P-ISSN 2664-0422	Pakistan Social Sciences Review	Jul-Sep 2024, Vol. 8, No. 3
O-ISSN 2664-0430	https://doi.org/10.35484/pssr.2024(8-III)06	[75-92]

Pakistan Social Sciences Review
www.pssr.org.pk

RESEARCH PAPER

Promotion of E-Learning among Students: Role of University Libraries

[1]Umair Sharif*, [2]Iqbal Hussain Asad and [3]Nusrat Ali

1. M. Phil Scholar, Department of Library & Information Management, Faculty of Arts of Humanities, Superior University, Lahore, Pakistan
2. Department of Library & Information Management, Faculty of Arts of Humanities, Superior University, Lahore, Pakistan
3. Ph. D Scholar, Department of Information Management, The Islamia University of Bahawalpur, Pakistan & Deputy Librarian, Government College Women University Sialkot, Pakistan

***Corresponding Author:** umairsharifcr@gmail.com

ABSTRACT

The primary objective of this research was to examine the current state of e-learning promotion among students and the role of university libraries in Punjab. The study's goals were, to document librarians' personal opinions about using e-learning platforms in libraries, to look into librarians' opinions regarding the necessary e-learning tools, to determine the advantages and degree of satisfaction with e-learning adoption in Punjab's public and private university libraries, and to comprehend the difficulties university libraries encounter while implementing e-learning techniques. A questionnaire was used to gather information. The study's target demographic consisted of university librarians of the Punjab from both public and private sectors. Universities provided their libraries with data, which was gathered using a convenience sampling technique. A total of 144 university librarians provided the information. According to the study, the majority of library professionals use e-learning platforms in their libraries, and most of them are still in the process of implementing them. This indicates that library professionals understand the value of e-learning in the digital age and are cognizant of its necessity. Additionally, this study showed that the majority of professionals favored using, Zoom, Microsoft Teams and MOOCs, among other e-learning platforms. The majority of participants in this study indicated that they preferred to use e-learning technologies that allowed for screen sharing. The majority of respondents faced a barrier, "Lack of skilled staff," which is highlighted in the report as well. Another significant obstacle that prevented the introduction of e-learning systems, according to the respondents, was "Lack of IT equipment.

KEYWORDS Digital Library, e-learning, Promotion, University Libraries

Introduction

The landscape of education and research has undergone a profound transformation with the advent of e-learning and online services. Traditional methods of acquiring knowledge and conducting research have given way to a digital revolution, ushering in an era where information is accessible at the click of a button. In this paradigm shift, university libraries have emerged as pivotal institutions, assuming the responsibility of providing seamless access to an array of digital resources, including e-books, e-journals, and online databases. This evolution is a reflection of technological developments and a response to the changing needs and expectations of students, faculty, and researchers (Ali & Naveed, 2020).

In the context of Pakistan, the combination of e-learning and online services into the fabric of higher education has been important. Conceding the capacity of these tools to improve the learning experience and facilitate research activities, most universities in the country have boarded on the journey of emerging their online library systems. However, the effectiveness and extent of the utilization of these digital repositories within the academic community remain covered in uncertainty. This lack of clarity raises crucial questions about the impact of these digital initiatives on the academic performance of both students and faculty (Aslam et al., 2022).

The objective of this study is to explore into the details of e-learning and online services provided by university libraries in Pakistan. By analyzing the current state of these digital repositories, the research aims to discover patterns of usage, detect potential challenges, and evaluate the overall effect on the academic background (Bhatti et al., 2023). The study recognizes that the successful execution of online library systems goes beyond the mere provision of digital resources; it covers to user commitment, availability, and the incorporation of these services into the educational and research processes (Shoaib et al., 2020).

The vigorous nature of the e-learning industry introduces another layer of intricacy. Persistent changes in platforms, technologies, and teaching techniques require an active response from university libraries to stay pertinent. Failure to update e-learning platforms and resources in line with developing technological landscapes diminishes their impact in promoting e-learning among students, as the resources become obsolete and less aligned with changing preferences.

To crack the full potential of e-learning and enhance the role of university libraries in its promotion, it is vital to address these complex challenges. By tackling issues of approachability, integration, information literacy, relationship, and technological adaptability, university libraries can enhance the usability, applicability, and efficacy of e-learning efforts. This empowers students to squeeze digital learning and exploit on the wealth of resources at their discarding, fostering a more energetic and effective educational environment.

Literature Review

LIS professionals need to be aware of and at ease with the latest technological advancements, particularly as academic libraries take on a bigger role in helping students access the wealth of digital materials made possible by e-learning and mobile technology. Notably, e-learning and mobile technologies will be facilitated by the growing usage and falling costs of ICT in academic libraries and higher education institutions (Ali et al., 2024). Future development should take into account the creation of mobile-friendly interfaces for e-resource access in libraries, support for librarianship training, and additional research on various techniques. E-learning modules that promote social interaction and efficient use of mobile technologies should also be taken into account (Ali, 2018; Allen & Taylor, 2017).

