprised of two standings, education, and technology. Learning is a cognitive process of attaining and processing knowledge and electronics are the facilitators of learning. E-learning refers to computer-assisted instruction, online education, internet-based learning and interactive learning (Lara 2020; Aljawareh, 2020). Technology enables the learning process to reduce issues regarding time and space. Additionally, it is used as a major tool for performing teaching and learning activities. It made education easier and friendly. According to Patracia (2020), e-learning is becoming more popular and the body of research on e-Learning is extensive and continually expanding due to its status as the preferred learning strategy in industrialized nations including blended and digital learning. Similarly, Bae (2020), also persuade the importance of e.learning and its prospects in coming future around the globe as most of education system is implementing e-learning strategies across the globe. According to a research study conducted by Mean (2009), the current level of development of online courses is estimated to be 65%. Consequently, while highlighting the importance of e-learning it is recommended that government-sponsored methods be implemented to promote the utilization of e-learning (Shivangi, 2020).

According to Yildiz (2020), the revolution of technology in higher education is taking its place; technology is included in different domains of education system in the recent years. The mode of education is changing; students and teachers should know the

potential of information technologies and they should have the required skills and knowledge about information technology. While highlighting the challenges and prospects of e-learning Liguori and Winkler (2020), mentioned that to contribute for the development of e-learning the different aspects of e-learning should be highlighted. Mouyabi (2011), believes that at higher education level the introduction of e-learning has brought many new approaches and introduced many new tools. For the implementation of these approaches and tools long term implementation strategy is required (Blignaut & Els, 2010).

According to Kigundu (2014), e-learning presents a significant chance for students to engage in information review through the utilization of various websites and hyperlinks. E-learning offers students a wealth of knowledge that fosters their engagement in critical thinking and facilitates deep learning. Learning is facilitated by this. E-learning has been found to promote the development of responsibility and self-regulation abilities among students. The cultivation of a sense of responsibility and the development of self-regulatory skills empowers learners to acquire essential life skills, including but not limited to planning, decision-making, and management. E-learning surpasses the old concept of spoon-feeding, hence fostering a more active role for learners in comparison to traditional classrooms. The active engagement of students in the learning process enhances their self-assurance and acquisition of knowledge. In a conventional educational setting, a limited number of learning styles are typically accommodated due to constraints related to time, physical space, and available resources. In contrast, e-learning platforms offer opportunities for catering to a wider range of learning styles. The issue of student diversity is addressed within the context of e-

learning. E-learning tools facilitate student engagement in the learning process through many means. One of the advantages of e-learning is that it empowers students to generate and oversee information. This platform offers presenting capabilities that enable students to effectively communicate knowledge and engage in collaborative learning activities. The user's text does not contain any information to rewrite in an academic manner. The utilization of e-learning tools also empowers students to evaluate their own learning and supports them in engaging in self-regulated learning. E-learning tools facilitate convenient access to information. E-learning systems allow students the ability to bypass extraneous content and focus their attention on essential knowledge. While engaging in e-learning, students employ several tools to facilitate the acquisition of knowledge. According to Kigundu (2014), E-learning tools encompass a variety of computer-based resources, such as software applications, multimedia players, and fundamental apps like Microsoft Word and PowerPoint. According to Fauziana (2020), e-learning facilitates students with multiple opportunities of learning and the e-learning system is facilitated by various tools, as they contribute to the execution of educational and instructional tasks inside the e-learning environment. These tools are utilized by facilitators and students for various purposes such as assessment, administration, communication, and record keeping.

Contemporary research on e-learning lacks a clear and precise definition of individualized learning requirements. This prompts an inquiry into the ways in which educators are employing technology to instruct a diverse group of students with varying learning needs, as well as differing racial and socioeconomic backgrounds. The utilization of various application platforms for educational purposes is widespread among

students, educators, and educational institutions (Phipps and Merisotis, 1999). Furthermore, the incorporation of information and communication technology (ICT) holds promise for promoting the development of an educational framework that cultivates an environment within educational institutions that is favorable for fostering creativity and innovation (Altawaty 2020; Abdullah 2019).

However, the use of technology and its tools is not simple, technical errors, software issues and other technological issues can occur. According to Muhammad and Kainat (2020), internet access problems, a lack of interaction between teachers and students and a lack of technological facilities challenge the efficacy of online learning.

According to Qureshi et al., (2012), the use of technology brings challenges as well; it is important to cater the issues on proper time. As Ijaz et al., (2012), further mentioned that e-learning is highly beneficial approach of learning according to the era, so government should address the issues. A research study conducted in Nigeria also stated that government should focus on e-learning and it should consider the internet issues at universities and advancement in technology. Countries that are successful in e-learning have proper vision; they have effective government policies, and financial support for e-learning system. These countries have proper investment in information technology. Without mission, policies and planning a nation cannot successfully implement e-learning. As per Injadat Moubayed's (2018), analysis the users of e-learning face several challenges. These issues might sometimes be seen from a technology standpoint and other times from an educational standpoint. According to Islam (2015), all the challenges appear have a permanent relation to each other, if one of the challenges is not faced adequately or deficient then the overall delivery and learning will have a

deficiency. For example, if the correct training is not provided then academics can waste time than necessary, or academics may have difficulty identifying student needs. If the e-learning system is not stable, prone to downtime, slow, persistent bugs and technical faults can lead to frustration and annoyance amongst academics.

1.2 Rationale of the Study

The concept of e-learning has garnered significant attention from both developed and developing nations. Over the course of time, the implementation of e-learning has been established in numerous universities across Pakistan. Virtual University (VU), Allama Iqbal Open University (AIOU), and other academic institutions are currently offering online educational programs. In contemporary times, most universities have implemented educational systems that include technology. In contemporary academia, universities have assumed a prominent role in the management and oversight of online data, employing technological tools to facilitate assessment, record-keeping, and various administrative functions. This pervasive integration of information technology has revolutionized the operational landscape of higher education institutions. The use of e-learning in Pakistan is very young, resulting in a less robust e-learning infrastructure. The subject is encountering numerous challenges. In the context of educators' use of online teaching and learning, a recent research study conducted by Noraini and Jihan (2020) has examined the opportunities for investigating the challenges encountered by both educators and learners in this educational environment. Previously, these challenges were overlooked; but, because of the COVID-19 pandemic, the education system underwent a significant transformation from a traditional model to online learning. Consequently, all individuals involved in the education sector, including teachers, students, administrative

personnel, politicians, and stakeholders, became participants in this new approach, either directly or indirectly.

Despite the limited implementation of e-learning prior to the COVID-19 pandemic, the prolonged duration of the global health crisis has compelled us to embrace this mode of education. Presently, electronic learning (e-learning) is widely regarded as the prevailing standard in the realm of higher education. Nevertheless, it has been observed that this has provided teachers and students with numerous opportunities for interaction. The challenges identified in the literature include a deficiency in technological proficiency, limited student involvement, inadequate internet access, and the completion of online assessments (Erlangga, 2022; Igai & Yunus, 2022; Razkane et al., 2021). Furthermore, Bernama (2022) underscores that a dearth of experience in online instruction leads to challenges, frustrations, and persistent shortcomings, causing mental fatigue for both English educators and learners. Additionally, it results in diminished motivation, difficulties in teaching grammar, and inadequate technical assistance. emphasizing the significance of conducting research on e-learning. According to Goosen and Merwe (2015), it is suggested that study on e-learning should not only be connected to other general researchers but should also prioritize practical applications. The development of an e-learning agenda is important to effectively address the issues associated with integrating information technology into the education system. This necessitates coordination between the departments of higher education commission and departments of technology. There is a lack of study conducted in the field of e-challenges at the university level in Gilgit-Baltistan. In order to address and resolve the challenges at hand, it is imperative that we first identify and comprehend them. The objective of this

research project is to investigate the obstacles encountered by students in relation to e-learning inside higher education institutions.

1.3 Statement of the Problem

The transition from conventional to digital education has a distinct array of obstacles. The sudden shift from traditional face-to-face instruction to a fully online educational model in Pakistan caught most individuals off guard. This change took place within a short span of time, lacking comprehensive preparation and adequate training for the teaching staff. As a result, both students and staff members are facing a multitude of challenges in adjusting to the transition face to face education to an online format within the COVID-19 pandemic (Dyrbye et al., 2009). In e-learning the students face multiple challenges. They face challenges regarding technological availability in their areas including internet, technological gadgets and resources, they face culturally built issues, and the students are having motivational issues towards e-learning. Likewise the students face issues related to teaching and learning activities in e-learning .overall these issues effects there learning .This study outlined these challenges including technological challenges, course challenges, individual challenges and contextual challenges and proposes potential solutions. This research study was aimed to investigate the challenges faced by the students regarding e-learning at university level and this research study aims to compare e-learning challenges between the public sector universities in Gilgit-Baltistan. Moreover it also aims to find out the e-learning challenges among male and female students at university level and to find out the e-learning challenges among the departments of public sector Universities in Gilgit-Baltistan.

A significant number of academic institutions suffer from the absence of a specialized information technology (IT) department, hence impeding the provision of adequate training to faculty members in the effective application of technology.

Furthermore, it is evident that the quality of instruction exhibits variation and lacks standardization across different educational institutions under the prevailing conditions. Various platforms are employed for the purpose of delivering content, but it is worth noting that only a limited number of educational institutions have their own learning management systems and specialized IT teams to support faculty members. Certain educational institutions utilize video conferencing platforms such as Zoom and Microsoft Teams to provide real-time lectures, while others advise their professors to employ screen recording software to capture lectures, which are then shared through messaging applications or closed social media groups. In many cases, faculty members had challenges when attempting to record lectures remotely from their residences, thereby requiring them to make in-person visits to their respective academic institutions. Providing concise online instruction on recording technologies should mitigate the need for these superfluous visits, especially in the context of the COVID-19 pandemic where adherence to social distancing measures and minimizing non-essential travel is advised (Mahul-Mellier, 2020).

Maintaining active participation among those engaged in online learning is a pervasive issue, especially in societies with advanced technology capabilities. In the context of Pakistan, it was observed that a considerable proportion of faculty members lacked formal training in the domain of online education and was not well-versed with the complexities associated with real-time online interactions with students, prior to the

onset of the pandemic. Educators face the challenge of maintaining student engagement, particularly considering their restricted attention spans and the sense of boredom resulting from extended periods of lockdown. The process of monitoring attendance poses unique issues, as there are worries that students may participate in unrelated online activities while falsely reporting their attendance using proxies (Cullen et al., 2019).

Moreover, challenges pertaining to internet connectivity and limited bandwidth provide substantial barriers when it comes to streaming video courses or downloading sizable video files. Students residing in remote areas often face challenges when it comes to engaging in live streaming and participating in video conferences for academic sessions. Farid et al. (2015), have identified significant obstacles to the deployment of e-learning in Pakistan, several of which have direct implications for online medical education. The challenges encompass a deficiency in instructional design, recurrent power disruptions, faculty resistance towards adopting novel teaching methodologies, and adherence to socio-cultural conventions.

E-learning has emerged as a significant component of contemporary education systems around the globe in today's rapidly changing educational environment. Its ability to transcend barriers of time and space, improve accessibility, and facilitate interactive learning experiences has made it an indispensable instrument for effective education. As a means of ensuring their competitiveness in the global knowledge economy, developed nations have embraced e-learning. However, developing nations such as Pakistan encounter numerous obstacles when attempting to integrate e-learning into their educational practices. In addition, the cultural, social, and economic contexts of Pakistan have an effect on the successful implementation of e-learning initiatives. The adoption of

e-learning can be hindered by cultural attitudes towards technology, traditional learning practices, and educational norms. Students from disadvantaged backgrounds may lack the necessary resources to completely engage in e-learning activities due to socioeconomic factors, such as the affordability of devices and internet connectivity (Farooq et al., 2020).

1.4 Significance of the Study

The significance of this study lies in its potential to fill the gap by providing valuable insights into the challenges faced by students in e-learning. By highlighting these challenges, the research intends to pave the way for effective collaborations among stakeholders and beneficiaries, leading to the development of targeted solutions and strategies. Ultimately, this study aims to contribute to the improvement of the e-learning system in Pakistan, benefiting instructors, teachers, undergraduates, policy makers, and instructional designers, and enhancing the overall educational experience for students. The integration of electronics in education has proven to be effective since many years. It's an evolution in education that supports the process of education. Students at higher education level have been using the tools of electronics. But students face hurdles due to many reasons. Some of the reasons are unavailability of resources, lack of knowledge, lack of skills in the domain of electronics and untrained educators. The promises of e-learning have not been fully implemented. So, this research study will investigate the challenges faced by the students regarding e-learning at university level. This study will help to address the issues regarding e-learning. This research study will also enlightened the parents about the gender biasness related to e-learning facilities .This research study will be accommodating for the instructors, teachers, undergraduates, policy makers and

instructional designers to ameliorate the e-learning system so that students can be benefitted, and the challenges can be addressed.

1.5 Objectives of the Study

1. To investigate the e-challenges faced by the students regarding e-learning at university level.
2. To compare e-learning challenges between the public sector universities in Gilgit-Baltistan.
3. To find out the e-learning challenges among male and female students at university level.
4. To find out the e-learning challenges among the departments of public sector Universities in Gilgit-Baltistan.

1.6 Null Hypotheses

$H_0$1. There is no significant difference in the challenges faced by students in e-learning at the university level among public sector universities in Gilgit-Baltistan.

$H_0$2. There is no significant gender difference in the challenges faced by students in e-learning at the university level.

$H_0$3. There is no significant difference in e-learning challenges among departments at public sector universities.

1.7 Theoretical Framework

1.7.1 Anderson and Grounlund Framework on challenges to e-learning

Anderson and Grounlund (2009), developed a comprehensive framework by reviewing the existing literature. They highlighted the four areas of challenges.1) Individual challenges 2) Course challenges 3) Contextual challenges 4) Technological challenges.

1.7.1.1 Individual Challenges

Individual challenges are further divided into two: a) student and b) teachers.

In the domain of student challenges, enthusiasm, contradictory priorities, economy, intellectual confidence, technical confidence, community provision, gender and oldness might be some barriers to the students in e-learning.

While the domain of teacher challenges, technological self-assurance, inspiration and obligation, prerequisite and capability and time can be the encounters a teacher might face during e-learning.

For students, various factors such as enthusiasm, conflicting priorities, financial constraints, intellectual confidence, technical confidence, community provision, gender, and age might act as barriers in e-learning (Song et al., 2004). This is echoed in the work of Broadbent and Poon (2015), who highlight the importance of student self-regulation and time management in e-learning success. In terms of teachers, potential challenges include technological proficiency, motivation and commitment, prerequisite skills and abilities, and time constraints (Baran et al., 2011). The evolving role of teachers in an e-learning environment, often requiring them to transition from traditional pedagogical methods to technologically mediated instruction, can pose significant difficulties.

1.7.1.2 Course Challenges: Course challenges is another domain of this framework which again is divided into two sub categories which are a) course design b) support provided.

In the category of course design challenges the subcategories of problems in curriculum include pedagogical model, topic content, teaching and learning activities, localization, and adaptability. In this domain a student might face challenges during e-learning.

Similarly, in the domain of sustenance provided support for student from faculty and support for faculty from administration is the only categories of challenges both of these stakeholders might face during e-learning.

In the domain of course design, pedagogical model, subject content, teaching and learning activities, localization, and adaptability may present problems (Herrington et al., 2005). Additionally, for support provided, both student support from faculty and faculty support from administration can pose challenges in an e-learning setting (Sheridan & Kelly, 2010).

1.7.1.3 Contextual Challenges: In contextual challenges there can be challenges related to organization and challenges related to culture. Organizational challenges can be information organization, budget and backing and training of educators and supervise. While the social challenges can be character of educator and pupil, attitude towards e-learning and IT guidelines and directives.

Organizational challenges could include issues with information organization, budgeting and financial support, and educator and supervisor training (Park & Chen,

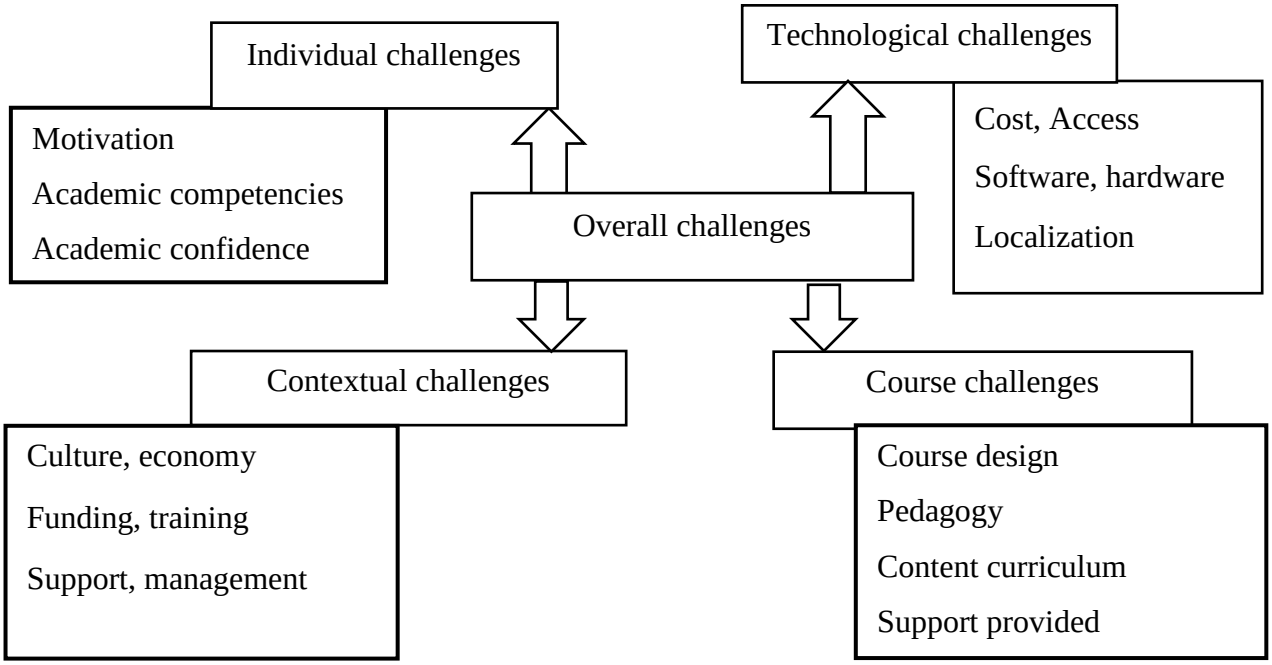
2024). Cultural challenges can stem from attitudes towards e-learning, IT policies, and directives (Brown & Green, 2025).

