

EXPLORING STUDENTS' USE OF E-RESOURCES IN THE E-LIBRARIES OF THE PUNJAB

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ABSTRACT

This study was conducted to explore students' use of E-resources in the E-libraries of the Punjab by using Unified Theory of Acceptance and Use of Technology (UTAUT) model. The use of e-resources included; performance expectancy, effort expectancy, social influence, facilitating condition, and behavioral intention to use the e-resources. Students' access to e-collection, ease of access, frequency of using resources, and problems associated with access to e-resources was also explored. A quantitative survey was conducted using a descriptive research design. All 20 e-libraries of the Punjab were the population of this research. Six e-libraries were selected randomly as a sample. The sample was selected from the list of users registered in each library using a proportionate sampling technique. The total number of participants was 250. A self-developed questionnaire with 26 items and a checklist having 8 items, was used to collect the data. To analyze the data descriptive statistics was used. The findings of this study showed that students agreed that they were getting advantages from these e-libraries and these e-libraries were very helpful in their study. They could easily and more efficiently do their work by using and accessing e-library resources. These e-libraries were especially beneficial for those students who did not afford laptops. It is suggested that the government should increase the number of these e-libraries and these libraries should be established in all big cities of Pakistan. The library staff should focus on resolving the problems which students are facing, like a shortage of computers and off-library access.

Keywords: Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Behavioral Intention E-resources

INTRODUCTION

In this modern era, the changes in technology and its impact on the learning environment are seen very clearly. Nations give much importance to technology and they believe that new and advanced technology can create an effective learning environment in educational institutions and provide many types of opportunities for students (Fields, 2012). So, keeping in view this importance of electronic resources, the Punjab Government established 20 e-libraries in 20 different cities of the Punjab. These e-libraries have been established to enhance and increase the reading culture in the people. Many universities are using an internet-based system and the success of these systems depends upon the users' acceptance of the new technologies and their understanding matter a lot for the success of these institutions (Al-Adwan, Al-Adwan, & Smedley, 2013). Now e-resources are mostly used because of the advancement in computers

and networking technologies (Tao, 2008). Which provide access to all type of e-services like full-text database e-books, communication, electronic pictures, electronic audiovisual resources, e-journals, e-thesis, and citation or bibliographic database (Ibrahim, 2004).

The researchers are conducting this research because no comprehensive study has been conducted in the Punjab relating to the accessibility and usability of electronic resources in the e-libraries by using the UTAUT model. This research intends to find out the process of use e-resources and their accessibility provided by e-libraries in the Punjab. *Unified Theory of Acceptance and Use of Technology* (UTAUT) model was used to examine perceptions of e-library users. The main indicators of this model were performance expectancy, effort expectancy, social influence, facilitating condition, and behavioral intentions. These indicators show how students and librarians perceive the e-library usefulness, ease of use and complexities in using and accessing e-resources of e-libraries. Social factors that influence student's behavior, facilitating condition which e-libraries provide to its users, and behavior of the students towards the use of e-library were also assessed. Researchers have conducted various studies to explore the uses of e-resources and the accessibility and functionality of e-libraries (Amjad, Ahmed, & Naeem, 2013; Awwad & Al-Majali, 2015; Cohen & Calsada, 2003).

This research is investigating specific libraries that are separately made in different cities, called as E-Libraries. Separately mean they are not connected with any educational institution they have their own custom made buildings comprising of 2 labs, one staff room, one reading room, one training room, and a seminar hall. These libraries have ample resources like books, laptops and tablets for children. In this study, the researcher is exploring the usefulness and access of these e-libraries for students and the problem faced by them.

LITERATURE REVIEW

Background to the UTAUT model

UTAUT model is combination of eight different models of technology use and its acceptance that is why it is called unified model. UTAUT model was established by (Venkatesh, Morris, Davis, & Davis, 2003). UTAUT model determine the behavioral intentions and the usage of technology. Following models and theories were combined to develop this model.

Davis model of TAM, Taylor and Todd model combined model of TPB and TAM, Fishbein and Ajzen theory of TRA, Ajzen theory of TPB, Davis model of MM, Rogers theory of IDT, Bandura theory of SCT and Thompson model of MPCU (Ajzen, 1991; Bandura, 1986; Davis, 1989; Fishbein & Ajzen, 1975; Rogers, 1995; Taylor & Todd, 1995; Thompson, Higgins, & Howell, 1991).

