

Impact Factor:3.986

ASSESSMENT OF E-LEARNING STRATEGIES IN LIS EDUCATION DURING THE COVID-19 PANDEMIC: A COMPARATIVE STUDY

Kavita

Research Scholar, Dept. of Library and Information Science
Maharshi Dayanand University, Rohtak (Haryana)-124001



Dr. Sanjiv Kadyan

Associate Professor, Dept. of Library & Information Science
Maharshi Dayanand University, Rohtak (Haryana)-124001

Corresponding author: kavitabaliana11@gmail.com & sanjivkadyan3@gmail.com

Abstract

The study assessed the e-learning strategies in Library and Information Science (LIS) education across three of North India's Oldest universities: Panjabi University (Patiala), Himachal Pradesh University (Shimla), and Rajasthan University (Jaipur) during the pandemic. Out of 170 LIS students, 164 responded, giving a 96.47% response rate. Of the respondents, 43.29% were male and 56.70% female. Around 65.85% were enrolled in B.Lib programs and 34.14% in M.Lib courses. English-medium instruction dominated, with 80.48% of students enrolled in such programs, while 19.51% studied in Hindi. Most students (59.11%) were from urban or semi-urban areas. About 75% owned a personal computer or laptop. Mobile phones (59.14%) were the primary e-learning device, followed by laptops (26.82%) and PCs (10.97%). E-learning awareness stood at 64.19%, highest at Panjabi (92.3%) and Himachal Pradesh universities (89.2%). WhatsApp was the main tool at Rajasthan University; Google Classroom at Panjabi; Google Meet at Himachal Pradesh university. Rajasthan students preferred email, Zoom, and Skype. National e-resources like e-Gyankosh and e-PG Pathshala were mainly used at Panjabi and Himachal Pradesh. Rajasthan students reported highest satisfaction (63.29%), though traditional learning remained preferred overall. Key issues were noise, poor internet, privacy concerns, and lack of training. Despite challenges, 56.70% showed interest in continuing e-learning.

Keywords: e-learning, oldest, LIS students, Covid-19

Introduction

The COVID-19 pandemic brought unprecedented disruption to traditional educational systems worldwide, forcing academic institutions to shift rapidly from face-to-face teaching to online learning. E-learning emerged as a vital alternative during this crisis, utilizing digital platforms and tools to facilitate the continuation of education amidst widespread lockdowns and social distancing measures. This sudden transition, while necessary, presented both opportunities and challenges for students and educators alike. The sudden transition to e-learning during the COVID-19 pandemic raised questions about its effectiveness. Dhawan (2020) highlighted that the efficacy of e-learning largely depended on digital infrastructure, instructors' preparedness, and students' technological adaptability. Tang et al. (2020) found that while theoretical knowledge

could be effectively delivered online, practical skills suffered due to limited hands-on experience. On one hand, e-learning provided flexibility, accessibility, and the potential for personalized learning experiences. It allowed students to access educational resources from remote locations and promoted the adoption of innovative teaching methods. On the other hand, the effectiveness of this mode of education depended heavily on factors such as digital infrastructure, internet connectivity, technical skills, and student engagement.

As educational institutions adapted to these new methods, it became essential to evaluate the actual impact of e-learning on academic outcomes, student satisfaction, and overall learning experiences. Understanding the strengths and limitations of e-learning during the pandemic can help policymakers and educators improve digital education strategies for future use, ensuring that such models are inclusive, efficient, and

sustainable. According to **Moore, Dickson-Deane, and Galyen (2011)**: E-learning is broadly defined as learning that uses digital technology, covering fully online courses, hybrid models, and technology-enhanced face-to-face learning.

The outbreak of the **COVID-19 pandemic** posed unprecedented challenges to educational systems worldwide, forcing a rapid shift from conventional classroom instruction to virtual learning environments. This transition particularly impacted professional and academic programs such as **Library and Information Science (LIS)**, where practical engagement and access to physical resources play a critical role. Against this backdrop, the present study aims to assess the e-learning strategies in LIS education among three universities of Northern India namely Panjabi University, Patiala, Himachal Pradesh University, Shimla, Rajasthan University, Jaipur during the pandemic, comparing experiences, practices, and outcomes across institutions to identify best practices and areas needing improvement.

2. Review of literature

Agarwal et al. (2021) examined how e-learning during the COVID 19 lockdown impacted **public health** and the **environment** in India. Surveying 91 students, primarily via Microsoft Teams, they found high satisfaction (98.9%) with the platform's chat and call features. E-learning improved **flexibility, accessibility**, and reduced **carbon emissions** and **air pollution**, benefiting the environment. However, it also brought **mental health** concerns such as anxiety and self-isolation, and **physical strain** from prolonged screen time affecting eyes and posture.

Amarneh et al. (2021) analyzed the impact of COVID-19 on e-learning, highlighting both its advantages and challenges. Their study noted that e-learning offered flexibility, accessibility, and continuity of education during lockdowns. However, students and educators faced issues like poor digital infrastructure, limited interaction, and reduced motivation. The research emphasized that while e-learning played a critical role during the pandemic, addressing technological gaps and improving online engagement strategies are essential for its long-term success.