1.7.1.3 Technological Challenges: The challenges in technology are its cost, access, software and interface design and localization of technology can act as barriers to e-learning.

Technological challenges encompass cost, access, software and interface design, and technology localization, which can all potentially act as barriers to e-learning (Martinez et al., 2025).

Figure 1:

Anderson and Grounlund's (2009) framework on challenges to e-learning



1.8 Operational Definitions

1.8.1 E-Learning: E-learning refers to a learning approach in which information and communication technology is used. It refers to the use of ICT to support teaching and learning process. The use of information technology in education enhances efficient transfer of knowledge everywhere and anytime.

1.8.2 Technological Challenges: Technological challenges are defined as the challenges related to access and price of technology and its usage along with software and interface design of technologies.

1.8.3 Individual Challenges: Individual challenges include individual motivation, individual priorities, academic confidence and support from families regarding e-learning.

1.8.4 Contextual Challenges: Contextual Challenges are defined as challenges in terms of rules and regulation, culture of the organizations and it also includes the context of the society.

1.8.5 Course Challenges: The issues associated with approaches pertinent to the prospectus and instructions in online learning systems are referred to as course challenges.

1.9 Delimitations

1. This research was delimited to Gilgit Baltistan were not addressing other regions of Pakistan.
2. This research was delimited to students of B.S honors only.

CHAPTER 2

REVIEW OF RELATED LITERATURE

As information technology has made its space in every sphere of our lives. It became more applicable within time. It has greatly influenced academic activities in education system especially at university level because in Pakistan it is more used at university level. The academic activities including assessment, teaching, and learning are affected by information technology. Literature supports that e-learning is a successful way for uplifting learning and sharing of knowledge as it help to cope with the barriers of time and space. The implementation of information technology may become a bit difficult for a system which is not well equipped with technology which has lack of knowledge and resources or lack of interest in the field. The integration of technology may face hurdles related to student's satisfaction, student's motivation, student's competencies, and infrastructure of technology and instructor's capacities. This play a vital role in employment of e-learning necessitates proper infrastructure, motivation of the beneficiaries and facilities.

According to Zinn (2000), the idea of computer-assisted education is the foundation of e-learning. As a mean of teaching-problem-solving the concept of computer assisted appeared in 1955. Aparicio & Bacao (2013), presented different concepts that relates with e-learning. Some concepts related concepts to e-learning were identified from scholarly publication between 1960 to 2014.These concepts are 1)computer assisted instruction (CAI) 2)Computer based education CBE 3)Computer assisted learning CAL 4)learning management system LMS 5) computer managed

instruction CMI 6) computer assisted education CAE 7) e-learning electronic learning 8)artificial learning environment ALE 9) Mobile learning m-learning 10) self-regulatory efficacy SRE 11) Computer support for collaborative learning CSCL 12) rich environment for active learning REAL 12) mega university computer facilitated learning Mega University CFL 13) Learning content management systems LCMS 14) Blended learning B-learning 15) connective MOOC (C-MOOC) 16) Self-directed leaning SDL 16) Internet based learning medium ILM 17) Massive open online course MOOC. These concepts reveal that e-learning is being used from 60s to till know to facilitate learning and teaching.

The limited budget allocated to the education sector is one of the greatest obstacles to the implementation of e-learning in Pakistan. With only 2.1% of the GDP allocated to education, there are insufficient funds to support infrastructure expansion and quality improvement initiatives. Consequently, educational institutions struggle to provide sufficient resources and a conducive environment for e-learning. This financial constraint has a direct effect on the accessibility and availability of technology and learning materials, thereby diminishing the potential advantages of e-learning for students.

Moreover, the dearth of resources and educational institutions presents a formidable obstacle. In numerous remote and disadvantaged regions of Pakistan, educational facilities and technology are scarce. The digital divide is exacerbated by the unequal distribution of resources, which creates disparities in e-learning opportunities. In addition, the lack of trained educators and inadequate awareness and understanding of e-learning approaches and instruments hinder its effective implementation. Students face a

significant obstacle in the absence of guidance and support from educators who can leverage e-learning technologies to create engaging and interactive learning experiences.

E-learning, according to White (1983), is education conducted using electronic devices such computers, video discs, teletext, videotext, televisions, etc. E-learning is described similarly by Morri (1997), as interactive distance learning. e-learning focuses on reducing time and space issues by including technological and functional focus regarding internet possibilities'-learning in this era is not only restricted to learning and technology rather it is now focusing on learning strategies, learning methods, and content alignment (Qureshi, Yasmin & Whitty, 2012). Siritongthaworn, Krairit, Dimmitt, & Paul, (2006), defines e-learning as a successful tool for upgrading quality of educational practices, apart from the traditional system e-learning is a modern style of education which includes electronic based information that facilitates learners learning and, knowledge and skill domains. Arbaugh (2002), also mentioned a simple definition of e-learning according to him e-learning is the process in which internet is being used by the users for learning purpose. While online learning is associated with learning that allows the student to work in classroom with an instructor while working together their assignments.in online learning the interaction between teacher and students occurs regularly, it is also used as blended approach. Online learning is concerned with implication of variety of teaching learning supplemental activities. According to (Richardson,2000), the attributes that define online learning is the appropriate combination of asynchronous and synchronous voice, text, and videos that leads to enhanced or hyper communication between learner and facilitator.

2.1 Stakeholders of E-Learning Structures

The e-learning system is not just delivered by one and received by the other rather it holds a vast connection among many groups. As in their research study Ozkan & Koseler, (2009), mentioned that the stake holders of e-learning are the learners, administration, faculty, technical staff, and the employers. Students, employers, educational institutions, accreditation authorities, teachers, content producers, the ministry of education, teachers' associations, student commissions, and technology providers are among the stakeholders in e-learning. Students are the consumers of the system; employers are also the customers. While teachers, accreditation organizations, educational institutions, and content providers are the suppliers. Education ministry is the board of stakeholders as institutions are funded by the ministry. Outside of the system, technology providers offer the fundamental components and infrastructure of technology. All the stakeholders are interconnected and all of them splay a significant role in the e-learning system. (Qureshi, Yasmin and Whitty,2012).

2.2 Benefits of E-Learning

According to Ijaz A.*et al* (2012), technology has facilitated academic activities in higher education, and it became more applicable with time. The traditional challenges of education are now replaced with the help of integration of technology in education; e-learning became more reliable. E-learning facilitated student and teachers regarding accessibility, delivery cost, removing gap and deep learning. Ijaz A.*et al* (2012), mentioned some of the benefits of e-learning.

2.2.1 Accessibility

In terms of accessibility e-learning enables learners to easily access material for their learning activities, these materials can be online books, videos, documents, and other resources. According to Raymond, (2005), e-learning reduces the stress and enables to access quality and important information. With less cost and consumption of time learners can easily get the relevant material in e-learning. It does not bind them with physical boundaries.

2.2.2 Low Delivery Cost

Allen (2011), mentioned that the online material has no expiry date it is available for students all the time and it can be utilized any time anywhere around the globe. Rather purchasing a lot of books and tangible material students can now just download required material without investing more money. Blenkinsopp, Hall, &Walton, 2005; Welsh (2003), stated that the implementation of e-learning requires considerable investment for the maintenance of hardware cost, software and equipment maintenance. According to Welsh et al. (2003), Welsh et al. (2003), Zhang & Nunamaker (2003), Ruiz et al. (2006), Wang, Xu, Chan, & Chen, 2002, Welsh et al., 2003, and others, e-learning helps to reduce classroom expenditures, material costs, and other expenses related to educational setup.

2.2.3 Bridging the Gap

One of the prominent benefits of e-learning is that it reduces the gap between theory and practice, the promises of implementing e-learning are now practically implemented as many universities around the world are now providing online opportunities and they have active and functional websites to run the online system.

2.2.4 Deep Learning

In order to ensure deep learning, there is great need to engage learners with plenty of information. According to Jhons (2003), e-learning provides this opportunity for students it provides vast information with the help of which student can engage them with deep learning rather surface learning, it also includes active learning.

2.2.5 Shared Learning

Among the benefits of e-learning shared learning is also an important benefit that allows students to share their experiences with one another. It increases students communication students from different backgrounds can interact with each other and perform learning activities.

2.2.6 Freedom of Speech

Sweeney, Donoghue, & Whitehead, (2004), in their research studies mentioned that for freedom of speech students viewed e-learning as a facilitator. In e-learning systems students are not only bound to the boundaries of classroom rather it includes participation in seminars, online course, online classes etc. It promotes student's participation and allows them to present their view point. Giovanazzi and Manzoni (2017), in their research mentioned that e-learning is the most trending term, but it is practically less used and ignored, instead of knowing that it is one of the essential needs of the future. The use of information technology in education will increase the stability of education in the modern era. Surety (2010), stated that introducing e-learning is not a simple task it requires planning and preparation in order to improve the quality of e-learning and to remove the challenges it is necessary to expand the access of all the teachers and students to internet facilities in educational institutions. A study further

mentioned that among the different challenges in e-learning the access of e-learning is one of the major challenges, the regular access to a reliable e-learning structure is essential (Goose and Van deer Mere, 2015).

2.3 Challenges in E-Learning

In their research, Ijaz A. Qureshi, Khola Ilyas, Robina Yasmin, and Michael Whitty (2012) noted that universities are embracing e-educational technology like learning management systems (LMS). All over the world these facilities are promoted while in Pakistan still there are obstacles for running the e-learning system smoothly. In order to compete with the international educational standards Pakistan is still facing issues. Based on the literature review Ijaz A.*et al* (2012), mentioned some of the relevant issues of e-learning in the context of Pakistani universities. These issues are mentioned below.

2.3.1 Technological Challenges

Technical difficulties are most common difficulties in implementation of e-learning and integration of technologies in education system. Technical challenges include challenges regarding installation of technological infrastructure, availability of latest technology and other technological resources which are essential for implementation of e-learning. In research conducted by Bakari, Tarimo, Yngstrom, and Magnusson (2005), it is mentioned that due to lack of quality experts and technology expert's developing countries face challenges in the way of installation and maintenance of information and communication technology. Technical experts are required to handle technical issues. In a e-learning based system the availability of computers is necessary. It is important for universities to provide regular access to computers for students because

in e-learning based system students use computers for learning. Ijaz A.*et al* (2012), mentioned in their research that students should have equal access to computers and computer labs should be available in universities which ensures peaceful environment and technological enhancement. In developing countries there is no possibility that every student will be having laptops or computers, because due to financial crisis and lack of technological knowledge availability of computers at home is missing. So, to make students familiar with students it is necessary to provide computers and other learning related electronics. In a research study conducted by Curran (2001), it is mentioned that not only on the basis of developed and underdeveloped countries but also on the basis class-based systems indicates inequalities regarding to the access of online line learning.

The integration of technology is not only concerned with learning it also includes sharing of information. Now a day's cybercrime is common because of which people don't prefer for integration of e-learning and avoid portals, wikis, and blog. In order to implement e-learning the privacy issues should be resolved. Alves and Uhomoibhi (2010), also said that learning management should provide security and identify efficient ways to solve the security issues.

Contextual challenges and technological challenges are foremost encounters that hinders the employment of e-Learning these contests are considers as per prominent trials, because these have great impact on e-learning. Tarus, J.K., D. Gichoya, and A. Muumbo (2015), stated technological tasks as the trials that relates to technology, and familiarity to technology that facilitators and other users encounters. Likewise, Tarus, J.K., D. Gichoya, and A. Muumbo (2016), stated that in the domain of e-learning framework the unavailability issues regarding infrastructure for e-learning comes under

technological challenges. Khan, B., (2005), also mentioned that the unavailability of technology creates issues for e-learning infrastructure. Similarly, Wang, S.-C., B. Cowie, and A. Jones. (2006), listed some technological issues which includes unavailability of computers, lack of access, connectivity, and internet. The unavailability of computer resources, internet connectivity, lack of technological problems are the critical problems in the process of implementation of e-learning infrastructure. Aleman-Meza, B. (2005). Technological issues rise from technological aspects that revolves around tangible equipment and software related issues of technology. According to Kamba, M., (2009), the technological challenges also link to the quality of reliability and connectivity. Aldowah, H., S. Ghazal, and B. Muniandy (2015), enlisted that the electricity, skills, and training of the staff regarding usage of technology is a considerable matter because these are the areas that effects the e-learning approach. Further a study extended that the ability of the user to access full range of needed content is also affected by the bandwidth. Additionally, there are issues related to lack of availability of technological resources, and lack of skills that hinders use of e-learning (Qureshi, 2012). The deficiency in technology is especially evident in poor nations and poses a substantial obstacle in medical education, hindering the faculty's capacity to efficiently create and provide online learning opportunities (Lakbala, 2015). The prevailing teaching methodology in many institutions in Pakistan is based on traditional lecture-based instruction. As a result, a significant number of educators had limited prior exposure to the practice of online education. Nevertheless, they were driven to migrate to online delivery of lectures and educational content because of the demands presented by the circumstances.

2.3.2 Access to Technology

E-learning is totally depended on technology; it requires technological tools to perform e-learning activities. The access to computer, internet connection, are the factors that enables, and its absence disables the e-learning system. According to Burn & Thongprasert, (2005), the needed content, physical access to computers and reliability of bandwidth are the effecting factors of e-learning. In the scenario of Ghana there is little access to computers and internet. The absence of access to technology is a prominent obstacle for e-learning.

2.3.3 Cost of Technology

Under the technological challenges the cost of technology is matter of concern especially for developing under developing countries who cannot afford modern technologies. According to (Kwofie, B., & Henten, A. (2011), the individuals in developing countries cannot afford expensive technologies. The unviability of funds makes it worse. By upgrading funding's and providing financial support institutions can be supported to access technology for -learning. Likewise, students from diverse financial backgrounds can also have difficulties in managing cost of technologies, like mobile phone, window software's, and USBs, etc.

2.3.4 Software and Interface Design of Technology

The usability of technology for learning is important as it make e-learning implementation successful. Software and interface design supports the selected learning models and teaching pedagogies, which make it easy for use. Software that is not user friendly will automatically hinders the process of use, there will be little motivation for

users to use it. Similar interface designs are highly essential for users as it motivates them towards technological use.

For efficacious execution of e-learning cost of technology is needed to be managed specially in underdeveloped countries it is hard to bear cost of technology. According to Aldowah, H., S. Ghazal, and B. Muniandy (2014), the cost of technology is measured a constraint in the way of effective application. Andersson, A., (2009), also stated the cost and economical aspect of technology as barrier to proper implementation of e-learning. Technology is overriding component in e-learning, but it is costly as the technological tools are expensive, either it is software or hardware (Ali, G.E. and R. Magalhaes, 2008). The integration of technology does not only rely on initial implementation stage it also requires ongoing up gradation, because there is high possibility of occurrence of software and hardware issues. so, it becomes more expensive, the cost of technology creates hindrance in e-learning.

2.4 Individual Challenges

Individual challenges include individual motivation, individual priorities, academic confidence and support from families regarding e-learning. According to Chen & Jang (2010), for online education motivation is highly necessary because in e-learning setups there is more chances of distraction and abrasion. Intrinsic and extrinsic motivations are the two main categories of motivation, according to Deci & Ryan (1985). The level of motivation that an individual exhibits even in the absence of reward is referred to as intrinsic motivation. While the e extrinsic motivation is depended on reward, it is controlled by others. Without leaners motivation e-learning cannot be fully implemented. Davis (1992), mentioned that without motivation the presence of course

design and learning context will not be enough to achieve valued outcomes. While stressing on the importance of student's motivation Law et al., (2010), said that along with all other resources and supporting elements of le-learning student's motivation is equally important.

Likewise, in a e-learning system it is crucial that the users should be efficient in technological language. While promoting e-learning the medium of instruction has always been a serious hindrance, because users of e-learning who have less proficiency in technological language are unable to run the systems effectively. Ijaz A. Qureshi, Khola Ilyas, Robina Yasmin, and Michael Whitty (2012), noted that the medium of instruction is a significant component that creates hurdles in the way of implementing e-learning in developing nations like Pakistan. In Palestine a research study accompanied by Shraim & Khalif (2010), mentioned that a prominent barrier to e-learning was language. Knowledge and understanding regarding e-learning is important because it motivates students to participate in e-learning. According to Klamma (2007), active participation and commitment are influenced by user's satisfaction, students who have little knowledge about e-learning are likely to get frustrated because they do not how to use the technological tools.

2.4.1 Motivation

Within individual challenges motivation is an important factor, motivation has been considered an important factor for successful implementation of e-learning. Research has showed that motivated students perform well in e-learning while less motivated students tend to dropout from e-learning (Kwofie & Henten, 2011). The e-learning should be designed more attractive so students show interest. Additionally, by

giving reward motivation among students can be developed. Likewise, learning should be aligned with expectations of students.

2.4.2 Conflicting priorities

There is diversity among students some have different commitments levels to the allocated timings of course work. The implementation of e-learning is that's why affected by the conflicting priorities of students. Research indicated that the individual problems of students create hurdles in the way of e-learning as many students are different activities grabs the attention of students and it becomes difficult to priorities activities (Kwofie & Henten, 2011).

2.4.3 Economy

Economic issues also have been discussed in general issues to e-learning, on individual basis economy also creates hurdles. As financial difficulties of students cause dropout and lack of motivation towards e-learning. In Ghana funding has been found critical issues for e-learning. While in the north of Pakistan there are parents who cannot afford other facilities of learning like copy, uniforms and other stationary so for them e-learning equipment are out of range. This is a discouraging element for those students and parents, this is why they face difficulties in adopting e-learning. While once e-learning system is installed and implemented then it will be profitable as it will be even more reliable because it is flexible in space, time and facilities. While mentioning possible solutions for these issues (Kwofie & Henten, 2011), stated that special funds should be allocated to e-learning to foster students' motivation towards e-learning.

2.4.4 Academic Confidence

According to Simpson (2004), the success and failure of the students in e-learning system depends upon their academic confidence. While some researchers also stress on the previous experience of students like Andersson, (2008), stated previous experiences and qualifications of students are the factor that can best describe students' academic performance. Low self-efficacy can lead to more challenges and difficulty in implementation of e-learning (Kwofie & Henten, 2011), A self-capable student can complete their course and apply potential to do so. Such confidence and potential from students make it easy to implement e-learning smoothly.