The use of and access to e-resources are investigated by five main indicators which were, *Effort Expectancy (EE)*, *Performance Expectancy (PE)*, *Facilitating Conditions (FC)*, *Social Influence (SI)*, *Behavioral intention* to use. This study focus on these five main indicators. The table below explains these indicators. Main purpose of this model (Venkatesh et al., 2003) was to explain and predict the user's behavior towards IT acceptance. UTAUT model has been used in many studies to investigate the adoption of e-resources and information communication technologies (Deng, Liu, & Qi, 2011; Dulle & Minishi-Majanja, 2011; Maldonado, Khan, Moon, & Rho, 2011; Zhou, Lu, & Wang, 2010) and this model is considered more powerful and more desirable then other technology acceptance models (Venkatesh et al., 2003).

Main indicators of the model

The main indicators of the UTAUT model are describes in this section by (Venkatesh et al., 2003)

Indicator	Definition
1.Performance Expectancy	The students believe that use of this system will increase their productivity and will be beneficial for their work. It involves: 1. Perceived Usefulness 2. Outcome Expectations
2.Effort Expectancy	Effort expectancy is a variable which measure the ease of use of the system. It includes: 1. Perceived Ease of Use 2. Complexity
3.Social Influence	Social Influence is a term which include some social factors which influence students' behavior to use the specific system
4.Facilitating Condition	Facilitating Conditions is term which explain all the facilities which a system provide to students like infrastructure and resources which support use of e-resources
5.Behavioral Intentions	Behavioral intentions to use the e-resources means there is a possibility to achieve something positive by use of a particular system

E-libraries are expanding word wide and are being considered useful but students generally lack experience and knowledge of searching skills for better use of e-resources (Togia & Tsigilis, 2010; Ukachi, 2015) and institutions are not paying attention towards the exploration and spreading knowledge in students towards the electronic services (Emereole & Ogugua, 2007). A Study by Mulla, (2011) shows that users were not familiar with the IT skills and knowledge. Eden and Ofre (2010) asserted that the frequency of usage of e-resources is occasional and these resources are not being used regularly and frequently.

Objectives

1. To explore students' performance expectancy, effort expectancy, the influence of social factors on students' behavior and their behavioral intentions in the use of e-resources in e-libraries.
2. To discover the availability of e-collection, their access and facilitating conditions of e-libraries for using e-resources.
3. To investigate problems faced by the students in the use of e-resources in e-libraries.

METHODOLOGY

Research Design

The main focus of the present study was to explore the "use of" and "access to" e-resources in e-libraries of the Punjab Pakistan by using the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The main variables of this study were Performance

Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions and Behavioral Intentions towards the use of e-resources. A quantitative descriptive survey type research design was used for this study. Quantitative descriptive studies use Quantitative methods to explore the actual state of the situation for this purpose the data is recorded, analyzed, and interpreted to explain the condition of the phenomenon.

Population

Students of the 20 e-libraries of the Punjab province Pakistan were the population of this study.

Sample and Sampling Technique

A simple random sampling technique was used. Six e-libraries were selected randomly as a sample. The sample was selected from the list of student users registered in each library using a proportionate sampling technique. The total number of participants was 250.

Research Instrument

A questionnaire (Venkatesh et al., 2003) for students was used to measure the use of e-resources and a self-developed checklist was used to measure the access of e-resources. The questionnaire was Likert type 5-point scale which was used to obtain the data about the use of e-resources and a checklist having yes or no responses was used to obtain the data for access to e-resources.

Data collection procedure and Data analysis

First of all the researcher got the list of 20 e-libraries established in the Punjab province Pakistan (https://elibrary.punjab.gov.pk/districts_libraries). Six libraries were randomly selected and researchers visited them personally for data collection. The collected data was analyzed through descriptive statistics (Frequency, Percentage, Mean and Standard Deviation).