E-learning and socially interactive education are employed as instructional methods. While e-learning or open learning runs counter to conventional education in that it places a certain amount of distance between the teacher and the student, social interactive education is recognized as the traditional style of instruction in which students and teachers engage face-to-face. With e-learning, students from remote locations or those in the workforce can improve their qualifications at any age or time and receive education right at their doorstep (Aslam et al., 2022). The broad usage of

instructional training is facilitated by e-learning. E-learning is better than traditional learning methods and offers several advantages. The most practical way to get a higher education degree is through online study (Shoaib et al., 2022). Many students use a flexible, self-paced educational approach in order to complete their degrees. The researchers' assessment of technology in education aligns with the idea that technology is essentially neutral when it comes to education. It resembles a hammer. The hammer is capable of being used for both building houses and torturing people by crushing their skulls. It doesn't care (Salamat et al., 2018).

E-Learning in Higher Education

E-learning is starting to have a significant impact on higher education, giving professionals a vibrant setting in which to develop (Dobrota et al., 2012). The need to retain and improve skills and competences as well as technology advancements and innovative advancements that have expanded the reach of subject matter teaching are the two main factors driving interest in e-learning (N. Ali et al., 2024). The most recent technology is too costly for a developing nation like Pakistan, where e-learning is still in its infancy (Lopes et al., 2022). The Virtual University of Pakistan is the only university offering online/distance learning courses; other notable institutions include CASE Islamabad and IBA Karachi. The majority of Pakistan's highly regarded universities incorporate multimedia in their classrooms, utilizing computer-mediated learning (Razzaq et al., 2018).

Pham and Ho (2020) stated that the student-centered approach is a new tactic that has garnered interest worldwide for its potential to raise the caliber of services provided by higher education. As "their customers," students should receive the finest possible care from universities. Providing the finest possible educational experience leads to satisfied students, and satisfied students become loyal customers (Naveed et al., 2023). Student outcomes are the final gauge of an online learning program's effectiveness in terms of satisfaction, goal attainment, and intended future behavior (Rasheed et al., 2022). Universities must evaluate student results from their e-learning experiences because this is the foundation for bettering service delivery (Gherheş et al., 2021).

Needs and Training Strategies in E-Learning Systems

In the context of higher education, a number of techniques are employed to identify and meet user demands in the new E-earning system. These techniques include surveys, interviews, and varying degrees of user input during the system's development. Nonetheless, a lot of advice suggests that in order for users to successfully integrate their needs into the system (Dangaiso et al., 2022). It is contingent upon the consumers' level of computer literacy, though. In order to find students who can support the development team with their technological skills, developers need to work closely with department heads. In order to maximize the benefits of emerging technologies for their work environments, educators, learners, and administrators alike require proper training (Kang et al., 2024; Oh & French, 2004).

It takes time to reach the point where you can fully control how to utilize an e-learning system, but training has to be planned so that each user has a solid foundation before they continue to learn new systems by continuously utilizing the tools and techniques available (Nawaz & Khan, 2019).

Educational Resources for E-Learning

Students occasionally use the internet to look up and obtain academic materials, and as a result, information about how they utilize this channel professionally. While working on their projects and theses, students use the internet to access the library, online books, journals, and any other educational resources (Shahzad et al., 2023). Since e-books, e-journals, and e-newspapers are more convenient than hard copy, the majority of users prefer to visit the internet to obtain information. The internet has made correct material searchable and easy (Safdar & Khan, 2020).

Siddiquei and Khalid (2020) described that educational facts of Pakistan are unfortunate whereas e-learning is at its rudimentary stage in higher education institutes (HEIs) regarding its growth and execution. In this reference, The Government of Pakistan (GoP) is working hard to ensure that every region of the nation has access to high-quality education (Ali, Shoaib, & Abdullah, 2023). Additionally, the Ministry of Education launched the Virtual University of Pakistan (VUP) and Allama Iqbal Open University (AIOU) remote learning programs, similar to those in many other South Asian nations. In keeping with this, the Higher Education Commission (HEC) has introduced a number of significant projects, including the National Digital Library, Pakistan Education and Research Network (PERN), and Online Lecturing and Net-Meeting via IP-Based Video Conferencing System. In conclusion, there are several obstacles in the way of Pakistan's e-learning adoption; yet, HEC is leading the way in this area by adopting noteworthy initiatives (Shoaib et al., 2021).

Strategies for Effective E-Learning

In order to encourage e-learning, university librarians must take a calculated stance. The services provided by libraries have changed significantly as a result of new learning models including open and remote learning, as well as the development of technology and digital platforms (Pham et al., 2019). Electronic media such as intranets, extranets, digital versatile discs, video conferencing, televisions, satellite, audio/video tapes, and various e-learning management systems like Moodle, Classroom Board, and Blackboard are examples of these technologies and tools (Wahid et al., 2020). E-learning management systems must be integrated with libraries' services and material. Furthermore, libraries have to create more content and platforms enabling access to digital resources and services (Siddiquei & Khalid, 2020).

The Challenges of E-Learning Adoption in Pakistan

E-learning differs significantly from traditional learning methods in this aspect, as well as from online or distance learning to some extent. Examining student perspectives, identifying issues and opportunities related to the use of e-learning practices and the integration of technology and communication at the higher education level in Pakistan were the goals of this study (Ali, Shoaib, & Syed, 2023). In this investigation, the most recent and pertinent connective theory was used (Aslam et al., 2021). A brand-new e-learning platform that allows students to access a variety of course materials electronically is the newest development in higher education (Nazari & Webber, 2012). The primary forces behind this trend include evolving educational environments, student demographics, and technology advancements. Information and communication technologies are being incorporated into educational systems all around the world to enhance the educational experience for students (Ali et al., 2022).