2.4.5 Technological Confidence

The implementation of e- learning dose not only requires funds and facilities rather it equally requires technological confidence among teachers and students. Students who have less technological skills cannot run technological tools smoothly and face challenges in achieving their educational goals (Kwofie & Henten, 2011). Lack of skills is a big hindrance for e-learning. Even due to lack o technological confidence students quit schools. It becomes difficult for the students to adopt technology who are new to it. Such issues create major problems for implementation. While heightening the importance of skills Dagada, (2004), mentioned that the response towards workplace can be only ensured when the teachers develop necessary skills for e-learning engagement. Technological skills of teachers can maximize the usefulness of e-learning.

2.4.6 Social Support

Support from home and environment plays a significant role the social support may include time and help from peers, teacher, society and friends. For e-learning a conducive learning environment is required and for maintaining conducive environment

social support is needed (Kwofie & Henten, 2011). The introduction of e-learning is hampered by the society's meager contribution. The implementation of e-learning can be made easier by ensuring contribution of every entity of the system

2.4.7 Gender

The e-learning implementation is also affected by issues of gender especially in developing countries. Those areas where there is low literacy rate among girls and males are more supported, such areas have more efficient users of technology among male. While female will be having less skills. All users should have equal skills in the domain of e-learning. In Ghana during 2000 it is studied that there were more boys getting education than girls. Such imbalance in education systems caused challenges to e-learning, because the modern education system and global competition requires technological competent both males and females (Kwofie & Henten, 2011).

Similarly, if we look at the challenges of teacher, they also have some concerns, there confidence in technological use, motivation, pedagogical aspects etc. Also effect the implementation of e-learning. Lack of skills among teachers creates hurdles to e-learning. Likewise, less motivated teachers do not put their efforts.

2.5 Technological Confidence of Teachers

From the perspective of teacher’s technological confidence is about using technological efficiently and smoothly. The ability of teachers to use technology for delivery of knowledge and skills is concerning element. The ability of teacher is a dominant factor on e-learning implementation and students’ achievement. The teachers who have low skills in technology will either 2.7177 avoid technology or use it in improper way that will result ineffectiveness in delivery of education (Kwofie & Henten,

2011). Such performance of teachers is not only obstacle for implementation of e-learning rather it also directly affects students' academics. Students become even more confused and less confident about technology when their teachers are unable to run technology smoothly.

Motivation and Commitment of Teachers

Commitment of students is not enough; strong commitment and motivation is required from teachers as well. The worth of e-learning should be exposed to teachers, so they show their interest towards it. If the teachers are not motivated towards e-learning they will automatically show resistance (Kwofie & Henten, 2011). The non-welcoming behavior of teacher also creates dissatisfaction among students, because if the teacher does not prefer proper use of technology in learning, they will obviously not be able to provide proper feedback to students, in such conditions students either tends to fail or disconnect with learning.

2.6 Competencies and Qualification of Teacher

A well-qualified teacher is capable of maintaining online and face to face learning effectively. A well-qualified teacher can play diverse roles in e-learning, where a teacher is needed to be a supervisor, facilitators, evaluator at the same time (Kwofie & Henten, 2011). Well qualified teachers always appreciate new innovations in education as they understand the need of change according to needs of era. Competencies among teachers help to reduce fear of failure and resistance towards technology is reduced. Qualification and competencies of teachers is a great contribution for successful implementation of e-learning.

2.6.1 Time

Preparation is needed for e-learning. The teacher tends to prepare activities, lesson and technological tools that are required for learning and teaching, and all this needs proper time. The amount of time available highly effects e-learning (Kwofie & Henten, 2011). If the teacher is not facilitated with proper time to prepare content, and learning activities then it will greatly affect e-learning implementation. Again, a failure of teacher for improper time management will affect students learning, so time allocation effects teachers' preparation of teaching and the level of preparation of teacher effects students' academic performance.

2.6.2 Course Challenges

Course challenges are also affecting factors these challenges include challenges in curriculum, challenges in pedagogical models, and subject challenges. Teaching and learning related challenges also come under course challenges. According to Brophy, (2000), well organized material and content supports learning and facilitates meaningful learning materials. Well design curriculum provides sequence and pathway for effective learning because it becomes easy to arrange learning activities. According to Chiu et al. (2007) and McKinney, Yoon, & Zahedi (2002) that for accuracy, ease of understanding and completeness information quality plays a significant role. DeLone & McLean, (2003), mentioned that the quality of information is measure on the basis of its accuracy, completeness, relevancy and its coherency.

Computer skills are highly required for better for e-leaning. For successful adaptation of e-learning computer literacy is important. According to Picciano & Seaman (2007), more knowledge about computer and internet will make the student confident and students will more accept use of e-learning. Lack of knowledge about e-learning leads to

frustration. According to Ozkan &Koseler, 2009; Selim, (2007), the input of teachers in e-learning also plays an important role, effectiveness of e-learning can be ensured through input of teachers. Likewise, in a research study conducted by Collis (1995), it is mentioned that technology and the implementation of technological both affects educational activities. The challenges in the way of technological implementation cause obstacles in learning and teaching activities. Webster & Hackley (1997), mentioned attitude of students and teachers towards technology and technology control affects the outcomes. Good mood probably boosts productivity. Similar to how timely responses, fairness, and a focus on interaction have a good impact on learning outcomes Sun et al., 2008; Webster & Hackley, 1997; Arbaugh, 2002; Chiu et al., 2007; Liaw et al., 2007; Lim, Lee, & Nam, 2007).

2.7 Course design

Curriculum is also a concerning element for e-learning. It's not a simple step to plan curriculum according to e-learning setup, because the content delivery through e-learning and normal classroom is different in e-learning we use different tools and electronic content, so the activities needed to be planed accordingly. The curriculum in hard form in soft form has different functions. That's why Andersson and Grönlund, (2009), suggested developing new curriculum for e-learning. One of the causes of failure of e-learning implementation is the deficiency of considerate of people about the difference amongst learning through technology and classroom-based education. Furthermore Karim & Hashim (2004), mentioned that curriculum and instruction should be revised in the light of modern needs of expertise. The curriculum should be aligned with the technological tools so it will be helpful for the teachers to use those

technological tools for knowledge and teaching purposes. An unaligned technology and curriculum can create difficulties for e-learning implementation.

2.8 Pedagogical Model

Pedagogy is an important factor element of learning because it decides the way to delivering the content. According to Andersson and Gronlund (2009), adopting pedagogical model for e-learning make it possible to shift learning approach from teacher centric to student centric. The pedagogical model creates an atmosphere where student take ownership of their own learning. likewise, Karim & Hashim, (2004), also mentioned that setting pedagogical model for e-learning enables to construct student centered environment. Pedagogical models facilitate us to design learning according to the nature of content and its level of difficulty. But not planning about the pedagogy creates hurdles to e-learning.

2.9 Subject Content

Subject content is basically the content that is being taught in the classroom. For e-learning implementation the subject content should be accurate, relevant, interesting, and up to date these features of subject content decides the efficacious implementation of e-education. If e-learning environment doses do not provide accurate and well managed information to students then it will demotivate the students, it will hinder the implementation of e-learning so poor managed subject content can be a barrier to e-learning. According Mpehle to Free availability of content on for all grades at all levels is essential, the electronic curriculum should be available, there should be sustained software, resources and tools. The facilitators and the receivers of e-learning should be encouraged to ensure make their effective contribution towards e-learning.

2.9.1 Teaching and Learning Activities

According to Andersson and Gronlund (2009), teaching and learning activities are also influencing factors for e-learning, as teaching and learning activities includes attractive design, fluency, teacher initiatives, continuous assessment of students and conducting poor work. A teacher plans teaching and learning activities differently for e-learning and normal classrooms. obviously, the activities through technology will be different than the direct classroom (Andersson, 2008). If teaching and learning activities are not planed according to e-learning than there will be hurdles for e-learning acquisition.

2.9.2 Localization

Pagram & Pagram, (2006), stated that localization is basically about adding similar taste that can be more familiar with leaners. The localization of content and technology is important because it helps the locals to adopt it easily, otherwise it will be difficult to implement. The needs of the local should be considered while introducing technology to them. The background of students and teachers should be considered and then technology should be according to localized, so it becomes not an alienated thing to them. Andersson (2008), also stated that the religious belief, the cultural background, local language and local needs should be considered, and technology should be localized according. The localization of technology increases the level of acceptance among students and teachers.

2.9.3 Flexibility

A rigid system does not facilitate students and teachers to decide the medium of learning, and approaches. Andersson (2008), stated that flexibility should be there, for

facilitation in examination, for selection of medium, and for selection of content. Flexibility have so many advantages as it provides options for students to choose their medium of learning, they can prefer multiple learning mediums like CDs, and video conferencing. In the absence of flexibility in learning system students are bound to particular learning approach no matter that relates to their interest or not (Kwofie, B., & Henten, A. (2011). Flexibly is crucial for e-learning implementation. Rigidity can challenge e-learning implementation.

2.9.4 Support Provided

Support is required for both teachers and students. They required support in different angles.

2.9.5 Support Provided for Students

The performance of students is based on the support provided. According to Andersson (2008), in traditional classrooms support is provided for students and their questions are being answered immediately face to face which helps to improve students learning and growth.it is said that support from teachers and other working staff in institutions contributes for better performance and better academic results (Kwofie, B., & Henten, A. (2011). While introducing e-learning it is important to ensure that support provision.in the absence of provision of support students will be discouraged and show lack of interest in e-learning, then it becomes a challenge for e-learning implementation.

2.9.6 Support for Faculty

The performance of faculty is also dependent on the support they receive. The teachers should be provided with technical support, training programs, and they should be assisted. Karim & Hashim, (2004), has stated that different teachers have different levels

of understandings, knowledge and technological skills.so support should be provided to them through well planned channel and this could be carefully implemented. Because the failure of institution in providing support, results into low motivation, low commitment and poor performance among teachers. The poor performance of teachers causes poor students' performance even students drop outs and poor academic performances are result of it. For proper e-learning implementation support provision for faculty should be ensured.

2.9.7 Poor Competencies in English

Computer mostly uses English language in different system and the content in e-learning is also written in English language.it is difficult to translate the whole content and develop computer languages in local languages. Such barriers decrease the confidence level of students in e-learning that is why oppose e-learning and technological approaches (Kwofie & Henten, 2011), mentioned in their research that at university level most of student feel difficulty in reading English documents, additionally the vague content made by the teacher have serious effects on students for long period.

2.9.8 Lack of Awareness

As e-learning is an emerging concept in developing countries, so there is lack of knowledge among teachers and students. A few numbers of people have the confidence to apt new things like technology and it benefits them. While there is large number of people who don't appreciate use of technology. In a university of Bangladesh, research is conducted to know the awareness level of students about technology, a scale was used, and it revealed that very few have awareness (Kwofie & Henten, (2011).

2.9.9 Unwillingness for Change

Changing a learning environment from a traditional system to a modern one is not simple it is considered. resistance for change is the biggest obstacle for change. research conducted by (Kwofie & Henten, 2011). aim at knowing the readiness for adoption of technology in learning system, the response of the respondent revealed that 69% percent individuals were unwilling to change their learning atmosphere.as compared to the new technological approaches they prefer to traditional approaches.

We can decrease the level of unwillingness by providing user friendly environment to students and teachers.by providing technological facilities and increasing feasibility in use can help us to develop positive perceptions towards e-learning. The frustration among individuals is because of the lack of resources, opportunities, lack of knowledge and skills in the domain of technology.

2.9.10 Privacy and Software Issues

The latest technology has brought many feasibilities and easiness in human life but the same time it controls all of our activities. We have added our data into technological tools, like social media even different applications demands us to put our basic information including e-mail id, phone numbers, and other information. For example, zoom, email, Facebook, teams and other applications requires the above mention information to run the app. So, it becomes concerning for people weather these apps are safe or not. Such insecurities make them less confident about use of technology. A research study conducted in Bangladesh has revealed that the piracy rate is 92% in Asia pacific this is the largest rate of piracy while it is fourth largest in the world. To make e-learning successful proper policies and rules should be followed, so users feel

secure while providing their data to different technological tools. The obstacles should be eliminated for successful implementation of e-learning.

2.9.11 Load Shedding of Electricity

Electricity is the basic facilitator to run technological tools, in the developing countries there are less electricity production due to which there are high load shedding issues. So, using technology in such circumstances is difficult. To overcome the challenges to e-learning electricity issues are needed to handeled.it is a real challenge for e-learning.

2.9.12 Ethically Harmful Internet Content

Internet is a place where we can find any kind of content, it can be unethical for a group of age, many parents don't allow their children to use internet because they fear that their children's will be exposed to internet. The unethical content at a certain age can affect students' mentality and physical and mental growth as well. That is why parents always want to have control on web to check all the activities their children's have done and are likely to do. A research study conducted by reveal that 75% parents are in favor of having control on the web so to control unethical activities of the child. The aim of parents is to protect their child from harmful websites.

2.9.13 Lack of Confidence

Confidence in any spectrum of life is crucial for everyone it provides the courage to perform certain tasks. Students in academic domain are not confident about their technological skills they even don't dare to operate computer systems. Such lack of confidence in technology creates challenges e-learning.in developing countries even at

university level students are not familiar to use of technology. By using a computer knowledge scale (Kwofie and Henten, 2011), has explored that the familiarity level to use of computer is low, students are not familiar to utilization of resources.

2.9.13 Internet Connectivity and Bandwidth Issues

Connectivity and bandwidth and connectivity issues are also the obstacles to e-learning. Due to connectivity issues e-learning is slow. Most of the backward areas have low internet bandwidth even downloading and uploading files becomes difficult. In Bangladesh the average bandwidth is 5.6 kbps. For example, in recent scenario many students from Gilgit Baltistan were from those areas that were having even having signals issues so for such people it becomes challenging to work online or learn online.

2.10 Contextual challenges

While contextual challenges are referring to the type of challenges that relates to the context of the organization or institutions. Aldowah, Ghazal, and B. Muniandy (2015), mentioned in their research that the challenges in terms of rules and regulation, culture of the organizations that occurs in e-learning comes under contextual challenges it also includes the context of the society. While discussing about the solutions for contextual challenges Ali and Magalhaes,(2008),stated that the reduction of contextual challenges will be possible when students, teachers, and organization need to do adjustments on their behalf Wang, Cowie, and Jones (2008), stated that contextual challenges includes the perceptions of instructors, perceptions of decision makers on e-learning, and understanding level of students, teachers, decision makers. All the stakeholders need to have a proper understanding regarding e-learning to develop a

positive attitude towards e-learning and to develop understanding about role of students and instructors. E-learning deployment is affected by a lack of understanding.

The unfavorable perception of the use of technology shows the resistance to change in the approach of learning. Sometimes people want to continue with existing systems and they don't want any change such behavior cause difficulties for adaptation of new things. Jager and Lokman, (1999), also said that new things look strange for people due to which they show resistance and rejection. Those students who are more comfortable with traditional face to face classes don't except any rapid change. Organizational culture, organizational support and students and teacher interactions are also important factors. While there is a lack of this form of engagement in an e-learning environment, there is a high level of it in traditional classrooms.. There for proper steps should be taken to enhance interaction among teachers and students in e-learning approach. Due to lack of proper interaction O'Donoghue, and Whitehead (2004), also said that there is more preference given by their students to face to face classes because of effective interaction. However, e-learning makes students efficient in sharing of knowledge and other diverse competencies.

Integrating technology in education requires a good infrastructure Orlando and Attar (2015), mentioned that teaching with technology is not a simple approach that fits in all situation rather it depends on the type of the technology in use and also it depends on the content of the curriculum that is being taught. While implementing technology in education challenges regarding integration of curriculum, teaching, and learning can occur. It reveals that e-learning is a factor of consideration to design teaching pedagogy and learning experiences but unfortunately it is taken for granted (Kirkwood & Price

,2014).Similarly Rucker & Downey, (2016), mentioned that the facilitators and teachers sometimes do not prefer to e-learning because they are not familiar to some of the technologies and they are just learning it, which cause disturbance and challenges for students as well. In the research study conducted by Gillet-Sawan, J (2017), it was mentioned that among the challenges in e-learning the isolated or passive learner is also a prominent challenge which occurs due to poor functionality and ineffective infrastructure of e-learning. Such poor functionality causes poor communication between teachers and students due to which the facilitators and the learners both become frustrated. In the process of e-learning the external factors are not responsible for ineffectiveness but personal factors contribute equally (Balanskat, Blamire & Kefala, 2006). The intrinsic motivation, commitment and readiness for e-learning also effect and cause challenges.

Likewise, a research study conducted by Leila Goose and Ronal van der Merwe (2015), stated that in order to cope with the challenges faced by students and teachers regarding e-learning, the educators, trainers, institutions, and stakeholders should collaboratively respond by providing support to the institutions and help the learners and community to implement e-learning effectively. While highlighting the importance of e-learning Schmidt, Tschida, &, Hodge (2016), mentioned that the e-learning approach provides multiple pathways and options for students to learn through different modes without any influence of time and space. It helps to seek further education effectively. Likewise, Salmon (2014), also said that the higher education institutions are now increasingly moving towards fully online and blended learning approaches. This is not only depended on face-to-face approach but using information technology to benefit the diversity among students.

2.10.1 Knowledge Management

According to Kwofie and Henten (2011), the knowledge management is as important as other element of learning. the successful implementation of e-learning is dependent on knowledge management, research-based knowledge, proper evaluation, and collaboration of institutions that are using e-learning in order to share experiences and ideas. E-learning units can be built mutually. In order to maintain knowledge research should be conducted. The concerns of teachers and students should be studied, problems should be explored and solutions should be suggested, otherwise the issues for e-learning cannot be minimized. If the proper knowledge construction and management is missing then the whole e-learning will get influenced because e-learning is based on technology which evolves with time so researcher is needed to be done with time up gradation of knowledge is necessary.

2.10.2 Funding and Economy

The implementation of e-learning is impossible without economy and funding. In e-learning setup both human resource and technological resource needs funding. Continuous funding are required for such projects. Funding is required for development of staff, content development, for research purpose, and for maintenance of technology. In the absence of funding all the above-mentioned areas cannot be sustained and it triggers e-learning implementation.