RESULTS

Analysis Based on Use of e-resources

Table 1: Percentage Analysis of Performance Expectancy

Item No	Item	SD+D %	N %	A+SA %	Mean	St. D
1	Services in E-library are useful for my studies.	3.2	1.6	95.2	4.42	0.784
2	I accomplish my academic tasksspeedily by using the e-library services.	4.8	0.8	94.4	4.22	0.743
3	My productivity (output) increases in my studies by using e-library services.	2.8	10.4	86.8	4.26	0.801
4	I get required information well in time by using e-library services.	3.6	9.6	86.8	4.17	0.773
5	If I use the e-library services, It will increase my chances of getting better grades.	4.8	11.6	83.6	4.19	0.906

Table 1 explained that maximum students were of the opinion that by using e-library resources their performance expectancy increased. More than 95% students with the highest mean of 4.42 agreed that e-library services were useful for their studies. Students (4.26%) also agreed that their productivity (output) rises in their studies by using e-library system.

Table 2: Percentage Analysis of Effort Expectancy

Item No	Item	SD+D %	N %	A+SA %	Mean	St. D
1.	I quickly and easily find needed information from e-library services.	1.2	10.4	88.4	4.28	0.695
2.	I have learned the use of these services very easily.	2	12.8	85.2	4.24	0.796
3.	Finding the website of e-library is very easy.	5.2	15.6	79.2	4.12	0.854
4.	E-library provides me fast and easy access to unlimited e-resources.	2.8	12.0	85.2	4.24	0.787
5.	E-library help me to complete my class assignments easily	5.2	13.2	81.6	4.18	0.933

Table 2 explained that maximum students agreed that by using e-library resources their effort expectancy increased. More than 88% students with the highest mean of 4.28 agreed that they quickly and easily found information from e-library services that they needed. Students (4.24%) also agreed that learning by e-library services was easy for them. Moreover, e-library provided them fast and easy access to unlimited e-resources.

Table 3: Percentage Analysis of Social Influence

Item No	Item	SD+D %	N %	A+SA %	Mean	St. D
11	My teachers influence me to use e-library services.	27.2	29.2	43.2	3.35	3.446
12	Library staff influences me to use the e-library services	15.2	22.4	62.4	3.57	1.132
13	My friends and class fellows influence me to use e-library services.	14.4	27.2	58.4	3.57	1.055
14	My family members influence me to use e-library services.	17.8	26.4	55.6	3.51	1.145

Table 3 explained that maximum students agreed that they have used e-library resources because of the influence of social factors. More than 62% students with highest mean of 3.57 agreed that e-library staff influenced them to use e-library services as well as their friends and class fellows motivated them to use e-library services.

Table 4: Percentage Analysis of Facilitating Condition

Item No	Item	SD+D %	N %	A+SA %	Mean	St. D
15	In this e-library computer and Internet are available to use e-library services.	5.2	6.8	88	4.35	0.867
16	I have the necessary skills for using the e-library services.	4	7.2	88.8	4.30	0.817
17	I have the necessary knowledge to use the e-library system	3.6	7.2	89.2	4.23	0.797
18	These services are compatible with my computer	1.2	0	98.8	4.41	0.603
19	E-library provides me online full-text articles that are sufficient to meet my needs.	6.8	8.0	85.2	4.13	0.884
20	E-library staff is available for	3.2	8.8	88	4.26	0.749

21	assistance with e-library system The location of e-library is very convenient for me.	7.2	8.0	84.8	4.18	0.966
22	E-library has convenient spaces that inspire study.	4.8	10.4	84.8	4.26	0.915

Table 4 clarified that maximum students agreed that e-libraries provide them all the necessary facilities for the use of e-library resources. More than 98% students with the highest mean of 4.41 agreed that these resources were well-matched (download file format, operating System, etc.) with their computers. Students (4.35) also agreed that in the e-library they had sufficient resources (computer, Internet etc.) to use e-library resources.

Table 5: Percentage Analysis of Behavioral Intentions to use

Item No	Item	SD+D %	N %	A+SA %	Mean	St. D
23	I like using these services for getting general information	0.8	9.2	90	4.34	0.676
24	I intend to keep on using these services in my studies	1.6	14.4	84	4.20	0.741
25	I believe I will continue the use of this system even after my graduation.	2.8	10.4	86.8	4.26	0.788
26	I will certainly recommend other students to use these services.	2.0	4.0	94	4.40	0.665

Table 5 explained that more than 94% students with highest mean of 4.40 agreed that they would advise the other students to use e-library services for getting more benefits and ease. With the supporting mean 4.34 more than 90% students agreed that they like using the e-library resources to increase their general knowledge or information.