Material and Methods

This study provides a summary of the research approach utilized for the study, "Promoting e-Learning among Students: The Role of University Libraries." It discusses the research design, demographic, sample, data collection and analysis methodologies, ethical considerations, and study limitations.

Sampling

In keeping with this strategy, a structured questionnaire procedure was developed with the goals of the study as its central focus. A review of previous research was used to guide the questionnaire's creation. Before being finalized, the questionnaire was revised under the direction of the study supervisor. The original version of the questionnaire took input into account. The survey will be administered to librarians from universities in Punjab, Pakistan to collect quantitative data on their usage, satisfaction, and impact of e-learning and online services. The data collected will be analyzed using statistical tools and thematic analysis to draw conclusions.

Data Collection

Essential university library staff members, including chief librarians and library officers, receive the questionnaire. Since information is collected via both physical and electronic forms, respondents are free to choose how they would like to respond.

Delimitations

Delimitation of the study on the topic of Promotion of e-Learning among students: Role of University Libraries. The study will cover Public and Private University libraries located in Punjab, Pakistan and will not include libraries outside of Pakistan. The study will restrict its analysis to particular e-learning formats, such as online classes, virtual classrooms, or blended learning strategies. This makes it possible to examine specifically how the library supports and promotes particular e-learning modes. This study includes 144 librarians who have at least 2-3 years of experience in library management. The study uses purposive sampling to select the librarians who participated in the study. The sample size is small and may not represent the perception of all librarians towards revenue generation in Pakistan libraries.

Data Analysis

The main goal of the current study was to evaluate "Promotion of e-Learning among students: Role of University Libraries. In this study, 144 individuals completed the questionnaire using a quantitative research approach. The collected data was examined using the SPSS software. The findings have been derived using the frequency, percentage, and mean. The T-test and one-way ANOVA have also been used to examine the variations in responses from respondents who identify as male and female.

Demographic Information

These demographics include the population's qualities, the categories of gender, and type of experience for those who took part in the research study.

Type of University

Based on their classification as public or private institutions, universities were splinted according to the study. The analysis encompassed a total of 144 universities. Of these, 62 universities, representing 43.1%, were categorized as private, and 82 universities (indicating 56.9%) as public.

Table 1
Type of Universities

Type of University	Frequency	Percent
Public Sector	82	56.9
Private Sector	62	43.1
Total	144	100

Designation

The composition of the 144 library employees who were considered across all designations is shown in table 2 below. The most accepted job title among library employees is "Librarian," which accounts for 36.1% of the staff out of 52. 27 people in the category, senior librarians contribute 18.8%. Deputy Librarians make up 6.9% of the staff with 10 individuals, while Chief Librarians make up 17.4% with 25 total. The remaining 20.8% belongs to other designations, covering a wide range of positions in the library.

Table 2
Designation

Designation	Frequency	Percent
Chief Librarian	25	17.4
Deputy Librarian	10	6.9
Senior Librarian	27	18.8
Librarian	52	36.1
Other	30	20.8
Total	144	100

Professional Qualification

The results of Table 3 show that 100%, of the total 144 sample size, or the majority of participants, have a MLIS and MS/MPhil degree. 39.6%, following closely behind, and an equivalent 16, or 11.1%, have a Doctor of Philosophy (Ph.D.) out of a total of 144 in the same field. Furthermore, a percentage of 9.7%, or 14, is included in the "BS 4 Year" qualifications category.

Table 3
Professional Qualification

Professional Qualification	Frequency	Percent
BS 4 Years	14	9.7
MLIS	57	39.6
MS/MPhil	57	39.6
PhD	16	11.1
Total	144	100

Professional work experience in years

According to the table 4, a significant number of participants 25 (17.4%) have completed 1–5 years of professional work experience. Also 38 (26.4%) of participants have between six and ten years of work experience, and 52 or 36.1%, have between 11

and 15 years of professional experience. Of the participants, 23 (16.0%) fall into the 16 to 20 age group, and 6 (4.2%) have more than 20 years of professional work experience.

Table 4
Professional Work Experience in Years

Professional work experience in years	Frequency	Percent
1-5 Years	25	17.4
6-10 Years	38	26.4
11-15 Years	52	36.1
16-20 Years	23	16
Above 20 Years	6	4.2
Total	144	100

Utilization of e-learning Platforms (Descriptive Statistics)

Table 5 first portion results show that a sizable portion of participants (65.3%) said they always used the Zoom e-learning platform. 16.0% of respondents say they use sometimes, and 12.5% who say they use rarely. Remarkably, 6.3% of participants never make use of Zoom, the e-learning tool. The first breakdown, which includes 144 respondents, provides a thorough analysis of how an e-learning platform [ZOOM] is used to support and guide students within the sample group.

Table 5 second portion results show that a small portion of participants (11.1%) said they always used the MOOC e-learning platform. 21.5% of respondents say they use sometime, and a sizable portion 38.2% who say they use rarely. Somehow, 29.2% of participants never make use of MOOC, the e-learning tool. The second breakdown, which includes 144 respondents, provides a thorough analysis of how an e-learning platform [MOOC] is used to support and guide students within the sample group.