2.11 Training of Teaching Staff

The system of e-learning can only work if the teachers are well trained, and they have required skills. The failure of institutions to provide trainings and sessions regarding technological use, results into failure of e-learning implementation. There should be

ongoing training programs in order update knowledge of teaching staff. Trainings for teaching staff are crucial as they have a greater contribution for e-learning, this training program builds competencies among teachers, boost up their skills, and guide them for effective implication of instructional and educational activities. In the absence of technology, the successful implementation of technology is impossible.

2.12 Role of Teachers and Students

In a classroom setting, there are certain roles attached to students and teachers. The teachers are responsible for introducing wisdom to students, teach them about right and wrong, help to explore their capabilities, and guide them to construct knowledge. Likewise, students have also an important role to play they are responsible to respect their teachers and accept their directions. A teacher is basically a facilitator, so the students should not look for spoon feeding rather they should do research on their behalf as well. Too much dependency of both teachers and students can be a hurdle for e-learning implementation. So teachers and students should play their roles actively.

2.13 Attitude Towards E-learning and IT

According to Andersson and Grönlund, (2009), the beliefs and attitude of decision-makers, politicians and facilitators effects the use of online learning. Advancing technologies is dependent on the attitude of its leaders, and the level of interest they show towards technology-based education, because they are the ones who are responsible for introducing policies for education, generate funding's for educational projects etc. Likewise, (Kwofie, & Henten, 2011), Mentioned that the attitude of students and teachers also counts a lot in its successful implementation. If the attitudes of teachers and students are not corrected it will affect implementation of e-learning.

2.13.1 Rules and Regulation

Rules and regulations are needed for implementation of e-learning. Without imposing rules and regulations challenges can appear. It is important to ensure that required and important rules are made and being imposed in e-learning system so it can work well. In Ghana it is experience that there is absence of explicit rules and regulation, that's why they have been bound to conduct rules and regulation on time further mentioned that the reliability and authenticity of e-learning can be ensured without proper rules and regulations.

2.13.2 Impact of Social Context in Creating Contextual Challenges in E-learning

A research study conducted by Nyvang, (2003), stated that context according to its positive and negative aspects it can be a barrier or a support as well. A context that supports e-learning implementation is supporting factor for learning at same time a context that hinders the use of online learning is a hurdle for online learning. There are various developing countries that challenge higher education institutions face related to context. In a research study conducted by AAU (2001), it is mentioned that African universities still lack in proper implementation of e-learning system despite of their forefront. They are unable to assume such a prominent position in the field of e-learning due to the ICT revolution. Sife et al., (2007), stated that the due to poor infrastructure of ICT in African universities they face challenges in e-learning. Similarly, Nawaz and Kundi, (2010), mentioned that developing countries have similar issued regarding e-learning in many aspects. Even research has been done in the field of e-learning but still it lacks in practicality because of which the implementation has been facing several challenges, it has been difficult task to integrate ICT into curriculum. According to Mital,

(2007), integration of information technology has been praised but there are many misconceptions regarding interlinking personnel teaching style with instructional technology. Teachers are not practically implementing technological approach. The misconceptions and doubts limit implementation of e-learning despite of acknowledgement of benefits of instructional technology. According to Nawaz and Kundi (2010), context-specific solutions must take into account national context. Especially in developing countries to tackle the issues the perceptions of users should be measured and assessed. Nowadays, technology permeates every aspect of life. Our culture is not just literary or aesthetic; it is also technological and scientific. Sasseville (2004), who emphasized the need of integrating technology, stated that the inability to use ICT in education is due to the denial of the value of ICT. The integration of ICT is needed to be done according to the conditions of social context, Learning and social context cannot be separated, according to Loing (2005). So, it is necessary to plan learning activities in accordance with the culture and social setting. Likewise, according to (Zhao and LeAnna-Bryant, 2006), the media, education department, professional associations, and parents regularly pressure e-teachers to update. In a serious endeavor, the social justifications for an e-Project of e-Learning in HEI "cannot be overlooked" (gerfalk et al., 2006). "Difficulties may arise because social grounds are the major aspect in any context.Abdul Sattar Khan and Allah Nawaz (2013), has classified contextual challenges into two type 1) internal contextual challenges 2) external contextual challenges. Information technology use in education is significantly influenced by both internal and external variables (Stephenson, 2006). Both effects are present in the higher education institutions' (HEIs) structural design.

2.14 Internal Contextual Challenges

The internal contextual challenges are associated with human characteristics and organizational attributes.

2.14.1 External Contextual Challenges

The external challenges include government initiatives including government policies and fundings for ICT. Likewise, the social environment also comes under external contextual challenges.

Regarding contextual challenges Abdul Sattar Khan and Allah Nawaz (2013), presented a contextual puzzle e-learning in which different elements are interlinked for creating contextual challenges.

2.14 External Context and e-learning

According to Hagan,(2003), there is great conflict between what universities produce and what are the demands of market. The society expects university graduates to contribute in the areas of knowledge and skills (Ekstrom et al., 2006).But unfortunately, these dreams of society are incomplete as there is huge gap between theory and practice. According to Andriole (2006), there is a gap between theory and practice in the computing curriculum, which prevents it from reflecting the demands of the outside world. Likewise, Goddard and Cornford, (2007), In their research stated that the world is becoming shrink in the sense of time and space, due to globalization and global village, the authorities, governmental bodies are facing challenges regarding in supporting their educational institutions to become information and knowledge communities. The need of organizations are keeps changing with time as the modern organization requires technical

skills, technical talent so they can be able to fulfill the new digital needs of the market, These positions include network administrators, web developers, programmers, and security specialists. But unfortunately, there is lack of technical talent and failed to fulfill technical demands of the market. In the recent times people are now feeling lack of technical skills and knowledge that is why people are now working on it, Ezziane, (2007), stated that ICT courses are now being offered to people and the number of ICT trainings is increased, but still there is great need to improve the output of ICT. Improving the input in the domain of ICT will not be enough.

2.15 Government Policies and e-learning

Government policies also come under external factors. Though teachers, students and the suppliers are the direct entities of e-learning but all these requires support from government, as the implementation of ICT or e-learning requires technological equipment's and these technological equipment's can be provided by providing funds and economical support to educational institutions. The interest of government towards e-learning implementation in educational institutions plays a significant role. According to Aaron et al., (2004), governmental agencies are responsible for e-learning projects, project management, working conditions, and resource allocation regarding e-learning implementation. Likewise, Abrami et al., (2006), stated that the establishment of ICT committees, taskforce, money investment, and introducing computer-based pedagogy comes under government input for e-learning. Furthermore, in the context of India to make the ICT industry more strong government has concentrated over it and put efforts for its implementation (Mathur, 2006). Furthermore, according to Goddard and Cornford

(2007), through e-learning platform government can help societies and universities to perform new roles in this digital era.

2.16 Broader Social Context

The impact of ICT can be noticed easily as it has affected our daily life, our culture and out way of thinking.it is not only about technology and information rather it influences human lifestyle. According to Sasseville (2004), people have now open access to information through internet, and more people can access more accurate knowledge and information it leads to more globalize environment where people study other culture, understands, and adapt sometimes it can create stress among people. That is why Zubair et al., (2013), mentioned that education can play significant role to reduce such stress, and education can gradually help to sort out these external pressures. The technological pressure social pressure and work pressure encourages educational institutions to evolve technologically.

Md. Tofazzal Islam, Abu Sadeque, and Md. Selim's research study (2006), at Bangladesh Open University, explored some common challenges of e-learning that includes:

Reliability of technology; the implementation of technology is still difficult if it is not reliable.

Stability of technology: the continuous change in technology is a concerning point for beneficiaries and the providers of technology.

Ease of use and interface; technology should be updated with time and interest of users, and user-friendly technology is required so it become worthy for humanity.

Access and costs of equipment's: in order to update and install technology high funds are required. Technology is highly sensitive regarding its costs.

Maintenances and infrastructure: hardware and software are required for e-learning; it is platform that needs constant attention. We cannot ignore it after just installation; we need to keep it updated.

Equipment and skills: The planning and implementation of technology is precarious activity, because technology and economic conditions keeps changing.

However, after noting the difficulties associated with e-learning, Md. Tofazzal Islam, Abu Sadeque, and Md. Selim (2006), also covered the prospects for e-learning in the future, particularly in poor nations.They stated that to broaden the e-learning capacity efforts have been done. For instance, in countries like Australia e-leaning has been assisted on demand basis by improving access level to computers and internet facilities. Md. Tofazzal Islam, Abu Sadeque, Md. Selim further stated that e-learning has uncountable benefits in upgrading distance education and opening learning.

These benefits include:

- People can go on their own peace
- High quality internet helps to high quality course delivery
- Technology helps to cope with social and economic conditions
- e-learning provides courses any time anywhere
- saves learners time and cost

While talking about the survival of e-learning system in 21ist century According to Md. Tofazzal Islam, Abu Sadeque, and Md. Selim (2006), more economic support will

be required likewise various electronics will be required to make education flexible. In the scenario of Bangladesh, the awareness of the government has opened opportunity to adopt -learning to deliver distance education. Further they suggested that more research should be done in the field of e-learning so the needs of students and teachers can be identified and the barriers to e-learning can be highlighted.

2.17 Satisfaction among Teachers' Students and Teachers Regarding e-Learning According to the Existing Literature:

According to a researcher study (Aguaded & Dáz, 2010; Cabero, 2010; Ellis & Goodyear, 2010; Ginns & Ellis, 2009), students have a good attitude and are interested in e-learning since it is more engaging than the traditional method of learning. As with the passage of time the approach of human is keeps changing and the demands as well.so in the 21ist century we cannot bound the students to limit their selves to paper pencil learning rather they will automatically search for more advance approaches. According to Peng et al. (2006), students at different grades and under different circumstances interpret e-learning differently, but they are obligated to view it as a valuable tool whether they have received the right facilitation or not.. Peng et al (2006), also stated that gender differences are also there among males and females have different perceptions and attitude towards e-learning, as compared to female students' male students tends to have positive attitude towards e-learning.

The satisfaction level of students is depended on the type of resources they receive from facilitators and the technological setup. According to a research study conducted by Jung (2011), there are certain variables that effect the satisfaction level the aspects are quality assurance, assistance, credibility, technology assistance, contents,

there are also some other more important aspects that have more dominant effect on students' attitude towards e-learning these aspects are cultural level, characteristics of e-learning course, and behavior. Together these aspects build students attitude towards e-learning. The availability and calibre of resources determine whether a person has a positive or negative attitude. (Osuna, Tena & Almenara, 2016).

According to Ellis & Goodyear (2010), the satisfaction of e-learning environment relies on good learning environment, effective learning strategies, and learning though discussion. While on the other side the satisfaction of lecturers is also crucial because lecturer or teachers are the one who adopt e-learning pedagogies and plan activities and use e-learning tools to perform teaching, learning activities. Bollinger & Wasilik (2009), research work provides more specific aspects that contribute to lecturers' satisfaction in the domain of e-learning. Bollinger & Wasilik (2009), enlisted the factors into three groups.

A) Students Related Factors: In this domain more divers students can be facilitated; more learning opportunities can be provided to students to become part of a more communicative and interactive learning system so teacher introduce pedagogies that addresses diversity this helps teachers to ensure effective communication with students (Bollinger & Wasilik, 2009).

B) Teacher Related Factor: The outstanding performances of students encourages the teachers and promote interest in the use of technology. If the e-learning tools are effective in use and give good results, then teachers will be more satisfied with e-learning approach (Bollinger & Wasilik 2009).

C) Institution Related Factors: This domain is concerned with institutions elated aspects that include policies of institution, environment, and support. While adapting e-learning approach teacher requires support from their respective organizations. If the institutions have policies regarding e-learning, then it becomes motivating factor for teacher and they feel easy while introducing e-learning at their classrooms.it helps to eliminate challenges to e-learning implementation (Bollinger & Wasilik 2009).

2.18 Training of Teaching Staff, Barrier to e-learning

Romero (2011) noted that training should be provided to teaching staff and that trainings should be more comprehensive and includes all areas of e-learning. Research has indicated that training and enabling teaching staff on e-learning is important. The communication skills and technological skills among teaching staff is highly important for e-learning implementation. Tweddel,(2007), also stated that lack of communication among teaching staff is more challenging in nature than other technical issues, technical issues can be handled easily but lack of communicative skills and technological skills cannot be easily handled e-learning expects teachers to be able to do multitasking and play multidimensional roles. Bawane and Spector (2009), must be able to execute multidimensional tasks and they should have multiple range of activities. Because in e-learning teachers have to take control over the technological functions and simultaneously the classroom activities as well. Keeping eye on activities of students, online computer functioning's, monitoring, and delivery the content are the multidimensional activities that has to be balanced simultaneously.

Furthermore, Bawane and Spector (2009), have clearly identified some role of teachers in e-learning setup they suggested that a teacher has to play the role of technician, designer,

administration, and facilitator. The teachers have to manage human resource and functional resource. Additionally, the teaching competencies are also essential. Likewise, Kreber &Kanuka (2006), mentioned in their research that e-learning approach brings innovation of new approaches in learning and teaching as it helps to introduce collaborative practices into education which helps to ensure social learning. Additionally, for the context of higher education institutions Hernández (2013), indicate that the at higher education level it is important to find out the roles and competencies of teachers to build teaching and training initiative frame. In e-learning setups the systematized roles of teachers need to be highlighted. In a similar vein, Tena, Rosala Romero; Almenara, Julio Cabero; and Osuna, Julio Barroso (2016), conducted research and mentioned that teachers also agree to improve their competencies in e-learning by acquiring trainings, they agree to improve because they are aware of the changes and requirements that are associated with e-learning. Findings of the research study conducted by Tena, Rosalía Romero; Almenara, Julio Cabero; Osuna, Julio Barroso (2016), reveal that there is great need for future studies regarding e-learning and there is great need address the realities of introducing e-learning, human factors that affect e-learning, and factors regarding adaptation and use should be bring into research study. The sustained integration of ICT into education at the higher education level remains a key problem, hence these areas needed to be thoroughly explored.

In regard to the teaching faculty's competencies, Tena, Rosala Romero; Almenara, Julio Cabero; and Osuna, Julio Barroso (2016), identified elements affecting e-learning adoption. A) To start, there are a variety of tools that instructors' claim they can use synchronous and asynchronous communication tools with ease. According to the

research, teachers perform significantly worse when using these tools in the classroom yet using email and other fundamental tools was considerably simpler for teaching staff.

2.19 Approaches about role of ICT

E-learning can be broadly divided into two groups. Although there are many different perspectives on the use of ICT in higher education institutions, two broad categories may be identified are two broad categories of e-learning.

1) The instrumental approach

The instrumental approach considers technology as a tool it does not have any inherent vale rather its value lies in how it is being used. This approach limits technology to tools which also limits student's critical thinking skills and restricts them to only subjects, this method prevents pupils from exploring more generalized societal and local issues that can be brought up (Nawaz and Kundi, 2010). Technology is categorized under the instrumental approach as a neutral element.

2) The substantive approach

The substantive approach does not consider technology as a neutral thing, rather it claims that technology has both negative and positive effects on students, institutions, and over all society. Likewise, Nawaz and Kundi, (2010), in their research stated that technology brings social change it leads to standard application. The liberal theory of education and the substantive theory relates to each other because just like substantive theory the liberal theory also considers learning as an active activity, which is interconnect by different elements, it depends on collaboration. It is not only about collection of facts and figures.

2.20 Constructivism theory in e-learning

Constructivism theory by Vygostky and Burner, Koohang et al. (2009), is a dominant theory in e-learning derived from learning theories. This theory is based on the idea of construction of new knowledge; it focuses on mental processes that aim at building new meaning and building conceptual structure through reflection and abstraction (Dick 1991). Nyvang (2006), stated they the integration of pedagogy and learning models to make learning successful is essential. The integration of pedagogical principles into e-learning is crucial, because the implementation of e-learning into education without introduction of pedagogical principles will create challenges for e-learning.

Stephen Kigundu (2014), presented some principles of constructivism theory that guides to set pedagogical models that will be helpful for choosing instructional strategies and development of e-learning that will directly influence students' achievement. These principles support active engagement of students. The principles given by Stephen Kigundu (2014), Are helpful for implementation of e-learning system. The principles are following:

- Construction of knowledge is based on the ideas that already an individual knows.
- Experience provides knowledge
- The process of learning is beyond acquisition of knowledge, it includes construction of knowledge, learning should be interactive.
- Students should get benefited from what they are learning.
- Collaborative and interactive learning approach should be followed

- For reflection opportunities should be provided for students.

2.20.1 The benefits of LMS from the point of view of teachers and students.

According to Stephen Kigundu (2014), there are several benefits of LMS from the point of view of teachers. Including the security benefits, control over registered users, learner centric more than course centric approach, and sharing approach. Maintenance of links and records while from the point of view of students the benefits of LMS are the centralized learning environment, uniformity in content, learner centered approach, and time flexibility. According to Vecchio and Loughney (2006), It also motivates students towards sense of responsibility.

2.20.2 Contribution of tools in attainment of engaging e-learning

E-learning provided electronic learning resources to distant learners, and it was thought to be the new vehicle that would drive education to new learning methodologies, according to Vovides, Y., Sanchez-Alonso, S., Mitropoulou, & Nickmans, G. (2007).E-learning system cannot be implemented without e-learning tools for different kind of activities in e-learning approach different tools are required.

Content presentation tool	This kind of tools enables the individuals to generate content which ensures content engagement.
Collaboration tool	Cooperation and collaboration among students are facilitated by collaboration tools. Which results peer engagement

Assessment tool	Self-regulated learning and self-assessment is highly essential students' assessment tools encourage students to take responsibility of their own assessment.
Learning tools	There are e-learning tools which accommodates different types of learning, it doses only limit learning style to books rather it offers videos, images and animations.
Accesses tools	Access tools helps students to find out relevant material and it is time saving for students. They can easily ignore irrelevant material.it enable students to concentrate on new knowledge.