Analysis Based on Access of e-resources

E-Resources Collection

The figure below described that E-books, E-Journals, OPAC (online public access catalog) and other full text databases which were available in e-libraries of the Punjab.

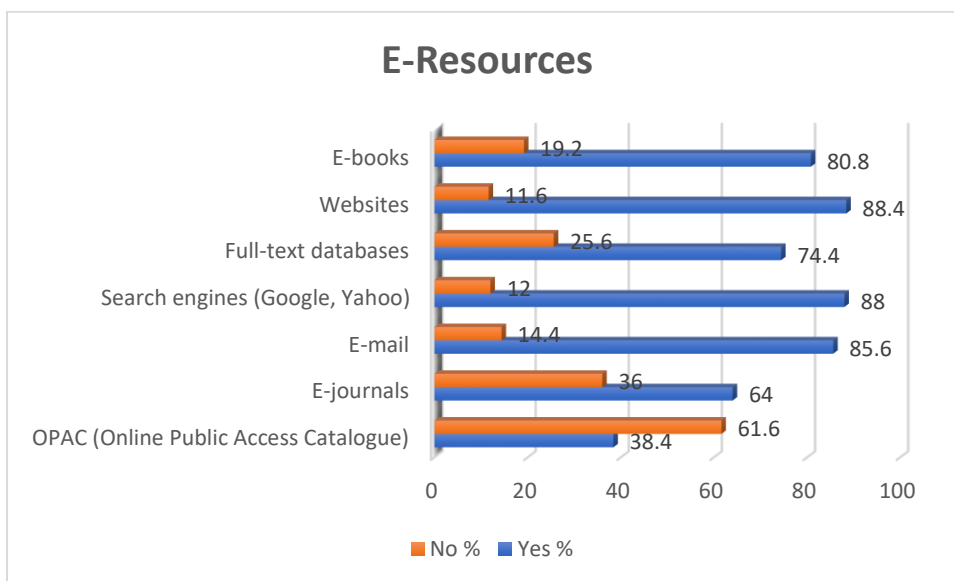


Figure 1 E-Resources Collection Available in E-library

Ease of E-library Access

The following explained, more than 82% students said yes by getting e-library access saves them from difficulty of browsing print material and maximum students 89% said yes e-library provide them fast and easy access to unlimited e-resources. More than 78% students said yes they easily access e-library from anywhere anytime.

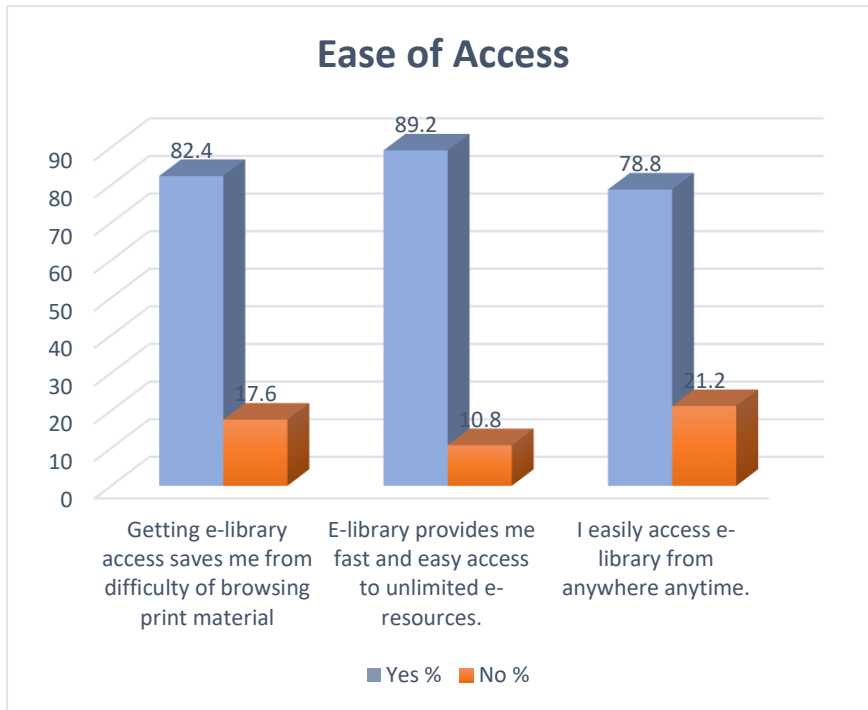


Figure 2: Percentage Analysis of ease of E-library Access

Awareness of E-Resources

Mostly (83%) students got information from colleagues and friends and library website (70%) about e-resources. Students also response was yes 70.8% for Library website that they get aware of e-resources because of library website.