Table 5 third portion findings indicate that just 13.2% of participants claimed to use the Coursera online learning platform on a regular basis/Always. Of the respondents, 30.6% say they use sometime, and 27.8% say they use rarely. 28.5% of users never use the e-learning platform Coursera at all. A comprehensive examination of how an e-learning platform [Coursera] is utilized to support and mentor students in the sample group is given in the third breakdown, which has 144 respondents.

Table 5 fourth portion results show that a sizable portion of participants (38.2%) said they always used the Microsoft Teams e-learning platform. 29.9% of respondents say they use sometime, and 21.5% who say they use rarely and 10.4% of participants never make use of Microsoft Teams, the e-learning tool. The first breakdown, which includes 144 respondents, provides a thorough analysis of how an e-learning platform [Microsoft Teams] is used to support and guide students within the sample group.

Table 5 fifth last portion results show that an ample portion of participants (31.9%) said they always used the Digi Skills e-learning platform. 23.6% of respondents say they use sometime, and 29.2% who say they use rarely and 10.4% of participants never make use of Digi Skills, the e-learning tool. The first breakdown, which includes 144 respondents, provides a thorough analysis of how an e-learning platform [Digi Skills] is used to support and guide students within the sample group.

Table 5
Utilization of e-Learning Platforms

Sr.	Statement	Never	Rarely	Sometime	Always
1	Use of ZOOM.	6.3%	12.5%	16.0%	65.3%

2	Use of MOOC	29.2%	38.2%	21.5%	11.1%
3	Use of Coursera	28.5%	27.8%	30.6%	13.2%
4	Use of Microsoft Teams	10.4%	21.5%	29.9%	38.2%
5	Use of Digi Skills	15.3%	29.2%	23.6%	31.9%

University Library Utilization of E-Learning

The average response rate of 2.58 suggests that most respondents agree e-learning has made it possible to learn more things faster across the globe. According to the standard deviation of 0.49 with a significant degree of variability, the responses appear to be quite constant around this mean.

The majority of respondents, with a mean score of 2.38, concur that their library provides instruction or training on the proper use of e-learning materials. In contrast to the previous statement, the higher standard deviation of 0.61 indicates greater response variability.

The average response rate of 2.21 indicates that most respondents generally concur that their university offers off-campus customers remote access to library resources, albeit to a significantly smaller degree than in the prior assertions. A wider variety of replies and possibly greater doubt among respondents considering this statement are indicated by the bigger standard deviation of 0.68.

The majority of respondents (mean of 2.26) concur that their library effectively promotes students' use of online learning materials. But as the standard deviation of 0.63 shows, there is moderate variety in the responses, just like in the previous claims.

Table 6
University Library Utilization of e-Learning

Sr. #	Statements	Mean	Std. Deviation
1.	E-Learning has saved the time to learn more things globally.	2.58	.49
2.	My library offers guidance or training sessions on how to effectively use e-learning resources.	2.38	.61
3.	My university provides remote access to library resources for off-campus users.	2.21	.68
4.	I believe my library adequately encourages the use of e-learning resources among students.	2.26	.63

Librarian attitude towards E-Learning (Descriptive Statistics)

The mean score of 2.47 indicates that, on average, respondents believe that e-learning can improve learning efficiency. The standard deviation of 0.56 indicates some diversity in responses, but overall, respondents agree moderately on this assertion.

With a mean score of 2.44, respondents largely believe that e-learning is an effective learning method. The standard deviation of 0.53 indicates that answers are very stable around the mean, with moderate variability.

The mean score of 2.42 suggests that respondents are relatively agreeable in their recommendation of e-learning resources to library users. However, the standard deviation of 0.61 indicates a broader range of reactions and maybe greater variety in experiences or behaviors related to this statement.

Respondents generally agree (mean of 2.32) that they have used e-learning resources available through their university library. However, the higher standard

deviation of 0.66 implies greater diversity in responses than in earlier statements, implying that respondents may have varying levels of use.

Table 7
Librarian Attitude towards e-Learning (N=144)

Sr. #	Statement	Mean	Std. Deviation
1	I believe e-learning can contribute to learning efficiency.	2.47	.56
2	I believe e-learning is a useful learning option.	2.44	.53
3	I have recommended e-learning resources to library users.	2.42	.61
4	I have utilized e-learning resources available through my university library?	2.32	.66

E-Learning Experience (Descriptive Statistics)

The mean score of 2.41 indicates that respondents had a moderate understanding of the e-learning materials available through their university library. The standard deviation of 0.60 demonstrates that respondents' levels of awareness differ, with some being more knowledgeable than others.

Respondents generally believe that e-learning has an impact on students' academic performance, scoring 2.33 on average. The 0.60 standard deviation indicates that respondents' perceptions of the amount of this impact vary moderately.

The mean score of 2.13 suggests that respondents expect some resistance from students when it comes to implementing e-learning, albeit not severely.

The higher standard deviation of 0.71 implies that respondents' experiences and perceptions vary, with some facing more resistance than others.

The mean score of 2.12 indicates that respondents sought assistance from other university libraries for e-learning resources to some extent. The standard deviation of 0.68 indicates that the support received was not uniformly useful, with some considering it more helpful than others.

Respondents have a positive overall experience using e-learning materials at their university library, as evidenced by a mean score of 2.40. The lower standard deviation of 0.58 indicates greater agreement among respondents on their experience.