2.21 Prospects of e-learning

Goyal,Yadav, and Choubey (2012), conducted research in order to explore future prospects of e-learning. Goyal,Yadav, and Choubey (2012), mentioned that future investigation method is required for e-learning as it supports to find out gap or triggering points that hinders the development of e-learning likewise future investigation helps to prepare for future by improving the systems. Likewise, while discussing future prospects the importance of maintance and support is highlighted as these are crucial elements. According to (Juniu, 2005), the faculty of universities, students and teachers should be

trained continuously and their skills and knowledge regarding technology and its usage should be updated. Similarly (Carey & Gleason, 2006), mentioned that the individuals at campus should be trained professionally, they should be well prepared. Sirkemaa 2001 stated that the success of e-learning in higher education is depended on human elements rather than technological sophistication, but it requires a supportive system which can respond to the needs of users.

Likewise, while discussing future prospects in e-learning Bader Alfelaij (2015), recommended that particularly at higher education level teachers and students should use their smartphones as a resource and as a mean of support for their teaching and learning purposes. Bader Alfelaij (2015), further mentioned it that the use of smartphones for learning and teaching will help the teachers to reduce work load, it will also help to reduce time, and expenses. Furthermore, Bader Alfelaij suggested to conducted research (action research) in order to validate the usage of cellphones and triangulated analysis should be done.

According to Jephias Mapuva (2009), e-learning have created so much ease for students and teachers, additionally there is great need of conducive environment to achieve good results. While discussing future prospects Jephias Mapuva (2009), stated that students should have proper access to internet, institutional leaders should adapt themselves accordingly to technological environment, likewise further it is stated that optimism should be there among teachers and students regarding e-leaning. Jephias Mapuva (2009), mentioned that at higher education level prospects of e-learning remain bright because instructional leadership and young generation show confidence towards future of e-learning in education.

Certain key tasks must be carried out in order to develop a successful e-learning environment. The five measures Barker (2000) suggested to achieve a better e-learning environment are discussed below;

Web structure & internet sites:

In order to ensure proper access to learning resources, building web structure and internet sites that will help to improve e-learning.

Electronics and communication:

In order to improve learning and acquisition proper electronic and communication infrastructure is essential, its capable associated individuals to get benefit effectively.

Infrastructure

Automated assessment tools;

For self-assessment of progress, students require continuous feedback that provide them ongoing feedback.by providing automated feedback assessment tools, progress can be ensured among students.

Strategies; embedding appropriate strategies related to learning, interaction,

Communication and techniques of multimedia need to be embedded in learning system by applying required strategies. Electronic course; Barker (2000), stated that in order to manage and control access to system provision of electronic course management is important. Likewise, while explaining virtual learning system Everett (2002), mentioned a list of components, these components include;

- Dividing curriculum into elements so effective record keeping and assessment can be done.

- Under each element assessing students' performance specifically and analyzing students' achievement.
- Providing support for students in terms of learning resources, assessment and also providing them guidance.
- Provider online support of tutors.
- Managing online peer learning to ensure peer support.
- Maintaining communication is also an important element, it includes managing general communication, discussions, web access (Everett, 2002).

Wilson (2004), presented a framework that helps to develop a map for development regarding standards, specification, software stools, application and services, it also helps to aligned all these elements. The framework of Wilson (2004), is guided by several underlining principle including;

- For system and presses integration a services approach is needed.
- Commitment towards standards.
- Highlighting the importance of community involvement.
- Need for development and collaborative activities.
- The positioning of these approaches in an effective way (Wilson 2004).

Megarry, (1978); Martins et al., (2003), highlighted that the educational systems and technological change have difference in development speed, technological changes occur so quickly as compare to educational system. The difference in development cause delay between adaptation and availability. Conlan and Wade (2004), add to this idea and agree, stating that "twenty years of utilizing TCl for learning has consistently proved that choosing technological solutions over pedagogical soundness results in beautifully

designed systems that are worthless." By saying that it would serve to push the technology-driven e-Learning services and applications standards to satisfy the needs of successful learning and teaching," Laurillard (2002), emphasizes this even further. When taking into account the scenario, Ardito (2005), stated that one of the key objectives of an e-learning application should be to make sure that audiences can use and access technology. Technology developers should consider need and background of users to ensure profitability. For betterment of e-learning in future Dix (2006), further discussed that accordingly to students needs and learning styles e-learning system should become smart enough to adapt easily-learning system should assure high standards of usability and create natural environment for interaction and learning. Furthermore, it is mentioned by Riddy and Fill (2003), that e-learning should have attributes which ensures usability. Reddy and Fill (2003), determined usability criteria of e-learning by asking group of questions. These questions are related to, access-learning activities, quality of tools, availability of technology, role of instructors, internal/ external resource, and assessment.

Khaled Mahmud and Khonika Gope (2009), have studied the potential of e-learning its challenges and the prospects. They investigated some essential tips that can be more helpful to overcome e-learning challenges. Khaled Mahmud and Khonika Gope (2009), mentioned that government and institutions have to cooperate with each other to resolve the issues regarding e-learning. Some recommendations are recommended by Khaled Mahmud and Khonika Gope (2009), in their research study.

Connectivity and accessibility: Khaled Mahmud and Khonika Gope (2009) mentioned that the connectivity and accessibility should be improved.

Affordable prices: proper plan should be designed to buy technological tools at affordable price, such plan is needed.

Content of e-learning; the research mentioned that in the context of Bangladesh they can initiate developing national content system to link it with e-learning content development in the country. This approach can be adopted in other developing countries it brings coordination among national content and e-learning content.

E-learning policies; At national level there should be a committee for e-learning who will be responsible to design policies for e-learning and set standards for e-learning.

Mobile technology; mobile should be introduced as a learning tool; it is easiest tool to access learning material and for communication as well. According to Khaled Mahmud and Khonika Gope (2009), mobile phones contribute to increase acceptance for e-learning.

English language; English language should be improved among teachers and students because it is the technological language as well. universities should take step to improve proficiency of English.

Feedback; feedback always plays an important role in any sphere of life. in e-learning system feedback from students should be considered. Continuous feedback should be collected from students while implanting and designing technology-based education (Khaled Mahmud & Khonika Gope 2009)

While implementing e-learning the developing countries should follow footsteps of developed countries. They should analyze their activities and procedures of e-learning implementation.it can help developing countries to avoid mistakes and increases chances of success for effective e-learning implementation. Mazleena Salleh and Noorminshah

Iahad (2001), conducted research and surveyed four counties to do analysis of their success for the sake of comparison. Mazleena Salleh and Noorminshah Iahad (2001), mentioned some common practices of those nations who are successfully e-learning implementation. These common practices are following:

1. They have proper plans for e-learning, and they have vision for their e-learning programs
2. Their government supports them fully for implementation of e-learning-learning is supported by government policies, and financial support is provided.
3. They made segment of their goals. They introduce action programs yearly and these yearly action programs are funded by the committee to achieve the targeted goal.
4. They do believe in investment in internet they have make it possible for all to have access to internet because internet is the basic element to technological knowledge sharing, learning, and communication.in these developed countries they have improved ICT infrastructure and electricity availability (Mazleena Salleh and Noorminshah Iahad, 2001).
5. They do research because they consider research as a basic part of e-learning. likewise, they provide trainings and sessions regarding e-learning to improve skills and knowledge among users.

Likewise, A research study conducted in Nigeria by Omobolaji Ayomide Odegbesan *et al* (2019), revealed that the adaptation of e-learning is influenced by factors like performance, efforts, social influence, facilities and experience. The result of this

research study suggested that e-learning can be adopted openly if the technological results are good in other words if technology helps to improve performance, if it supports efforts, and facilitate related to cost access and time. Further findings revealed that technology can be adopted easily if it is easy to use and user friendly. Users prefer such technology which can be operated easily (Omobolaji Ayomide Odegbesan *et al* (2019). So, making technology user friendly and increasing its effectiveness can contribute to better implementation.

Cheolil Lim (2007), conducted research in Nigeria which aims at exploring prospects of e-learning. According to Cheolil Lim (2007), e-learning can be improved in two ways. The first step method of improving e-learning mention by Cheolil Lim (2007), is dynamic rather than static, a dynamic approach aims at facilitating new requirements of individuals. While a static approach is limited to traditional ways of learning which do not appreciate modern modes of learning and teaching. Considering the needs of changing world, the government initiatives of e-learning should be run by both government and companies, in which both parties become active and play active role. Similarly, Kang & Oh, 2006), mentioned that institutions should be motivated to implement advance and authentic programs of e-learning and problem- based and case-based learning should be introduced. Kang & oh, 2006), further mentioned that the evaluation of e-learning should be expanded from just examinations, it should include new trials and development of corporate learning programs. According to Cheolil Lim (2007), the second way to improve e-learning is to provide training programs to the individuals who are associated to e-learning. Likewise, organizations and institutions should take ownership of implementing e-learning, government should also encourage

implementation of e-learning. Piskurich, 2003; Lim, 2005), further mentioned that unequal access to e-learning should be considered and equal opportunities should be provided especially for those learners who are newly experiencing e-learning. Piskurich, 2003; Lim, 2005), further mentioned that the schooling and background should also be considered.

2.22 Critical Success Factor (CSF) Analysis

The study of critical success factor is crucial step for any activity happening around us because CSF is a notion that totally helps to find out that how things can be better executed, it guides for better accomplishment. The notion of studying critical success factors separately was first introduced by Daniel (1961), this concept was further reintroduced by (Rockart,1979). Critical success factors are the concerning areas the better quality of which can ensure successful performance of an organization, an individual an institution (Rockart,1979). Critical success factor analysis has been used to identify critical factors, for proper management, and to address required actions, CSFs can also be used to investigate the influences on technical advancement or its use. The definition of crucial success factors, according to Robson (1997), is "those few things within someone's job that must go correctly." ". According to the definition, persons who want to succeed should take these things into account. “McPherson and Nunes(2006), further stated that in particular situations the identification of critical factors can be beneficial, additionally it is mentioned that rather than evaluating whole programs the specific sphere of online learning should be focused this will help to find exact solutions of problems.

Bendell (1998), further discussed that the identification of elements is important to support successful implementation of e-learning, this also supports to set standards and meet those elements. The success of companies is measured by how well their smaller segments are progressing towards the desired outcome, according to (Bendell,1998). In other words, better performance in key indicators leads to better e-learning implementation. The critical success factors are further explained by Riddy and Fill (2003), they mentioned that CSFs are bigger picture of any things and these should be addressed on time to ensure successful implementation of e-learning projects. CSFs have been considered as a successful approach.

In conclusion, e-learning has developed into an essential component of the current educational environment, presenting chances to circumvent the difficulties traditionally associated with education and improving the quality of the educational experience. The incorporation of technology in educational settings has a great deal of promise, despite the many obstacles and difficulties it entails. E-learning can have a higher quality if it is properly planned, prepared, and students and teachers have access to the necessary internet facilities. This is beneficial for both parties involved. We are able to make the learning environment more approachable, interesting, and productive for everyone if we solve the difficulties that have been identified and make use of the benefits those e-learning offers.

CHAPTER 3

RESEARCH METHODOLOGY

This area of research informs about the approach of research selected for the study, the research design in which the researcher explains about suitable design for the study. This section holds information about the type of instrumentation, sampling technique and sample size as well. The section of research methodology is an important part of research because it decides the direction to conduct the study.

3.1 Research Approach

As this research study aims to analyze challenges confronted by students related to e-learning at institution of higher education, so quantitative research approach was followed for this research. This study was quantitative in nature, because quantitative approach facilitates the researcher to collect data from a large sample which helps to explore the phenomenon effectively. The data was collected through one questionnaire then was entered into the SPSS. Statistical techniques were used for analysis.

3.2 Research Design

This research study used a quantitative research approach. The purpose the research study was to examine the e-learning difficulties that undergraduate students at higher education institutions encounter. Research design for this study was descriptive and comparative in nature. Because the current research study aimed to investigate the e-challenges at university level. The research design was adapted in accordance to the objectives of the research study. As per mandate of four goals inferential statistics were

used to recognize the e-challenges confronted by undergraduates at university level in public sector universities of Gilgit Baltistan. This research study also followed descriptive investigation design in order to achieve the first objective of the research. The directed populations for research are under graduate students of the departments of Business Management, educational development and English language at public sector universities of Gilgit-Baltistan. Research questionnaire was adopted and modified on the foundation of the four main construct of theoretical framework of the research. A survey was carried out to find out the challenges faced by university students. The survey approach is an authentic source to assemble data from a large segment of population. As it is stated by (Fink & Kosecoff, 1998), that to gather the beliefs , feelings, views, perceptions and ideas of people survey is a an appropriate mean.

3.3 Population

The target population includes all available objects for which the data gathered can be used to make conclusion and get information for the research (Kothari, 2004). The population for this study all public sector universities was taken as per the Higher Commission website, (www.hec.gov.pk) and there were 2 recognized public sector universities in Gilgit Baltistan. Both universities were selected as they are having similar departments. The targeted populace for this research is B.S level students of Business Management, Educational Development and English languages from the public sector universities of Gilgit and Baltistan.

Table 3. 1

Population of the Study

University	Department of Business and management	Department of Educational Development	Department of English Languages	N
1	439	453	270	1062
2	400	400	370	1170
	839	853	640	2232

Source: Karakorum international university Gilgit Baltistan and university of Baltistan.

The table 3.1 illustrates population of the study. The population of University X from the three departments, business management is 439, the population of educational development is 453, and the population is 270 the total population is 1062. While the population of University Y, from business management the number of students is 400, the population of educational development is 400 and the population of English languages is 370, the total population of the respective departments from University Y is 1170. So the total population of common departments of both universities is 2232.

3.4 Sampling Technique

Sampling design is a certain plan for obtaining sample from a definite population. Stratified random sample technique was utilized for selection of data from entire population. The stratified random sampling approach is a sampling method in which the researcher divides the entire population into smaller groups, or strata, in order to choose samples from each group. According to Fowlers (2014), stratified random sampling reflects the exact portion in the population with relevant characteristics. Stratified random

sampling is most suitable sampling technique for this research study because the sample belongs to multiple groups.

3.5 Sample Size

The target population of this study was 2232, out of 2232 target population 400 students were selected as a sample for the study based on the sample formula proposed by Mugenda and Mugenda (2003). Mugenda and Mugenda (2003) claim that when the population is less than 10,000, a sample size of between 10 and 30% is a good representation of the target population, and thus 10% is sufficient for analysis. 17% of the target population was represented by the sample of the population using the aforementioned source. Sample data collected from the UOB and KIU is 193 and 207, respectively.

Table 3. 2

Sample of the research

	Departments	Selected sample
University 1		
	Department of Business Management	75
	Department of Educational Development	76
	Department of English Languages	45
University 2	Department of Business Management	67
	Department of Educational Development	69
	Department of English Language	68

Table No. 3.2 shows the selected sample of the study. The sample consists of four hundred (400) participants. One hundred ninety three (139) participants were from

university X, among which seventy five (75) were from Business Management, seventy six (76) were from educational development and forty five (45) were from department of English languages. Likewise from university Y there were two hundred seven (207) students among which sixty seven (67) were from business management, sixty nine (69) were from educational development and forty five students were from department of English languages.

3.6 Research Instrumentation

In order to collect the data, the researcher required a contextually relevant tool to find out the challenges faced by student at university level. In that condition, a relevant tool is crucial for the collection of data from an enormous amount of population (Gay and Airasian, 2003; Frankel,Wallen & Hyun, 2012). Therefore, the researcher adapted the research instrument of Ijaz Qureshi, (2012). The researcher asked for permission for tool adaptation through email. The adapted research instrument was based on the theory of Andreson and Grounlund. The researcher added more questions into the adapted tool and made changes in demographic section according to the need of topic. While adapting the instrument researcher considers the four groupings of e-learning challenges mentioned in theoretical structure by Andersson and Gronlund (2009), the four main challenges of e-learning indicated in this theoretical framework are 1) Individual challenges 2) Course challenges 3) Technological challenges and 4) Context challenges. The adapted instrument was modified for more easiness. The items of tool were further based on the sub elements of each indicator of the theoretical framework.

The Questionnaire was consisted of two sections: section A-demographics and information of the participants, and the section B was consisted of the items which are

divided into four domains of the theory of Anderson and Grounlund (2009), to explore the E-L challenges encountered by undergraduates at institution of higher education. The questionnaire had five-point Likert scale to measure the participant responses where 1= never,2=rarely 3=sometimes,4=often,5=always.

Section A: it consisted of demographics information related to the background of the research participant, which include their university name, gender, and department.

Section B: it carries the construct with total 55 items in all, based on the key four areas of e-learning challenges. The detail sections are presented as below:

Table 3. 3

Number of questionnaire items

Variables	Total Statements	Number of item
T-C	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18	18
I-C	19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34	16
C-C	35,36,37,38,39,40,41,42,43,44,45,46	12
CR-C	47,48,49,50,51,52,53,54,55	9
Total		55

3.6.1 Information of Demographic:

The participant's demographic information was added in order to gather data on firm variables for data analysis.

- University

- Gender
- Department

3.6.2 Five-point Likert Scale. Five-point Likert scale scoring was based on criteria i.e.

a) Never

b) Rarely

c) Sometimes

d) Often

e) Always

3.6.3 Instrument Validation: To ensure validity and credibility of the tool adopted tool, it was validated by content and methodological experts. After a conversation, each expert made a small change to the study instrument that was given to three experts for validation. The experts suggested to clarify wording of scale items, enhance their clarity and reduce ambiguity. Experts asses the relevancy of each item of scale and they suggested to remove some of the items due to lack of item relevancy .moreover experts suggested change the order of the items in the scale to improve the sequence of the questions. Likewise they suggested changes related to grammatical errors, sequential representation of items and suggestions for addition of relevant demographic information. The instrument was approved and validated by the experts after the researcher made the improvements they had recommended. As a result, the questionnaire's final form was created.

3.6.4 Pilot Testing:

Before congregation the research's final set of data, a pilot questionnaire was distributed among the student's public sector universities of Gilgit-Baltistan. Total 55 questionnaires were given to the students of Business Management, Educational Development and English Languages of public sector universities of Gilgit-Baltistan. The overall value for Cronbach's Alpha was recorded .80 indicating quite satisfactory reliability of the tool.