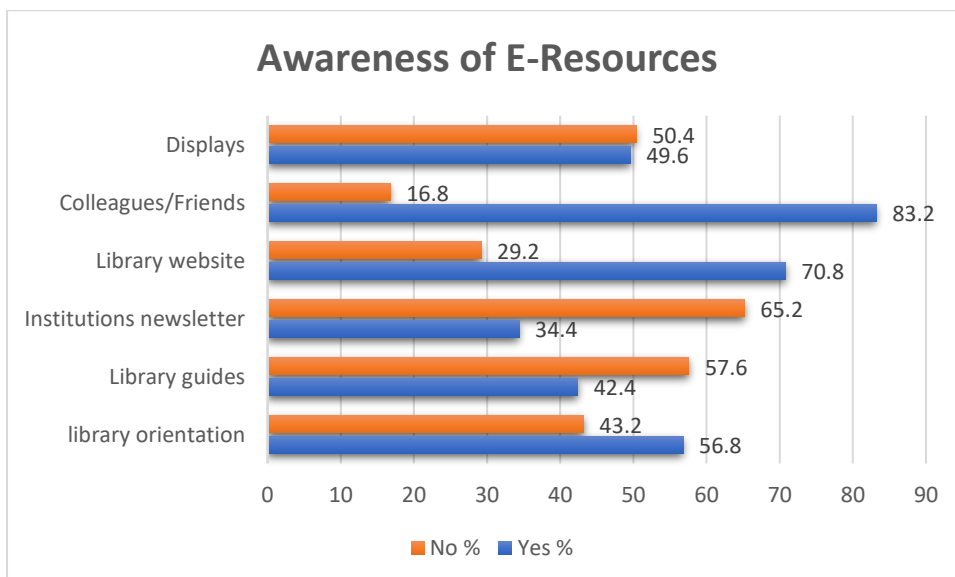


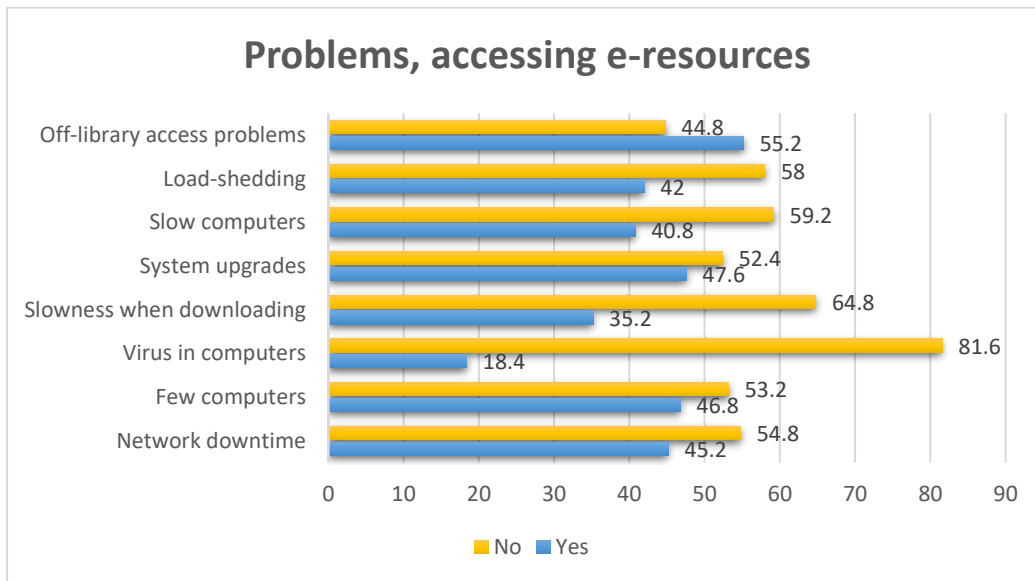
Figure 3 Awareness of E-Resources

Problems in access of e-resources

Table 6: Percentage Analysis of Problems when Accessing these E-Resources

Item No	Item	Yes %	No %
1	Have you encountered problems when accessing these e-resources?	86.8	13.2

Table 6 explained, more than 86% students said yes they face problems when they access e-resources. The following figure explains all the problems faced by the students. Figure 3 explained, more than 55% students face problem of off-library access. Students were facing multiple problems like system upgrades, shortage of computers, network issues etc.