The average score of 2.22 indicates that respondents have suggestions for changes or more support from their university library to improve their e-learning experience. The standard deviation of 0.63 demonstrates variation in the specific improvements desired by respondents.

Respondents see benefits in increasing e-learning among students, as evidenced by a mean score of 2.28. However, the higher standard deviation of 0.71 indicates that respondents have varying judgments of the amount of these benefits.

Table 8
E-Learning Experience

Sr. #	Statement	Mean	Std. Deviation
1.	To what extent are you aware of the e-learning resources provided by your university library?	2.41	.60
2.	E-learning creates an impact on the academic performance of students?	2.33	.60
3.	How would you rate the extent to which you have encountered resistance from students when it comes to adopting e-learning?	2.13	.71

4.	Have you ever sought assistance from other university libraries regarding e-learning resources, and if so, how helpful was the support?	2.12	.68
5.	Evaluate your overall experience with e-learning resources at your university library.	2.40	.58
6.	How would you rate the improvements or additional support you would like to see from your university library to enhance your e-learning experience?	2.22	.63
7.	Rate the perceived benefits of promoting e-learning among students."	2.28	.71

E-Learning Satisfaction (Descriptive Statistics)

The mean score of 2.30 indicates that respondents are somewhat satisfied with the availability and quality of e-learning materials and platforms offered by their university library. The standard deviation of 0.615 suggests that respondents' satisfaction levels differ, with some being more satisfied than others.

With a mean score of 2.33, respondents generally believe that e-learning has enhanced the overall user experience and satisfaction with library services. The standard deviation of 0.542 indicates that respondents have generally consistent agreement on this statement, with moderate variability.

The mean score of 2.24 suggests that respondents are satisfied with the e-learning materials and support offered by their university library. However, the higher standard deviation of 0.71 indicates greater variety in satisfaction levels among respondents, with some expressing higher pleasure than others.

Table 9
E-Learning Satisfaction (N=144)

Sr. #	Statements	Mean	Std. Deviation
1	How satisfied are you with the availability and quality of e-learning materials and platforms provided by your university library?	2.30	.61
2	E-learning has improved the overall user experience and satisfaction with library services?	2.33	.54
3	I am satisfied with the e-learning resources and support provided by my university library.	2.24	.71

Quality related Challenges (Descriptive Statistics)

The mean score of 2.29 indicates that respondents had some concerns about the quality of e-learning content. The standard deviation of 0.59 suggests moderate diversity in respondents' estimates of the scope of these concerns. With a mean score of 2.24, respondents believe there is a lack of skilled and willing library workers to some extent. The standard deviation of 0.59 indicates moderate diversity in respondents' views of the presence of this challenge.

The mean score of 2.24 suggests that respondents see an inadequate library budget as a difficulty. The standard deviation of 0.67 indicates substantial diversity in respondents' perceptions of the sufficiency of the library budget.

The mean score of 2.15 indicates that respondents regard staff transfer as a challenge. The higher standard deviation of 0.729 indicates greater diversity in respondents' opinions of the impact of personnel transfers on e-learning services.

The average score of 2.32 suggests that respondents saw a lack of cash or economic resources as a challenge. The standard deviation of 0.63 indicates moderate

diversity in respondents' assessments of the adequacy of financial resources to support e-learning efforts.

With a mean score of 2.31, respondents believe that customization of e-learning content is somewhat important in meeting their demands. The standard deviation of 0.53 indicates moderate diversity in respondents' assessment of the level of these customization problems.

Respondents observe policy difficulties affecting e-learning at their university, as evidenced by their mean score of 2.17. The standard deviation of 0.67 indicates moderate diversity in respondents' assessments of the impact of policy concerns on e-learning projects.

Table 30
Quality related Challenges Descriptive Statistics (N=144)

Sr. #	Statements	Mean	Std. Deviation
1.	Issues with the quality of e-learning content.	2.29	.59
2.	Lack of competent and willing library staff	2.24	.59
3.	Inadequate library budget	2.24	.67
4.	Staff transfer	2.15	.72
5.	Lack of fund / economic resources	2.32	.63
6.	Customization issues of e-learning content to suit your needs.	2.31	.53
7.	Policy issues affecting e-learning in your university.	2.17	.67

Training related Challenges (Descriptive Statistics)

The mean score of 2.22 indicates that respondents perceive some level of difficulty due to a lack of training facilities. This suggests that access to relevant e-learning training facilities may be restricted or limited. The standard deviation of 0.66 suggests substantial diversity in respondents' assessments of the scope of this task.

Respondents perceive a lack of training for effective e-learning instructions to some extent, scoring 2.32 on average. This shows that educators may have insufficient opportunity or resources to build the skills required to give good e-learning experiences. The standard deviation of 0.59 suggests moderate diversity in respondents' assessments of the sufficiency of training for e-learning courses.

Table 11
Training related Challenges Descriptive Statistics

Sr. #	Statements	Mean	Std. Deviation
	Unavailability of training facilities.	2.22	.66
	Lack of training for effective e-learning instructions.	2.32	.59

IT related Challenges (Descriptive Statistics)

Respondents see a problem as a result of a deficiency of reliable internet access for e-learning activities, scoring 2.22 on average. It means that there may be variations in internet connectivity that hinder the smooth operation of e-learning activities.