Sample for pilot testing

	Departments	Selected sample
University 1		
	Department of Business Management	10
	Department of Educational Development	11
	Department of English Languages	6
University 2	Department of Business Management	9
	Department of Educational Development	10
	Department of English Language	9

Table 3.4

Research tool Reliability

Cronbach's Alpha	Number of items
.80	55

Table 3.5

Subscale Reliability

Cronbach's Alpha	Number of Items
	Technological Challenges
.83	18
	Individual Challenges
.82	16
	Course Challenges
.85	12
	Contextual Challenges
.82	9

Overall Reliability measures the internal consistency reliability of all 55 items in the tool. A Cronbach's Alpha of 0.80 is generally considered good, which indicates that the tool as a whole has high internal consistency. Technological Challenges tool has 18 items, and a Cronbach's Alpha of 0.83, indicating good internal consistency among these items related to technological challenges. Individual Challenges tool has 16 items and a Cronbach's Alpha of 0.82, again indicating good internal consistency among these items that measure individual challenges. Course Challenges tool 12 items and has the highest Cronbach's Alpha of 0.85, suggesting excellent internal consistency among these items related to course challenges. Contextual Challenges tool has 9 items and a Cronbach's Alpha of 0.82, indicating good internal consistency among these items that measure contextual challenges.

Overall, the research tool appears to have good internal consistency reliability both overall and within each subsection, according to the Cronbach's Alpha measures. This suggests that the items within each section of the tool are closely related as a group, and are likely to be a reliable measure of each construct.

3.7 Data Collection

The data was congregated through self-administered survey. Researcher herself visit each university to collect the data. According to Fraenkal, Wallen & Hayun , (2015); Gliner, Morgan & Leech , (2009), the self-administration of the tool facilitate the researcher to collect highly effective response rate. The participants were then briefed about the purpose of the study, confidentiality of the data, and bout their willingness for voluntary participation. And provide clear instructions on how to score the adapted tool. The main headings and the demographic were explained to the students so they can easily understand the tool. As it is mentioned by Cohen, Manion & Morrison, (2011), that it is useful to address quires of research participant before collecting data as it is helpful in enhancing reliability of the data. As due to Covid the situations were critical so the researcher followed safety precautions to ensure the safety of the research participants.

3.8 Data Analysis

Determination of the current research is analysis of challenges faced by students regarding e-learning. The data was collected through one questionnaire then the data was entered to the SPSS Version 26. The researcher used Statistical package for Social Sciences (SPSS) for quantitative analysis. The researcher engaged statistical procedures such as descriptive statistics like mean for objective 1, the independent t-test for objective 2 and 3 and ANOVA for objective 4 to meet the current objectives.

Table 3. 6

Description of Data Analysis

Sr.#	Research Objectives	Hypothesis	Statistical Analysis
1	To investigate challenges faced by the students regarding e-learning at university level.		Mean
2	To compare e-learning challenges between the public sector universities in Gilgit-Baltistan.	There is no significant difference in the challenges faced by students in e-learning at the university level among public sector universities in Gilgit-Baltistan.	T-test
3	To find out the e-learning challenges among male and female students at university level.	There is no significant gender difference regarding the challenges faced by the students in e-learning at university level.	T-test
4	To find out the e-learning challenges among the department of public sector universities in G.B.	There is no significant difference among the departments regarding e-challenges at public sector universities.	ANOVA

3.9 Ethical Consideration:

The research participants were assured that the data would only be utilized for research while the data was being collected. Names and other identifying information, such as addresses, phone numbers, and email addresses, were not included in the questionnaire for the participants.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

In this chapter, the researcher has provided a thorough explanation of the administration and inference of data. Universities in Gilgit Baltistan's public sector provided the information for this study. A survey with 55 items about the difficulties students have with online learning was distributed by the researcher in the departments of business management, educational development and English languages. Descriptive statistics and an independent t-test were used to summarize and described the student data for objectives 2 and 3. To assess the data, the researcher used statistical techniques like an independent sample.

Table 4. 1

Distribution of students on the basis of Gender (N=400)

Gender	Frequency	Percent
Male	169	42.3
Female	231	57.8

Table 4.1 illustrates the frequencies of Gender of the participants. Data were collected from total of 400 students amongst which 169 were male which is 42.3 percent of the total participant and 231 were Female which is 57.8 percent of the total population.

Table 4. 2

University Wise Distribution of Students (N=400)

Universities	Frequency	Percent
University X	193	48.3
University Y	207	51.8
Total	400	100.1

Table 4.2 shows the number of participants from both universities. Out of total 400 participants, 193 were from University X which is 48.3 percent while 207 participants were from University Y which is 51.8 percent of the total Participants.

Table 4. 3

Departments Wise Distribution of the Students (N=400)

Departments	Frequency	Percent
Business Management	139	34.8
Educational Development	141	35.3
English Languages	120	30.0
Total	400	100.0

Table 4.3 illustrates the distribution of participants based on departments. There were 139 participants from Business management department which is 34.8 percent of the total participants while 120 participants were from English languages this constitutes 30.0 percent of the total participants. Additionally, 141 participants were from Educational Development which is 35.3 percent of the total sample.

Objective 1: To investigate challenges faced by the students regarding e-learning at university level.

Table 4. 4

E-Learning Challenges at University Level

Variable	**Mean**	**Remarks**
Technological Challenges	3.044	Sometimes
Individual Challenges	2.63	Sometimes
Contextual Challenges	2.66	Sometimes
Course Challenges	2.83	Sometimes
Total e.learning Challenges	2.7	Sometimes

Note .The mean value ranging from1.00-1.80= Never, 1.81-2.60= Rarely, 2.61-3.40= Sometimes, 3.41-4.20= Often, 4.21-5.00= Always.

Source adapted from Sozen and Guven,(2019).

Table 4.4 indicates mean of variables of e-learning challenges faced by students at institution of higher education i.e. technological challenges (3.0), individual challenges (2.6) ,contextual challenges (2.6), and the mean score of course challenges is (2.8). It is determined that public subdivision universities mean fall in the classification of sometimes.

Objective 2: To compare e-learning challenges between the public sector universities in Gilgit- Baltistan.

$H_0$1. There is no significant difference in the challenges faced by students in e-learning at the university level among public sector universities in Gilgit-Baltistan.

Table 4. 5

Comparison of e-learning challenges between public sector universities

	Name of university	N	Mean	t-value	Sig.
Technological Challenges	University X	193	3.0245	1.255	0.05
	University Y	207	3.1631		
Individual Challenges	University X	193	2.5431	5.320	.000
	University Y	207	2.7120		
Contextual Challenges	University X	193	2.5004	7.804	.000
	University Y	207	2.8152		
Crouse Challenges	University X	193	2.6534	8.329	.000
	University Y	207	3.0027		.000
E-Challenges	University X	193	2.68	8.86	0.00
	University Y	207	2.89		

The table 4.5 compares the e-learning challenges faced by universities in the public sector of Gilgit-Baltistan. Each university is given the mean scores for the various categories of e-challenges (technological challenges, individual challenges, contextual challenges, course challenges, and overall e-challenges).

For technological challenges, University X had a mean score of 3.0245, slightly lower than the mean score of University Y (3.1631). The t-value was 1.255, and the

significance level (Sig) was 0.05, indicating a marginally significant difference. Regarding individual challenges, University X had a lower mean score of 2.5431 compared to University Y (2.7120). The t-value was 5.320, and the significance level was 0.000, indicating a significant difference.

In terms of contextual challenges, University X had a lower mean score of 2.5004 compared to University Y (2.8152). The t-value was 7.804, and the significance level was 0.000, indicating a highly significant difference. For course challenges, University X had a lower mean score of 2.6534 compared to University Y (3.0027). The t-value was 8.329, and the significance level was 0.000, indicating a highly significant difference. Regarding overall e-challenges, the University X had a mean score of 2.68, slightly lower than University Y (2.89). The t-value was 8.86, and the significance level was 0.00, indicating a highly significant difference.

These findings suggest that there are significant differences between public sector universities in Gilgit-Baltistan regarding e-learning challenges. The specific types of challenges, such as individual challenges, contextual challenges, course challenges, and overall e-challenges, exhibit variations across the universities. These differences highlight the need for targeted interventions and support tailored to the specific challenges faced by each university in order to enhance the e-learning experience for students.

Thus, the hypothesis that “There is no significant difference in the challenges faced by students in e-learning at the university level among public sector universities in Gilgit-Baltistan” is rejected.

Objective 3: To find out the e-learning challenges among male and female students at university level.

$H_0$2. There is no significant gender difference in the challenges faced by students in e-learning at the university level.

Table 4. 6

Comparison of e-challenges based on gender.

E-challenges	Gender of respondent	N	Mean	t-value	Sig
Technological Challenges	Male	169	3.0677	1.295	0.03
	Female	231	3.1274		
Individual Challenges	Male	169	2.5847	2.402	0.007
	Female	231	2.6640		
Contextual Challenges	Male	169	2.6501	.268	0.000
	Female	231	2.6784		
Course Challenges	Male	169	2.7627	2.719	0.009
	Female	231	2.8865		
e-Challenges	Male	169	2.77	1.391	0.000
	Female	231	2.80		

The table above presents the comparison of e-challenges based on gender at the university level. For both male and female respondents, the mean scores for various categories of e-challenges (technological challenges, individual challenges, contextual challenges, course challenges, and overall e-challenges) are provided. For technological

challenges, males had a mean score of 3.0677, which was slightly higher than the mean score of females (3.0274). The t-value was 1.295, and the significance level (Sig) was 0.03, indicating a marginally significant difference. Regarding individual challenges, males had a mean score of 2.5847, which was lower than the mean score of females (2.6640). The t-value was 2.402, and the significance level was 0.007, indicating a significant difference.

In terms of contextual challenges, there was a negligible difference between males (mean score of 2.6701) and females (mean score of 2.6584). The t-value was 0.268, and the significance level was 0.000, indicating a highly significant difference, although the difference in mean scores was minimal. For course challenges, males had a mean score of 2.7627, while females had a higher mean score of 2.8865. The t-value was 2.719, and the significance level was 0.009, indicating a significant difference. Regarding overall e-challenges, males had a mean score of 2.77, while females had a slightly higher mean score of 2.80. The t-value was 1.391, and the significance level was 0.000, indicating a highly significant difference.

These findings suggest that there are significant gender differences in the challenges faced by students in e-learning at the university level. The specific types of challenges, such as individual challenges, course challenges, and overall e-challenges, exhibit significant variations based on gender. These differences highlight the importance of considering gender-specific factors and providing targeted support to address the unique challenges faced by male and female students in e-learning environments.

Thus, the Hypothesis that “There is no significant gender difference in the challenges faced by students in e-learning at the university level” is rejected.

Objective 4: To find out the e-learning challenges among the department of public sector universities in G.B.

$H_0$3. There is no significant difference in e-learning challenges among departments at public sector universities.

Table 4. 7

Comparison among departments regarding e-learning challenges within universities

a. Comparison Among Departments of University of X

e-learning challenges	Departments	N	Mean	F	Sig
Technological Challenges	Business Management	67	3.1455	6.479	.000
	Educational Development	68	3.4572		
	English Languages	58	3.1344		
	Total	193	3.2562	6.458	.000
Individual Challenges	Business Management	57	2.4534		
	Educational Development	68	3.8637		
	English Languages	58	3.9823	4.444	.000
	Total	193	2.2344		
Contextual Challenges	Business Management	67	3.7347		
	Educational Development	68	3.8333	11.422	.000
	English Languages	58	3.1222		
	Total	193	3.7755	14.229	.000
Course Challenges	Business Management	67	3.8432		
	Educational Development	68	3.2938		
	English Languages	58	3.3875	4.323	.000
	Total	193	3.3487		
E-Challenges	Business Management	67	3.3455	14.232	0.00
	Educational Development	68	3.2345		
	English Languages	58	3.2345		
	Total	193	3.4555		

The table 4.7 shows the comparison among the departments including educational development, business management and English languages. The mean scores for different types of challenges (technological challenges, individual challenges, contextual challenges, course challenges, and overall e-challenges) are provided for each department. Regarding technological challenges, the department of educational development had a mean score of 3.4572, which was significantly different from the Educational Development department and the English Languages department. The F-statistic was 6.479, and the significance level (Sig) was .000, indicating a significant difference.

For individual challenges, the English Languages department had the highest mean score of 2.7177, which was significantly different from the Business Management department. The F-statistic was 11.704, and the significance level was .000. In terms of contextual challenges, the Educational Development department had the lowest mean score of 2.5621, which was significantly different from the Business Management department. The F-statistic was 18.662, and the significance level was .000. For course challenges, the English Languages department had the highest mean score of 3.0361, which was significantly different from the Business Management department. The F-statistic was 8.088, and the significance level was .000.

Regarding overall e-challenges, the Business Management department had a mean score of 2.74, which was significantly different from the Educational Development department and the English Languages department. The F-statistic was 27.24, and the significance level was 0.00.

These findings suggest that there are significant differences among departments regarding the challenges faced by students in e-learning at the university level. The specific types of challenges, such as technological, individual, contextual, course, and overall e-challenges, vary across departments. These differences emphasize the need for targeted interventions and support to address the specific challenges faced by students in different departments within public sector universities in G.B. thus the Null Hypothesis "There is no significant difference in e-learning challenges among departments at public sector universities" is rejected.

Table 4.8

b. Comparison among Departments of University of Y

e-learning challenges	Departments	N	Mean	F	Sig
Technological Challenges	Business Management	72	2.5444	13.479	.000
	Educational Development	73	2.4653		
	English Languages	62	3.6445		
	Total	207	2.4543		
Individual Challenges	Business Management	72	2.3454	9.088	.000
	Educational Development	73	2.6294		
	English Languages	62	2.7177		
	Total	207	2.6305		
Contextual Challenges	Business Management	72	2.6385	10.764	.000
	Educational Development	73	2.5621		
	English Languages	62	2.8111		
	Total	207	2.6633		
Course Challenges	Business Management	72	2.7626	14.449	.000
	Educational Development	73	3.7329		
	English Languages	62	3.0361		
	Total	207	3.8342		

E-Challenges	Business Management	72	2.74	27.24	0.00
	Educational Development	73	2.72		
	English Languages	62	2.93		
	Total	207	2.73		

The table 4.8 shows the comparison among the departments including educational development, business management and English languages of University Y. The mean scores for different types of challenges (technological challenges, individual challenges, contextual challenges, course challenges, and overall e-challenges) are provided for each department. Regarding technological challenges, the Business Management department had a mean score of 2.5444, which was significantly different from the Educational Development department and the English Languages department. The F-statistic was 17.479, and the significance level (Sig) was .000, indicating a significant difference.

For individual challenges, the English Languages department had the highest mean score of 2.7177, which was significantly different from the Business Management department. The F-statistic was 11.704, and the significance level was .000. In terms of contextual challenges, the Educational Development department had the lowest mean score of 2.5621, which was significantly different from the Business Management department. The F-statistic was 18.662, and the significance level was .000. For course challenges, the English Languages department had the highest mean score of 3.0361, which was significantly different from the Business Management department. The F-statistic was 8.088, and the significance level was .000.

Regarding overall e-challenges, the Business Management department had a mean score of 2.74, which was significantly different from the Educational Development

department and the English Languages department. The F-statistic was 27.24, and the significance level was 0.00.

These findings suggest that there are significant differences among departments regarding the challenges faced by students in e-learning at the university level. The specific types of challenges, such as technological, individual, contextual, course, and overall e-challenges, vary across departments. These differences emphasize the need for targeted interventions and support to address the specific challenges faced by students in different departments within public sector universities in G.B. thus the Null Hypothesis "There is no significant difference in e-learning challenges among departments at public sector universities" is rejected.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The nature of the current investigation was descriptive. The study's main goal was to examine the e-learning experiences university students had.

The study's initial goal was to look into the difficulty's university-level undergraduates have with e-learning. For this determination, the researcher used the model of (Andreson & Gronlun, 2009), which demonstrates the four domains of e-learning challenges, including technological challenges, individual challenges, contextual challenges and course challenges. As per the first objective the data analysis was descriptive. The first objective's results were determined using mean.

The second objective of the study was to explore the e-learning challenges faced by male and female students at university level in public sector universities of Gilgit Baltistan. For this objective the same model was followed, as the challenges among male and female students were investigated on the same four domains of e-learning challenges proposed by (Andreson & Gronlun, 2009). Likewise, the 3rd objective of the study was to compare the e-challenges between public sector universities. The 4th objective was to explore the e-challenges among the department of business management, educational development, and English languages at public sector universities of Gilgit Baltistan. As per the demand of 2nd, 3rd objective inferential statics were made, and independent t-test was applied. While as per the demand of objective 4th inferential statistics were made,

and ANOVA was applied. Null hypothesis were made in accordance to the objective 2nd, 3rd and 4th in order to determine whether or not the objectives of the study were met. The current study's population included male and female students from the departments of business management, educational development and English language public sector universities of G.B. In order to accurately reflect the population, stratified random sampling was performed. Using stratified random sampling, a representative sample from each university was chosen.

In order to achieve the purpose of the research, the researcher adapted a questionnaire and collected data from public sector universities of Gilgit Baltistan. The questionnaire was consisted of 55 items which were further divided into 4 main domains accordingly to the theoretical framework suggested by (Andreson & Gronlun, 2009). The Cronbach Alpha Coefficient was used to test the reliability of questionnaire using SPSS 21 version. Once the data was collected SPSS was used to analyze the data.

5.2 Findings

On the basis of the data analysis, conclusions were reached. The following findings are detailed.

1. The mean of variables of e-learning challenges faced by students at university level i.e. technological challenges (3.0), individual challenges (2.6), contextual challenges (2.6), and the mean score of course challenges is (2.8). It is concluded that public sector universities mean fall in the category of sometimes. The mean value shows that the students sometimes face individual challenges, contextual challenges, course challenges and technological challenges.

2. The table 4.2 shows that there is significant difference between the public sector universities regarding e-learning challenges. The result designates that the mean value of University X (2.68) is less than the mean value University Y (2.89). This shows that the University Y is facing more e-challenges than University X.
3. Likewise, that table 4.3 reveled that there is significant difference between male and female students regarding e-learning challenges at university level. The result indicates that the mean value of female students is (2.80) is higher than the mean score value of male (2.77). The result indicates that the female students are facing more e- challenges than the male students.
4. The table 4.4 shows that there is a significant difference regarding e-challenges among the departments. As the mean score of business management (2.74), mean value of educational development (2.72), and mean value of English languages (2.93) shows that there is significant difference regarding e-challenges among the department.
5. Table 4.5 shows that University Y (3.06) slightly higher soccer than University X (3.02) on the aspect of technological challenges. Additionally, it was found that University Y has got higher score on than University X on different aspect. For Individual challenges University Y score was (2.71) compare to the score of (2.54) while for Contextual challenges University Y had a score of (2.81) and University x had a score of (2.50) and for Course challenges University Y (3.00) while University X (2.65). Overall, it was found that university Y has a higher score on all aspects of E-Challenges (2.89) than that of University X (2.65).