Figurer 4 Problems while Accessing E-Resources

Table 7: Percentage Analysis of ordering the E-Resources with Respect to Access

Item No	Item	Raking	Ranking percentage%	Highest
A1	YouTube videos	1	72.4	
A2	E-books	2	22	
A3	Full-text databases	3	46.4	
A4	E-Thesis	4	20.4	
A5	E-journals	5	48.4	

Table 7 explained that students ranked 1 to YouTube as it was accessed the most. Second number was given to e-books, followed by full-text database and e-thesis, E-journals were least accessed.

Table 8: Percentage Analysis of Open Ended Question

St. No	Statement	Frequency	Percentage %
1	Internet speed is not good when number of users increased.	5	2
2	Little space in labs	10	4

3	Drinking water issue	4	1.6
4	Limited access to e-books	3	1.2
5	Staff not providing proper guidelines to use the e-resources.	5	2
6	Shortage of computers.	20	8
7	Made these e-libraries in every district and tehsil of Pakistan.	18	7.2
8	This is a good initiative to explore this e-libraries uses.	20	8
9	No comments	165	66

Table 8 shows the percentage analysis of open ended question which was any other comment which you think that is not included in this questionnaire or anything you want to say about this e-library. The obtained sample data shows that 2% students said internet speed is not good when number of users increased. More than 4% students said there is little space in labs to set. More than 1.6% students face drinking water issue. More than 1% students said there is limited access to e-books. More than 2% students said staff of e-library was not providing them proper guidelines to use the e-resources. More than 8% students said there is shortage of computers. More than 7% students said government should establish these e-libraries in every district and tehsil of Pakistan. More than 8% students said this is a good initiative to explore this e-libraries uses and 66% students do no comments.

DISCUSSION

This study shows that the percentage of using e-resources in e-libraries is very high among the students. A large number of the students use e-library services on daily bases for getting information for their study and learning purposes. Students also agreed that using e-resources in e-libraries of the Punjab increases their performance. The results of this study are consistent with the study of (Taiwo & Downe, 2013). But the research results of (Birch & Irvine, 2009) contradict this study. Students also agree that by using e-resources they can do their work more quickly and easily with fewer efforts. The results reported from different studies are similar with this study (Awwad & Al-Majali, 2015; Chang, Lou, Cheng, & Lin, 2015; Nirban, 2014; Raman, Don, Khalid, & Rizuan, 2014; Wong, Russo, & McDowall, 2013). In this study students also agreed that e-library staff, friends and class fellows influence them to use e-library resources. Several research findings support the result of this study (Awwad & Al-Majali, 2015; Nirban, 2014; Tan, 2013; Van Schaik, 2011). Students agreed that they enjoy facilitating conditions in these e-libraries. The results of Bakar, Razak, and Abdullah, (2013) are quite similar of current study. In current study students also agreed that they will continue using these e-libraries even after their studies. The result of this study is consistent with many researches (Awwad & Al-Majali, 2015; Nirban, 2014; Zhou et al., 2010). In terms of access to e-resources the results of this study explicate that students were having full access to e-resources except for OPAC (online public access catalog). They were facing multiple problems such as off-library access because e-library do not provide this opportunity, shortage of computer because the government give small number of laptops in e-libraries, network issues because their software was slow.

CONCLUSION

This study concludes that the students use e-library services on a daily basis, they use e-resources mostly for getting general information. According to the obtained data, the students feel that the e-library system is very helpful in increasing their performance and effort expectancy. Social factors also motivate them to use these services. E-library provides students almost all facilitating conditions that support their learning. The E-libraries of the Punjab provides a more accessible option than the other e-libraries. Students agreed that they

got full access to e-resources provided in e-libraries. The students want that these e-libraries should be increased in number and should be established in every province and city of Pakistan. This project should be expanded because it supports the education system.

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