Respondents see power load shedding without backup as a difficulty, as seen by their mean score of 2.32. It shows that power failures without backup solutions may interrupt e-learning operations, especially in areas prone to electricity shortages.

Table 42
IT related Challenges Descriptive Statistics

Sr. #	Statements	Mean	Std. Deviation
1	Lack of IT infrastructure facilities (Hardware /Software).	2.33	.62

2	Lack of reliable internet access for e-learning activities.	2.22	.65
3	Electricity load shedding without backup.	2.23	.65
4	Data privacy and online security when participating in e-learning.	2.17	.60
5	Insufficient access to IT resources	2.17	.63

Impact of Demograph on Promotion of e-Learning *(Independent samples t-test)*

In this study, means and t-tests were used to compare PhD/MPhil and MLIS students' impressions of several components of e-learning. The table below shows the means for each statement in both groups, as well as the t-values and significance levels.

The mean scores for PhD/MPhil (2.35) and MLIS (2.35) students are fairly similar, with a difference of only 0.24. The t-value of 0.038 is not significant (p = 0.97), showing that there is no significant difference in how the two groups use e-learning materials in university libraries.

PhD/MPhil students (2.45) had somewhat higher average scores than MLIS students (2.36). However, the t-value of -1.485 is not significant (p = 0.14), showing that the two groups had similar opinions of librarian attitudes regarding e-learning.

The mean score for PhD/MPhil students (2.30) is somewhat higher than that of MLIS students (2.23), but the t-value of -1.17 is not significant (p = 0.24), showing that the two groups had similar descriptive e-learning experiences.

Similar patterns emerge for these claims, with no significant variations in averages between PhD/MPhil and MLIS students, as evidenced by the non-significant t- and p-values.

Overall, the t-tests show that PhD/MPhil and MLIS students have similar perceptions of e-learning in all evaluated areas. These data imply that both student groups had similar perceptions and experiences with e-learning.

Table 53
Various Elements of Promotion of e-Learning w.r.t Program of study

Statements	PhD/MPhil 73	MLIS 71	t-value	Sig.(2-tail)
University Library Utilization of E-Learning	2.35	2.35	038	.97
Librarian attitude towards E-Learning	2.45	2.36	-1.48	.14
E-Learning Experience Descriptive	2.30	2.23	-1.17	.24
E-Learning Satisfaction	2.31	2.26	-.691	.49
Quality related Challenges	2.26	2.22	-.531	.59
Training related Challenges	2.33	2.19	-1.62	.10
IT related Challenges	2.28	2.16	-1.76	.08

Various Elements of Promotion of e-Learning w.r.t Age *(One-Way ANOVA)*

This study investigates age-related changes in views of e-learning promotion across a variety of claims. The statistics include responses from participants categorized by age groups: up to 30, 31-40, 41-50, and over 50. The means, F-values, and significance levels for each assertion are shown below:

Significant variations were seen between age groups, with people over 50 having higher mean scores than younger age groups.

Significant variations were discovered in both areas, with those over 50 having more pleasant experiences and higher levels of pleasure.

There were no substantial differences in problems relating to quality, training, and information technology among age groups.

Overall, these data show age-related differences in perceptions and experiences with several components of e-learning promotion, particularly in terms of utilization, attitude, experience, and satisfaction. However, issues with e-learning appear to be persistent across age groups. Further research may be required to investigate the underlying causes of these discrepancies and inform targeted solutions.

Table 64
Various Elements of Promotion of e-Learning w.r.t Age (ANOVA) (N=144)

Statements	Age	Mean	F	Sig.
University Library Utilization of E-Learning	Upto 30	2.34		
	31-40 / 41-50	2.21	5.86	.04
	Above 50	2.51		
	Total	2.35		
Librarian attitude towards E-Learning	Upto 30	2.36		
	31-40 / 41-50	2.34	4.59	.01
	Above 50	2.56		
	Total	2.41		
E-Learning Experience Descriptive	Upto 30	2.23		
	31-40 / 41-50	2.20	3.08	.04
	Above 50	2.40		
	Total	2.26		
E-Learning Satisfaction	Upto 30	2.26		
	31-40 / 41-50	2.15	6.08	.03
	Above 50	2.48		
	Total	2.29		
Quality related Challenges	Upto 30	2.23		
	31-40 / 41-50	2.22	.28	.75
	Above 50	2.28		
	Total	2.24		
Training related Challenges	Upto 30	2.21		
	31-40 / 41-50	2.30	.84	.43
	Above 50	2.34		
	Total	2.26		
IT related Challenges	Upto 30	2.17		
	31-40 / 41-50	2.25	1.04	.35
	Above 50	2.29		
	Total	2.22		

Various Elements of Promotion of e-Learning w.r.t work experience *(One-Way ANOVA)*

This study looks into the relationship between participants' years of experience and their impressions of several components of e-learning promotion.

Significant variations were found between participants' years of experience in many aspects of e-learning promotion, such as University Library Utilization and Librarian Attitude. Participants with 1-5 years of experience had higher mean scores than

those with 11-15 / 16-20 years of experience, indicating a more positive opinion of e-learning promotion among less experienced individuals.

Substantial variations were discovered in E-Learning Satisfaction, with participants with more than 20 years of experience reporting higher levels of satisfaction than those with 11-15 or 16-20 years of experience.

There were no significant changes in Quality Related Challenges, Training Related Challenges, and IT Related Challenges based on years of experience.