6. It was found that male had slightly higher soccer on the aspect of Technological challenges and Contextual challenges while female got higher mean than male on the aspect of individual challenges and course challenges. Overall, it was found that female had slightly higher score than male on E-learning challenges. (See table 4.6)
7. Table 4.7 shows that challenges faced by different faculties were different from each other. Some were facing technological challenges more than any other challenges while others were facing Contextual. So, the significant difference between department was found based on challenges (See table 4.7).

5.3 Discussion

Around the globe the concept of e-leaning is increasing day by day and Pakistan is one the countries practicing this concept in education at all levels especially at university level. The e-learning system is facilitating our education in number of ways and the distance education has been possible with e-learning approach. So, providing education without the hindrance of time and space is now become possible.

A careful examination of the e-challenges at public sector universities of G.B revealed that the public sector universities are facing e-challenges, including T-Challenges, C-challenges, I-challenges and Cr-challenges. The challenges were similarly analyzed on the basis of gender to investigate that either there exist gender differences regarding e-challenges or not. The results of the research revealed that students at university level are facing crisis , there is low internet speed, lack of computer labs, electricity failure occurs a number of time in a day, there are load shedding issues, the technological resources are not easily available in their area , for many students the technological gadgets are out of there economic range, the geographical and cultural

backgrounds is also effecting there e-learning process, and the female students are facing more challenges than the male students. The e-learning challenges are needed to be addressed.

But unfortunately, the results of study indicates, beside importance of e-learning and its implications in education system there are a lot of challenges students are facing regarding e-learning. According to the Inclusive Internet Index by UNESCO, which looks at over 100 countries across the world, Pakistan came 86th for availability, 57th for affordability, 71st for relevance of content and local language use and 64th for readiness.149. "Pakistan falls into the last quartile of index countries overall, and it ranks 24th out of 26 Asian countries. Notable among its weaknesses are by far the largest gender gaps in the index, in both mobile and internet access. According to UNESCO Low levels of digital literacy and relatively poor network quality are major impediments to Internet inclusion."150Pakistan is not the only country facing e-challenges the unindustrialized republics everywhere ecosphere are facing e-learning challenges. According to Inoocent & Masue (2020), students in different institutions have access to e-learning systems and they are having access to e-learning gadgets and internet but still there is lots of hindering point that triggers e-learning. Implementation of e-learning especially in evolving nations needs more planning. A research study by Tarus (2011), revealed that, completely equipped internet and more resources are required at the postsecondary colleges of poor nations. Because proper internet and gadgets are crucial to complete any e-learning task, without the availability of speed internet and skills to use e-learning gadgets students and teachers both will not be able learn and teach effectively. As the current research study also revealed that there are technological challenges

including slow internet, electricity failure, lack of computer labs and lack of training and guidance to use the e-learning tools. The unavailability of computer resources, internet connectivity, and technological problems is the acute complications in process of implementation of E-L infrastructure (Aleman-Meza, 2005). According to a UNICEF report 'How many children and young people have internet access at home?' globally only 33 per cent of children and young people have internet access at home.144 The situation is roughly the same in South Asia, with Pakistan being below average for the sub-region. While 74 per cent of the population of Pakistan has access to a 3G network, only 21 per cent of them subscribe to internet services.145 this could be because Internet coverage is patchy, weak or non-existent. because the cost of internet subscription is too high. Additionally, new investment tends to be in urban locations, even though the majority of the population lives in rural settings.14 Technological issues rise from technological aspects that revolve around tangible equipment and software related issues of technology. There are economic crisis, a lot of students cannot afford laptops, mobiles, and internet sources to execute e-learning properly Furthermore Sife (2007), also explored the encounters regarding E-L includes high technology cost, lack of training to use resources, and slow internet connection etc.

Likewise another major hindrance for e-learning is electricity failure, especially in winter season the people of Gilgti-Baltistan get electricity for 2 hours per day which obviously not enough so the students have to pause a lengthy period to recommence there E-L undertakings. According to a report by UNESCO some parts of the country lack access to internet and there are also surrounding security issues to address. Indeed, in 2018, only 71 per cent of the population143 had access to electricity at all, which, for the

purposes of powering digital devices needed to access internet and online content, but also other forms of remote learning delivery (TV and radio).In order to address the electricity issues alternatives can be introduced like solar panels and other hydro power plants because in the modern and competitive world any place cannot survive without the availability of internet. A research study conducted by Ahmed, Farid and Husssain in (2021), also highlighted importance of infrastructure and resources intended for exaction of E-L, many of students face serious challenges that does not allow them to successfully participate in e-learning. The students are not provided with fast internet thus they fail to catch-up with their class. Even to connect with the internet they have to specially move to internet café of other place, it is not provided to everyone on their door steps. Such challenges make it harsh for the students to become part of eLearning and it heavily affect their academic performance. According to a report by UNESCO Gilgit Baltistan needs to introduce plans for remediation and should have flexible calendars and there should be proper formative assessment and plans for teacher training and support, these can help to encounter the challenges faced in e-learning systems.

Likewise, there are gender-based difference regarding e-challenges, the far flung areas still do not provide equal opportunities for male and female students, the gender based biasness exits in many spheres of daily life. In the current study the female student's response reveled that they are facing more challenges than the male students. A research study conducted by Barriteau's 2001, p30), found that their Social ideals and philosophies establish physically separate and socially established boundaries for men and women in society. These philosophies and beliefs are affecting life of individuals in many aspects. The e-challenges are not only limited to internet and infrastructure,

appropriate e-learning skills are required to execute e-learning. Educators must be able to use the E-L interface, educators are not efficient in the arrangement of e-learning activity and content representation, students find difficult to comprehend such content and presentation in E-L which is not user friendly (Asogowa ,2011). As the universities are using LMS for e-learning, the respective universities should train there staff accordingly to aware them about the use of LMS and they should be trained about possible ways of making LMS more student friendly.

The conveyance of content in in person class then in E-L atmosphere is different, undergraduates found it difficult to download the heavy content online; they had internet issues which cause disturbance to attain the lectures in e-learning. So, the content for e-learning may be designed in accordance to its nature. A research study conducted by Markus (2008), stated that E-L is procedure that has its own teaching process; it is integrated with digital content which works with the help of networking and communication services. Therefore, in e-learning in order to eliminate the challenges it is important to reflect upon the pedagogy and the content. Another research done by Moree et.,al (2011), defines pedagogy and technology as a key elements for e-learning, there perspective both technical aspects and teaching, learning processes in e-learning. The cultural backgrounds and the geographical backgrounds of an individual also affect his/her efficiency in technology and its usage. In the remote areas people have less introduction of technology in their lives. Many students are new to e-learning and e-learning gadgets, in such conditions an urgent implementation of technology in learning becomes a challenges for the students who knows less about it. Hannon and D'Netto (2007), states that "while designing and delivering courses lecturers frequently fails to

proceeds into account the traditional variances". He argued that the cultural background affects the performance of students because learners of different backgrounds response differently to the in what way stuffs are organized in e-learning. the students who have more exposure to technology ,who have proper infrastructure for e-learning will perform differently than the students who belongs to the remote areas who have less access to technology , low internet speed and who are culturally diverse. Therefore in order to encounter such issues the models and notions anticipated to compact with cultural and individual differences in e-learning environment can be used, nearby is great need of content and course providers to take these difference into consideration (Callaghan et al., 2008). By considering the differences regarding cultural, geography, infrastructure and availability of technology, the issues of students can be easily encountered. The e-learning environments should be built in accordance to its culture, technological openness and geographical locations.

The study also emphasizes the findings of a study that reveal significant disparities in the challenges faced by university students engaged in e-learning, particularly across various academic disciplines. The findings of the study indicate that the difficulties encountered by students are not consistent throughout all academic departments, but rather vary in various ways based on the specific situation. The obstacles can be classified into several categories, namely technological, individual, contextual, course-related, and overall e-learning challenges.

One salient aspect of the subject under consideration is the existence of technological obstacles. These encompass concerns pertaining to the utilization of digital tools, platforms, and software that are necessary for the implementation of electronic

learning. The obstacles observed in different departments seem to vary in terms of their scope and characteristics, either due to differences in students' technical skills or department-specific technology demands. Disciplines that largely depend on multimedia resources may face distinct technological hurdles in contrast to those with limited integration of multimedia.

The discourse also encompasses the examination of individual challenges. The aforementioned obstacles are primarily to the students themselves and encompass aspects such as effective time management, self-motivation, and the need to adjust to the self-directed nature of online learning. The observation that these obstacles exhibit variation throughout departments underscores the impact of the academic discipline on students' perceptions and reactions to online education. Disciplines that need a higher degree of practical, hands-on work may pose unique individual obstacles when compared to those that are primarily theoretical in nature. The study additionally presents contextual obstacles, indicating that the wider educational milieu, cultural elements, and local resources can influence the e-learning encounters. The contextual elements within departments exhibit considerable variation, resulting in a wide range of difficulties that necessitate tailored solutions. A department located in a region with limited resources may encounter distinct issues pertaining to connectivity and accessibility in contrast to a department placed in a well-developed urban environment. The presence of hurdles particular to individual courses adds to the complexity of difficulties encountered in the realm of e-learning. Diverse academic disciplines necessitate distinct teaching methodologies and evaluation techniques, resulting in varying obstacles associated with these elements. Departments that prioritize collaborative projects may face distinct issues

pertaining to the efficacy of online teamwork and communication, which may not be as prominent in departments that emphasize coursework with a more individual-oriented approach.

Previous scholars have recognized the presence of concerns pertaining to accessibility, which include factors such as internet connectivity and the usage of appropriate technological devices like smartphones and laptops. Muilenberg and Berge (2005), identified certain impediments, such as financial constraints and limited internet connectivity, as relatively less significant hindrances to the adoption of online education. Nevertheless, the current study highlights the importance of accessibility as a key barrier in the realm of online education, particularly when considering the many geographical contexts in which the research was carried out. In contrast to the examination conducted by Muilenberg and Berge (2005), in a developed nation, the present study took place in a developing country where there is uneven availability of reliable internet connectivity, and a portion of pupils do not have access to portable devices that enable internet usage. The assertion made by Ahmed and Nwagwu (2006), is supported by their identification of many obstacles faced in the context of online education in developing nations. These issues include limitations in telecommunications infrastructure, the need for human resource development, and the formulation of effective information and communication technology (ICT) regulations.

The present study's results shed light on the lack of readiness among students in adapting to the online learning environment, particularly in the context of the ongoing pandemic. It is apparent that students may possess concerns regarding the numerous obstacles they may face while engaging in online learning, or they may view the current

pandemic period as a time primarily dedicated to fulfilling essential survival requirements rather than focusing on academic endeavors. One potential factor that may be influencing this situation is the students' significant reliance on traditional methods of education. According to scholarly literature, the implementation of new approaches or improvements to current ones is typically greeted with resistance due to individuals' strong loyalty to preexisting pedagogical norms and beliefs. The presence of this resistance has the potential to hinder the effective implementation of the complete online learning procedure. According to Steinmayr and Spinath (2009), it has been noted that motivational frameworks have a greater impact on student learning compared to overall intellectual capacity. Therefore, in cases when students do not possess a natural inclination for online learning, their internal motivation diminishes, leading to a decreased willingness to participate in the educational process. This supports the notion that the perceived deficiencies of electronic learning initiatives can be attributed, in part, to the unpreparedness of educational institutions and their stakeholders (Aydın & Tasci, 2005).

5.4 Conclusion

1. The purpose of this research was to evaluate and compare the e-learning challenges encountered by students in Gilgit-Baltistan's higher education institutions. Students in public universities in Gilgit-Baltistan frequently face e-challenges, including technological challenges, individual challenges, contextual challenges, and course challenges, according to the findings. It was reported that technological challenges were the most prevalent, while individual challenges were the least prevalent.

2. At the university level, significant gender differences were observed regarding e-challenges, with female pupils experiencing more e-challenges than their male counterparts. This highlights the need for gender-specific support and interventions in e-learning environments to address the unique challenges encountered by female students.
3. Regarding e-challenges, the universities in the public sector of Gilgit-Baltistan revealed significant differences. Specifically, University Y students reported encountering more e-challenges than University X students. This emphasizes the significance of individualized interventions and support to resolve the unique challenges each university faces in enhancing the e-learning experience for students.
4. In terms of e-challenges, statistically significant differences were found between departments of University X. The English Languages departments reported the greatest difficulties, while the Educational Development departments reported the least. These variations highlight the need for department-specific strategies and interventions to address the unique challenges encountered by students in various academic disciplines.
5. In terms of e-challenges, statistically significant differences were found between departments of University Y. The specific types of challenges, such as technological, individual, contextual, course, and overall e-challenges, vary across departments. These differences emphasize the need for targeted interventions and support to address the specific challenges faced by students in different departments within public sector universities in G.B.

5.5 Recommendations

1. Government may increase funding or advocate public private relationship to secure necessary resources for technological infrastructure
2. Digital literacy programs for students and faculty may be implemented to ensure that they are proficient in using technology or teaching learning resources.
3. Regular monitoring and evaluation of technology initiatives may be implemented to identify the areas for improvement and their cause.
4. Alternative solutions such as solar panels and hydropower plants may install to resolve the load-shedding issues in the region. As the load shedding problem resolves, students will have electricity for charging their laptops, smart phones, internet, and studying.
5. Multiple servers may be installed to improve internet speed and connectivity in Gilgit, as fast and dependable internet is essential for students to accomplish their homework and participate in e-learning.
6. To ensure that female students participate effectively in e-learning, parents may provide them with equal opportunities and support.
7. Establishing more computer labs, improving internet connectivity, and enhancing the e-learning system as a whole in public sector universities.
8. Workshops and training sessions may provide to improve e-learning and use resources effectively.

Future Recommendations

1. Societal and cultural factors, which may influence the implementation of e-learning at all levels of education, may be the subject of additional research.

2. To obtain a comprehensive understanding of e-learning challenges throughout the education system, future researchers may expand their studies to include elementary and secondary schools.
3. It is suggested that research be conducted in other remote regions of Pakistan to identify and address e-learning challenges unique to those regions, thereby fostering a more inclusive and effective e-learning environment.

5.6 Limitations

This study was carried out using sample from only two public sector universities of Gilgit-Baltistan, focusing on three departments including Department of Business and Management Sciences, Department of Educational Development and Department of Linguistic of English Languages. However, this study cannot be generalized to the students of other departments including natural sciences departments and also to students of school and college in Gilgit-Baltistan about their challenges. Due to limitations of time and resources this research study is only focusing students' challenges, however, not addressing teacher's challenges. Moreover, this study focused on only four types of challenges which Include technological challenges, individual challenges, contextual challenges, and course challenges. Students might face other challenges other than the mentioned challenges. Hence, this study cannot be generalized to other parts of Pakistan where infrastructure, languages, social norms, and literacy vary.

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APPENDIX A

TOPIC APPROVAL LETTER

NATIONAL UNIVERSITY OF MODERN LANGUAGES
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF EDUCATION

ML.1-4/2021/Edu

Dated: 10th December 2021

To: Sonaina
14 MPhil/Edu/S20

Subject: APPROVAL OF MPHIL THESIS TITLE AND SUPERVISOR

1. Reference to Letter No, ML.1-4/2021-Edu, dated 11-12-2021, the Competent Authority has approved the title and supervisor in 12th BASR meeting dtd 18th November 2021 on the recommendations of Faculty Board of Studies vide its meeting held on 9th September 2021.

a. Supervisor's Name & Designation
Dr Shazia Zamir (Supervisor)
Assistant Professor
Department of Education, NUML, Islamabad.

b. Thesis Title

Challenges of E-learning faced by Students at University level: A Descriptive Comparative Study

2. You may carry out research on the given topic under the guidance of your supervisor and submit the thesis for further evaluation within the stipulated time. It is to inform you that your thesis should be submit within described period **by 31st December 2022** positively for further necessary action please. ***(Time line attached)***

3. As per policy of NUML, all MPhil/PhD thesis are to be run on Turnitin by QEC, NUML before being sent for evaluation. The university shall not take any responsibility for high similarity resulting due to thesis run from own sources.

4. Thesis is to be prepared strictly on NUML's format that can be taken from (Dr Saira Nudrat, Coordinator MPhil/PhD)

Telephone No: 051-9265100-110 Ext: 2094
E-mail: snudrat@numl.edu.pk

Dr. Wajeeha Shahid
Head
Department of Education

Distribution:

Sonaina (MPhil Scholar)

Dr Shazia Zamir (Thesis Supervisor)

APPENDIX B

COVER LETTER FOR QUESTIONAIRE

E-CHALLENGES FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

Dear respondent,

I am M. Phil scholar (Education) doing research on the above-mentioned topic. You are required to fill in the questionnaire attached. The first part of questionnaire consists of demographic information. The second part is consisted of the questions that deal with e-learning challenges. You are requested to please fill it according to given instruction.

It is assured that the information provided by you will be used only for the research purpose and will keep confidential. Thank you so much.

Sonaina012@gmail.com

Research student: sonaina

Participant Signature

APPENDIX C

QUESTIONAIRE OF E-LEARNING CHALLENGES

Demographic Information

Please fill the following options.

S# 1	Gender	Male 1	Female 2	
2	University	University of Baltistan 1	Karakorum International university 2	
3	Department	Business management 1	Education 2	English 3

Please read the following statements clearly and tick the best opinion. The criteria for ticking is as follow: 1 Never, 2 Rarely, 3 Sometimes,4 Often,5 Always.