These findings show that participants' years of experience may impact their perceptions of various aspects of e-learning promotion, including use, attitude, experience, and satisfaction. Further research may be required to understand the fundamental causes of these inconsistencies and to inform targeted solutions.

Summary

This study summarizes the key findings of the study "Promoting e-Learning among Students: The Role of University Libraries." It contains an overview of the findings, significant conclusions, recommendations, and areas that require additional research. The survey research method was used along with the quantitative research approach to achieve the expected outcomes. Expert judgment on the questionnaire helped ensure the validity of its questions. The 41 items in the questionnaire, which was divided into eight sections, covered a range of topics influencing the e-Learning of different e-Learning elements. The questionnaire was sent to all universities in Punjab including Islamabad Pakistan through email, WhatsApp, and Facebook, including private and public sector universities.144 librarians, or 58.06% of the total number of universities in Pakistan, received the final instrument in person as well as via email, WhatsApp, and Facebook. The data were analyzed with the Statistical Package for the Social Sciences (SPSS). To meet the objectives, a one-way ANOVA was used in conjunction with inferential (t-test) and descriptive statistics (frequency and percentage count).

Conclusions

In conclusion, the study of Promoting e-Learning among Students: The Role of University Libraries provides a valuable comprehension of the gathered library's ideas and processes. Seven major parts of the study were analyzed using descriptive statistics, an independent samples t-test, a one-way ANOVA, and a two-factor ANOVA, taking into account numerous demographic factors: University Library E-Learning Utilization, Librarian Attitude Towards E-Learning, Descriptive E-Learning Experience, E-Learning Satisfaction, Quality Challenges, Training Challenges, and IT Challenges. The descriptive statistics revealed the majority opinion of the library's use of E-Learning, librarian attitude toward E-Learning, E-Learning Experience Descriptive, E-Learning Satisfaction, Quality Related Challenges, Training Related Challenges, and IT Related Challenges. ANOVA investigation of several components encouraging e-Learning with a sample size of 144 participants yielded numerous noteworthy findings. The study found that university library e-Learning consumption differed statistically significantly across experience categories ($F = 6.96$, $p = .01$), with the greatest mean recorded for individuals with more than 20 years of experience. Similarly, librarian views toward e-Learning differed considerably by experience ($F = 5.27$, $p = .06$), with those with more than 20 years of experience scoring higher on average. These findings imply that experience has a significant impact on both library use of e-Learning resources and librarian attitudes

toward e-Learning programs. Furthermore, e-Learning satisfaction varied significantly by experience category (F = 4.97, p =.08), with individuals with more than 20 years of experience reporting the highest mean satisfaction scores. However, there was no significant difference in e-Learning experience and descriptive statistics across experience categories (F = 2.92, p =.05), demonstrating that the degree of experience does not always correlate with the level of e-Learning experience itself. Furthermore, there were no substantial differences in e-Learning quality, training, and information technology difficulties among experience groups (p >.05). These findings indicate that, while experience influences certain aspects of e-Learning promotion, such as library usage and attitude, it may not always impact problems confronted. Overall, these findings can help academic institutions design more targeted and successful e-Learning initiatives.

Recommendations

- University libraries should promote investments in digital resources, such as e-books, academic journals, and multimedia content, to support eLearning programs.
- Collaborate with publishers and digital content providers to reach inexpensive license arrangements for online resources.
- Upgrade library infrastructure to provide easy access to eLearning platforms and materials, ensuring high-speed internet connectivity and suitable computer facilities.
- Provide regular training sessions for library staff to get them acquainted with eLearning tools, digital platforms, and developing technology.
- Encourage librarians to actively engage with students, providing direction and assistance in efficiently using eLearning resources.

References

Ali, A., Shah, M. A., & Ali, N. (2024). The Impact of ICT on College Libraries' Technical and Reference Services. *Pakistan Social Sciences Review*, *8*(2), 94-107.

Ali, N. (2018). *Research Support Services: A Study of University Libraries in Punjab* Minhaj University Lahore].

Ali, N., Naveed, M., & Khan, S. A. (2024). Research visualization on cloud computing services in the field of information science and library science. *Digital Library Perspectives*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/DLP-02-2024-0019

Ali, N., & Naveed, M. A. (2020). Research support resources and services in university libraries of Pakistan: A situational analysis. *Library and Information Science Journal*, *51*(ICEIL-II Issue), 57-63.

Ali, N., Shoaib, M., & Abdullah, F. (2023). Information literacy and research support services in academic libraries: A bibliometric analysis from 2001 to 2020. *Journal of Information Science*, *49*(6), 1593–1606. https://doi.org/10.1177/01655515211068169

Ali, N., Shoaib, M., & Syed, K. (2023). Steady ship: Digital, online, and e-libraries (1971–2020). *Journal of Information Science*, *49*(5), 1187-1201. https://doi.org/10.1177/01655515211040678

Ali, R., Khurshid, K., & Naz, V. (2022). Implementing E-Learning Practices and Integration of Echnology at Higher Education Level in Pakistan: Problems and Potentials. *Harf-o-Sukhan*, *6*(1), 12-28.

Allen, L. E., & Taylor, D. M. (2017). The role of the academic Library Information Specialist (LIS) in teaching and learning in the 21st century. *INFORMATION DISCOVERY AND DELIVERY*, *45*(1), 1-9.

Aslam, S., Ali, N., Naveed, M., & Mairaj, M. I. (2021). Research Productivity of Journal of Librarianship and Information Science from 1999-2019: A Bibliometric Study. *Library Philosophy and Practice*(5350), 1-20.

Aslam, S., Naveed, M., Ali, N., & Siddique, N. (2022). Globally Published Literature on Library and Information Science Professionals: A Bibliometric Review (1970-2021). *Journal of Information Management Practices*, *2*(2), 77-94.

Bhatti, M. W., Ali, N., & Sabzwari, M. N. (2023). Research Scholars' Perception about Information Resources available in University Libraries of Punjab, Pakistan. *Journal of Information Management and Practices*, *3*(2), 46-77.

Dangaiso, P., Makudza, F., & Hogo, H. (2022). Modelling perceived e-learning service quality, student satisfaction and loyalty. A higher education perspective. *Cogent Education*, *9*(1), 2145805.

Dobrota, M., Jeremic, V., & Markovic, A. (2012). A new perspective on the ICT Development Index. *Information Development*, *28*(4), 271-280.

Gherheş, V., Stoian, C. E., Fărcaşiu, M. A., & Stanici, M. (2021). E-learning vs. face-to-face learning: Analyzing students' preferences and behaviors. *Sustainability*, *13*(8), 4381.

Kang, Z., Hamid, A., Ahmad, K., & Ali, N. (2024). Research on internet of things (IoT) indexed in Web of Science from 2011–2022. *Information Development*. https://doi.org/10.1177/02666669241247783

Lopes, C., Bernardes, Ó., Gonçalves, M. J. A., Terra, A. L., da Silva, M. M., Tavares, C., & Valente, I. (2022). E-learning enhancement through multidisciplinary teams in higher education: students, teachers, and librarians. *Education Sciences*, *12*(9), 601.

Naveed, M., Ali, N., Khan, S. A., & Shahzad, K. (2023). A bibliometric analysis of library automation software research from 2001-2022: evidence from the Web of Science (WoS). *Global Knowledge, Memory and Communication*. https://doi.org/10.1108/GKMC-06-2023-0194

Nawaz, A., & Khan, I. U. (2019). Puzzle of developing E-Learning systems for higher education in developing states like Pakistan. *Global Educational Studies Review,(IV) I*, 12-20.

Nazari, M., & Webber, S. (2012). Loss of faith in the origins of information literacy in e-environments: Proposal of a holistic approach. *Journal of Librarianship and Information Science*, *44*(2), 97-107.

Oh, E., & French, R. (2004). Pre-service teachers' perceptions of an introductory instructional technology course. *Electronic Journal for the Integration of Technology in Education*, *3*(1), 37-48.

Pham, H.-H., & Ho, T.-T.-H. (2020). Toward a 'new normal'with e-learning in Vietnamese higher education during the post COVID-19 pandemic. *Higher Education Research & Development*, *39*(7), 1327-1331.

Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam. *International Journal of Educational Technology in Higher Education*, *16*(1), 1-26.

Rasheed, H. M. W., He, Y., Khalid, J., Khizar, H. M. U., & Sharif, S. (2022). The relationship between e-learning and academic performance of students. *JOURNAL OF PUBLIC AFFAIRS*, *22*(3), e2492.

Razzaq, F., Shaikh, S., & Khaskhelly, F. Z. (2018). Patterns of Learning Styles through E-Learning in Pakistan. *International Research Journal of Arts and Humanities*, *46*(46), 109-119.

Safdar, G., & Khan, A. W. (2020). E-Learning: Current Scenario of Internet and Educational Learning among University Students of Punjab Pakistan. *Journal of Educational Research (1027-9776)*, *23*(1).

Salamat, L., Ahmad, G., Bakht, M. I., & Saifi, I. L. (2018). Effects of E–Learning on Students' Academic learning at university Level. *Asian Innovative Journal of Social Sciences and Humanities*, *2*(2).

Shahzad, K., Khan, S., Javed, Y., & Iqbal, A. (2023). E-Learning for continuing professional development of university librarians: A systematic review. Sustainability 15 (1) pp. 1-18. *Sustainability*, *15*(1).

Shoaib, M., Abdullah, F., & Ali, N. (2020). Library Resources and Research Environment in Higher Education Institutions: Students' Satisfaction. *Library Philosophy and Practice*(4768), 1-18.

Shoaib, M., Abdullah, F., & Ali, N. (2021). A Research Visualization of Academic Learning Skills among Students in Higher Education Institutions: A Bibliometric Evidence from 1981 to 2020. *Library Philosophy and Practice*(5579), 1-34.

Shoaib, M., Ali, N., Anwar, B., & Abdullah, F. (2022). Library services and facilities in higher education institutions during coronavirus disease (COVID-19) in Pakistan. *Journal of Information Science*, 1-14.

Siddiquei, N. L., & Khalid, R. (2020). Journey towards e-learning in Pakistan: a systematic review. *Int J Distance Educ E-Learn (IJDEEL)*, *2*, 20-44.

Wahid, K. A., Faiz, M. A., Zakaria, A. R., & Hamidon, H. (2020). The Effectiveness of E-Learning: the Influence of Librarians. *Journal of Knowledge Management Application and Practice 2*(1), 1-9.