S#	Codes	# Items	Never	Rarely	Sometimes	Often	Always
		Technological challenges: **Technological challenges refer to challenges regarding installation of technologicalinfrastructure, availability of latest technology, internet access and other technological resources which are essential for implementation of e-learning.**					
			Never	**Rarely**	**Sometimes**	**Often**	**Always**
1	TC1	Sufficient e-learning technology is available at university.	1	2	3	4	5
2	TC2	There exists reasonably rapid internet service in my university.	1	2	3	4	5
3	TC3	There are sufficient computers available in computer lab of university.	1	2	3	4	5
4	TC4	I have access to tools which are required for e-learning.	1	2	3	4	5
5	TC5	I have technologicalaccess at home.	1	2	3	4	5
6	TC6	All required software's are available at my university.	1	2	3	4	5
7	TC7	I can download the content from the internet easily.	1	2	3	4	5
8	TC8	Using computers with username and password is safe.	1	2	3	4	5
9	TC9	The frequency at which I surf the internet is satisfactory.	1	2	3	4	5
10	TC10	I use software of e-learning (LMS) properly.	1	2	3	4	5
11	TC11	Electricity failure occurs number of times in a day.	1	2	3	4	5
12	TC12	There are enough computer labs available in my university.	1	2	3	4	5
13	TC13	Technological tools are available in my area.	1	2	3	4	5
14	TC14	I can use electronic tools confidently.	1	2	3	4	5
15	TC15	I can operate the software used in e-learning.	1	2	3	4	5
16	TC16	I can use internet easily in my area.	1	2	3	4	5

17	TC17	I have access to low-cost ICT alternatives (such as television, radio, telephone).	1	2	3	4	5
18	TC18	I can afford Technological equipment's for e-learning.	1	2	3	4	5
		Individual challenges: **Individual challenges include individual motivation, individual priorities, academic confidence and support from families regarding e-learning.**					
			Never	**Rarely**	**Sometimes**	**Often**	**Always**
19	IC19	I can communicate effectively online.	1	2	3	4	5
20	IC20	I am able to search information onthe internet.	1	2	3	4	5
21	IC21	I have necessary skills for usingan e-learning system.	1	2	3	4	5
22	IC22	I prefer face to face learning.	1	2	3	4	5
23	IC23	I devote enough time to study courses through e-learning.	1	2	3	4	5
24	IC24	I understand the difference between online learning and traditional learning.	1	2	3	4	5
25	IC25	My Proficiency at computer use is good.	1	2	3	4	5
26	IC26	I think my academic confidence affects my success in e-learning.	1	2	3	4	5
27	IC27	I feel motivated towards e-learning	1	2	3	4	5
28	IC28	I can use technology according tomy age level.	1	2	3	4	5
29	IC29	Age is a factor for creating e-learning challenges.	1	2	3	4	5
30	IC30	I can use technological tools without any gender biasness easily.	1	2	3	4	5
31	IC31	My university provides technological facilities Accordingly.	1	2	3	4	5
32	IC32	my parents support me for e-learning.	1	2	3	4	5
33	IC33	I face financial crisis to afford e-learning tools.	1	2	3	4	5
34	IC34	Technological tools are in rangeto my economic status.	1	2	3	4	5

		Contextual challenges: **Contextual challenges refer to challenges related to rules and regulation, culture ofthe organization's context of the society, government support and funding.**					
			Never	**Rarely**	**Sometimes**	**Often**	**Always**
35	CC35	University spending in support of students IT needs for e-learning is satisfactory	1	2	3	4	5
36	CC36	University Provides IT support to students for e-learning is on priority.	1	2	3	4	5
37	CC37	Technical staff is available for technical support.	1	2	3	4	5
38	CC38	I am aware of rules to use technology for e-learning.	1	2	3	4	5
39	CC39	My teachers effectively use e-learning tools.	1	2	3	4	5
40	CC40	My teachers guide me to use e-learning technology efficiently.	1	2	3	4	5
41	CC41	My attitude is positive towards e-learning.	1	2	3	4	5
42	CC42	I like to use technology in my learning.	1	2	3	4	5
43	CC43	Government policies support e-learning implementation.	1	2	3	4	5
44	CC44	I think the attitude of policy maker's effects e-learning systems of universities.	1	2	3	4	5
45	CC45	My parents allow me to use cellphone or other media apps.	1	2	3	4	5
46	CC46	I think the values and beliefs of society impact e-learning education.	1	2	3	4	5
		Course challenges **Course challenges include challenges in curriculum, Teaching and learning relatedchallenges, challenges in pedagogical models, alignment, and subject challenges.**					
			Never	**Rarely**	**Sometimes**	**Often**	**Always**
47	CRC47	My teachers help me for e-learning.	1	2	3	4	5
48	CRC48	My teacher designs e-learning activities accordingly.	1	2	3	4	5
49	CRC49	My subject content fulfills e-learning needs.	1	2	3	4	5

50	CRC50	I feel being involved in e-learning classrooms.	1	2	3	4	5
51	CRC51	In e-learning the content presentation activities are engaging.	1	2	3	4	5
52	CRC52	Access to course notes and materials is smooth in e-learning.	1	2	3	4	5
53	CRC53	Curriculum is well taught through e-learning	1	2	3	4	5
54	CRC54	The e-learning classes are student centered.	1	2	3	4	5
55	CRCS55	I have sufficient time to understand e-learning material	1	2	3	4	5

APPENDIX D

National University of Modern Languages
Quality Enhancement Cell
Sector H-9, P.O. Shaigan, Islamabad, Pakistan
Tel: +92-51-9265100 Ext 2246/2247
Web: www.numl.edu.pk

Dated: July 11, 2023

Faculty of Social Sciences

Subject: Turnitin-Similarity Index Report of MPhil Thesis of Ms Sonaina (Educational Sciences)

1st– Attempt

This is to state that **MPhil** thesis of **Ms Sonaina** has been run through **Turnitin Software on July 11, 2023**. Paper ID is 2129577115 and similarity index is **06%**. This is within the limit prescribed by the Higher Education Commission.

The Turnitin Similarity index report is attached for further processing please.

(Dr. Khushbakht Hina)
Director
Quality Enhancement Cell

Dean/FSS

13/7/23

National University of Modern Languages Quality Enhancement Cell

APPENDIX E

LETTER OF REQUEST FOR VALIDITY

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

Subject: Request for Validity Certificate

Respected Sir/Madam

I am sonaina scholar of M.Phil. Education at National University of Modern Languages, Islamabad and conducting research on "challenges of e-learning faced by students at university level: a descriptive comparative study"

Objectives of the study

1. To investigate the challenges faced by the students regarding e-learning at university level.
2. To compare e-learning challenges between the public sector universities in Gilgit-Baltistan.
3. To find out the e-learning challenges among male and female students at university level.
4. To find out the e-learning challenges among the Departments of public sector Universities in Gilgit-Baltistan.

The questionnaire has been adapted in the light of review of related literature by the researcher, having two parts, one is consisted of demographic data and other includes statements. The scale for challenges of e-learning is based on the model by Andersson and Gronlund (2009). This model is based on the four dimensions such as technological challenges, individual challenges, contextual challenges, and course challenges.

Kindly evaluate my questionnaire in terms of its content and construction, provide your valuable suggestions for its improvement and certify its validity by filing the certificate attached at the end of the document.

Sonaina

M.Phil Scholar

National University of Modern

Language Islamabad Pakistan

APENDEIX F

CERTIFICATE FOR TOOL VALIDATION

E-learning challenges scale

For The Research Entitled As

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

By

Ms.Sonaina,

M.Phil Scholar, Department of Education, Faculty of Social Sciences

National University of Modern Languages (NUML), H-9, Islamabad, Pakistan

This is to certify that the questionnaire adapted by the scholars towards her research has been assessed by me and i find it that it has been designed adequately to assess the Challenges of e-learning faced by students at university level based on the model of Andersson and Gronlund (2009), consisted on fourdimensions of challenges i.e., technological challenges, individual challenges, course challenges and contextual challenges.

It is considered that the research instrument, adapted for the research above titled, is according to the objectives of the research, assure adequate face and content validity.It can be used for data collection by the researcher with fair amount of confidence.

Name Dr. Sh. Tariq

Designation AP

Institute IIUI

Signature

Date

Dr Sheikh Tariq Mehmood
Assistant Professor
Department of Education
International Islamic University
Islamabad

APENDEIX G

CERTIFICATE FOR TOOL VALIDATION

E-learning challenges scale

For The Research Entitled As

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

By

Ms.Sonaina,

M.Phil Scholar, Department of Education, Faculty of Social Sciences

National University of Modern Languages (NUML), H-9, Islamabad, Pakistan

This is to certify that the questionnaire adapted by the scholars towards her research has been assessed by me and i find it that it has been designed adequately to assess the Challenges of e-learning faced by students at university level based on the model of Andersson and Gronlund (2009), consisted on fourdimensions of challenges i.e., technological challenges, individual challenges, course challenges and contextual challenges.

It is considered that the research instrument, adapted for the research above titled, is according to the objectives of the research, assure adequate face and content validity.It can be used for data collection by the researcher with fair amount of confidence.

Name Dr Azhar Mahmood

Designation Associate Prof

Institute IIUI

Signature

Date

Dr. Azhar Mahmood
Chairman, Department of Education
International Islamic University
Islamabad

APENDEIX H

CERTIFICATE FOR TOOL VALIDATION

E-learning challenges scale

For The Research Entitled As

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

By

Ms. Sonaina,

M.Phil Scholar, Department of Education, Faculty of Social Sciences

National University of Modern Languages (NUML), H-9, Islamabad, Pakistan

This is to certify that the questionnaire adapted by the scholars towards her research has been assessed by me. It is designed adequately to assess the Challenges of e-learning faced by students at university level. This questionnaire is based on model of Andersson and Gronlund (2009), consisted on four dimensions of challenges i.e., technological challenges, individual challenges, course challenges and contextual challenges.

It is considered that the research instrument, adapted for the research above titled, is according to the objectives of the research, assure adequate face and content validity. It can be used for data collection by the researcher with fair amount of confidence.

Name Dr. Farkhanda Tabassum

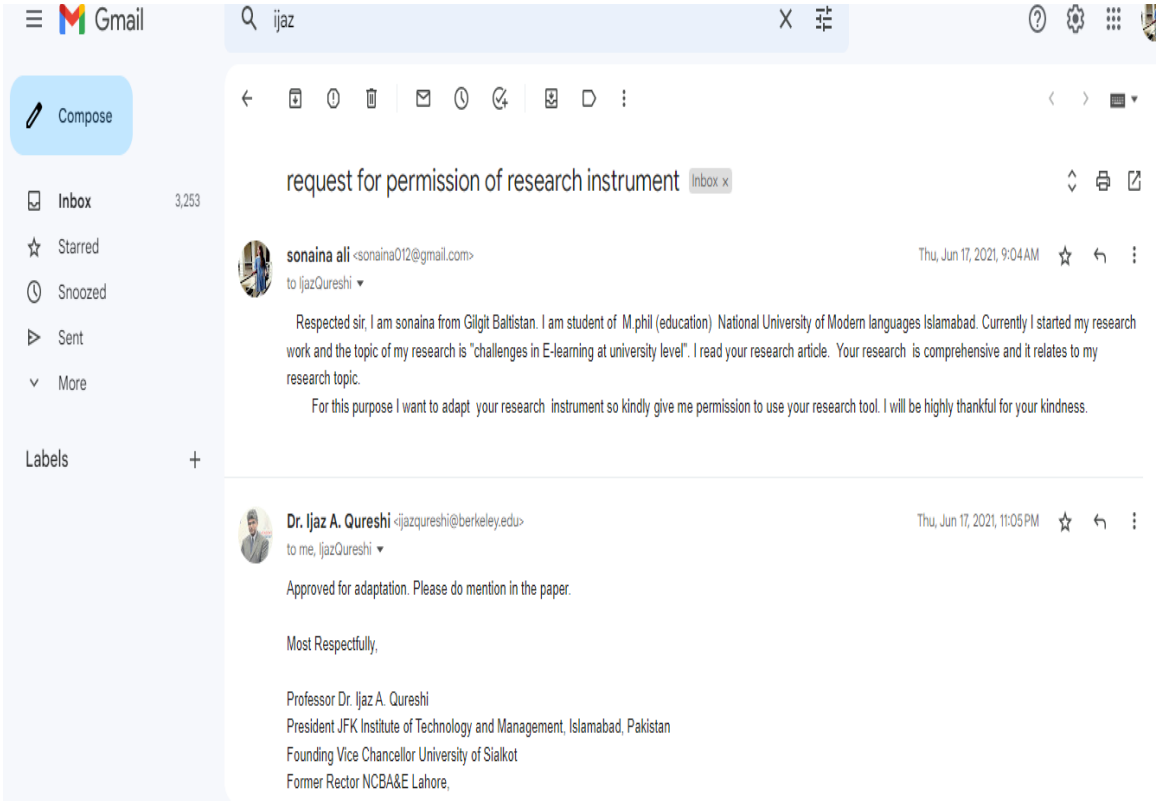
Designation AP

Institute NUML (Islamabad)

Signature

Date 28-1-22

APENDEIX I



Gmail

ijaz

Compose

Inbox 3,253

Starred

Snoozed

Sent

More

Labels

request for permission of research instrument Inbox x

sonaina ali <sonaina012@gmail.com> Thu, Jun 17, 2021, 9:04 AM

to IjazQureshi

Respected sir, I am sonaina from Gilgit Baltistan. I am student of M.phil (education) National University of Modern languages Islamabad. Currently I started my research work and the topic of my research is "challenges in E-learning at university level". I read your research article. Your research is comprehensive and it relates to my research topic.

For this purpose I want to adapt your research instrument so kindly give me permission to use your research tool. I will be highly thankful for your kindness.

Dr. Ijaz A. Qureshi <ijazqureshi@berkeley.edu> Thu, Jun 17, 2021, 11:05 PM

to me, IjazQureshi

Approved for adaptation. Please do mention in the paper.

Most Respectfully,

Professor Dr. Ijaz A. Qureshi
President JFK Institute of Technology and Management, Islamabad, Pakistan
Founding Vice Chancellor University of Sialkot
Former Rector NCBA&E Lahore,

APENDEIX J

Appendix

Certificate of Proof Reading

PROOF READING CERTIFICATE

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

By

Ms. Sonaina

National University of Modern Language, Islamabad

It is to certify that the research work titled "Challenges of e-learning faced by students at university level: A descriptive comparative study" submitted by the M.Phil. Scholar Sonaina has been checked and proofread for language and grammatical mistakes.

Name: Wali Farooqui

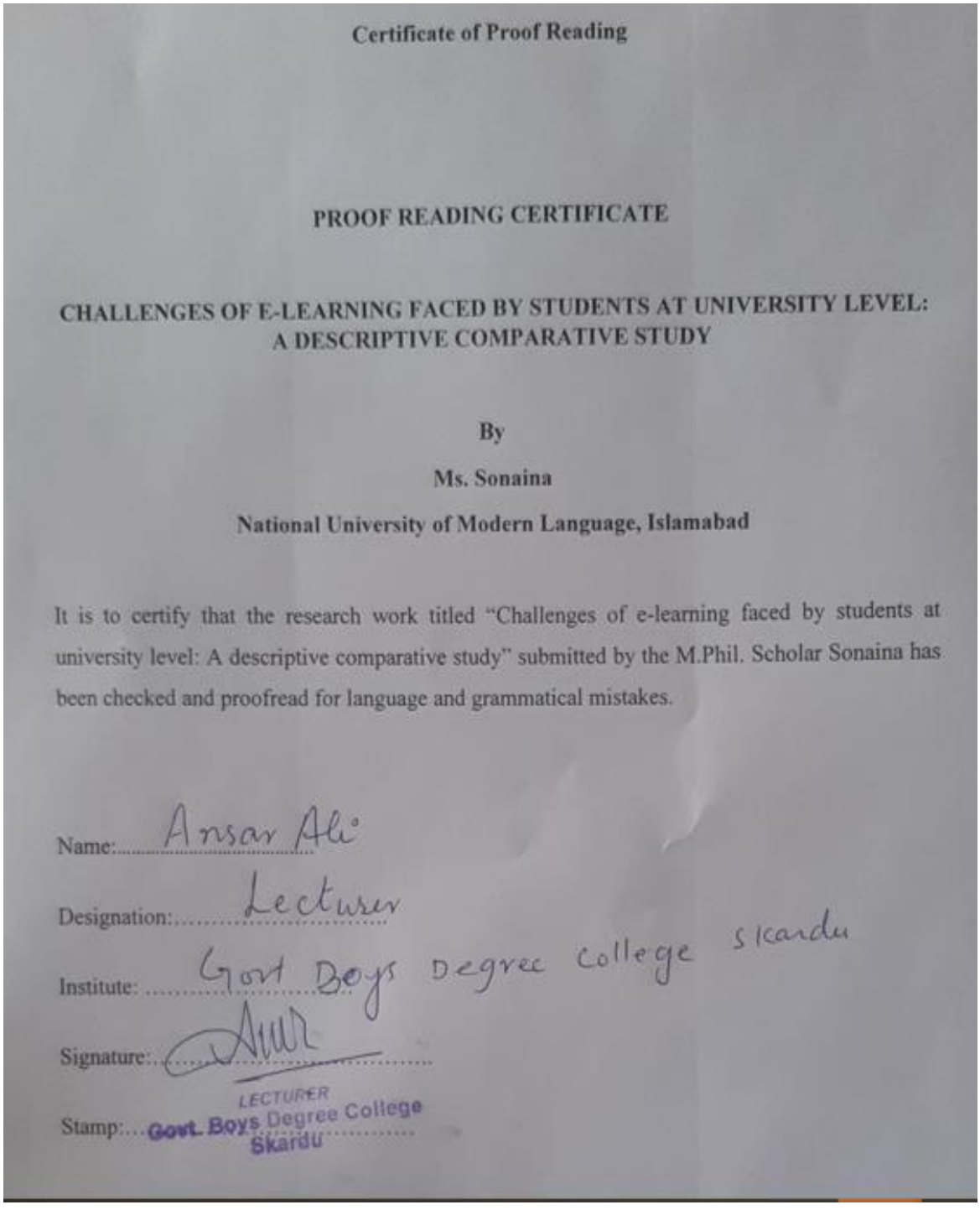
Designation: Research Officer

Institute: Institute of Policy Studies

Signature:

Stamp:

APENDEIX K



Certificate of Proof Reading

PROOF READING CERTIFICATE

CHALLENGES OF E-LEARNING FACED BY STUDENTS AT UNIVERSITY LEVEL: A DESCRIPTIVE COMPARATIVE STUDY

By

Ms. Sonaina

National University of Modern Language, Islamabad

It is to certify that the research work titled "Challenges of e-learning faced by students at university level: A descriptive comparative study" submitted by the M.Phil. Scholar Sonaina has been checked and proofread for language and grammatical mistakes.

Name: Ansar Ali

Designation: Lecturer

Institute: Govt Boys Degree College Skardu

Signature:

Stamp: LECTURER Govt. Boys Degree College Skardu