Amry (2014) examined the impact of WhatsApp-based learning on female students' performance

and attitudes compared to traditional classroom teaching. The study found that students using WhatsApp showed improved academic achievement and more positive attitudes towards learning. The convenience and interactive nature of the platform supported better engagement, though the study suggested balancing mobile learning with conventional methods for optimal outcomes.

Cifuentes-Faura et al. (2022) examined the sustainability of Spain's university system during the COVID-19 pandemic. Their study highlighted how universities adapted to online learning to maintain academic continuity, emphasizing the role of digital platforms in sustaining education. They identified challenges such as unequal access to technology and reduced student interaction but also noted benefits like flexible learning environments and the development of digital skills. The study concluded that digital transformation, supported by institutional investment, is key to building a more resilient and sustainable higher education system in Spain.

Gon and Rawekar (2017) examined WhatsApp as a teaching tool in medical education, finding it useful for content sharing, discussions, and student engagement. Its accessibility and interactive nature supported communication and collaboration. However, issues like distractions and content management were noted as limitations.

Kaliyaperumal and Raman (2022) investigated nursing students' satisfaction and comfort with e-learning. Their study found that most students were moderately satisfied with online learning, appreciating its flexibility and convenience. However, challenges such as limited interaction, technical issues, and difficulties in understanding practical content were noted. The research emphasized that while e-learning supports theoretical knowledge delivery, enhancements are needed to improve student engagement and practical skills training in nursing education.

Kamysbayeva et al. (2021) studied e-learning challenges during COVID-19, finding it effective for developing technical skills but less so for soft skills. They emphasized the need for integrating diverse digital tools and promoting social interaction to enhance online learning outcomes.

Kaur et al. (2020) conducted an online survey assessing students' satisfaction with e-classes after three weeks of online learning. Results showed that while online classes were moderately effective across several parameters, students generally viewed them as less effective than traditional teaching. Overall, satisfaction was low, though students recognized online learning as necessary during the pandemic.

Matin & Yasar (2024) surveyed 209 Library & Information Science students from the University of Dhaka and NSTU in Bangladesh to assess e-learning during COVID-19. They found that most students had intermediate ICT skills and valued e-learning for its home-based convenience, easy access to learning materials, good schedule management, and instructor support. However, they also noted challenges including reduced face-to-face interaction and repetitive lecture formats.

Nikou and Maslov (2021) studied student perspectives on e-learning during COVID-19, finding that digital skills, platform access, and motivation affected participation. While students valued flexibility, issues like poor interaction and technical problems reduced engagement. The study emphasized improving digital support to enhance online learning.

Okeji et al. (2021) conducted a survey involving 1,290 students and five lecturers from five Nigerian universities to examine e-learning practices in Library and Information Science during the COVID-19 lockdown. Zoom and WhatsApp were the main platforms used for teaching. Benefits reported included access to recorded lectures, ease of sharing materials, collaborative learning, and direct communication with lecturers. However, several challenges related to technology and engagement were also identified.

Retno et al.(2021) conducted a study at UINSU Medan, Indonesia, to assess the impact of e-learning on Library Science students' learning quality during COVID-19. Based on responses from 83 students, statistical analysis showed that e-learning had a significant positive effect, contributing 46.2% to learning quality, while 53.8% was influenced by other factors. The study recommended improving e-learning policies and infrastructure to enhance educational outcomes.

S. Kinga and R. Wolniak (2022) studied 621 Polish university students to assess innovative e-learning during COVID-19. Students reported lack of interaction, difficulty with practical subjects, and screen fatigue as main drawbacks. Positive perceptions were linked to ease of content understanding, tech skills, and resource availability. Frequent use of e-learning methods improved student evaluations.

S. Subedi et al.(2020) conducted a descriptive cross-sectional online survey in Nepal to assess challenges faced by nursing students and teachers during online classes amid the COVID-19 lockdown. The study revealed that electricity issues disrupted 42.3% of teachers and 63.2% of students, while internet problems affected 48.1% of teachers and 63.6% of students. Only 64.4% of students had consistent internet access, with many relying on mobile data (64.3%) and mobile phones (58.4%) for learning. Significant associations were found between demographic factors and participants' attitudes and problems faced during online learning.

Objective:

- To measure the level of effectiveness of e-learning during pandemic in selected higher educational institutions offering LIS education.
- 2. To measure the significant differences in the responses of the sample population about effectiveness of e-learning during COVID-19 era in the selected universities of Northern India as per different variables (e.g., gender, level, rural, urban)
- To know the challenges faced by the teachers and students of LIS education in adopting e-learning during pandemic in selected universities of Northern India.
- To measure the students attitude and perceptions towards e-learning adopted by their institutions in terms of their satisfaction level during COVID-19 pandemic.
- To study the current status of e-learning facilities, practices, problems and prospectus of LIS Departments in selected universities of Northern India.
- 6. To suggest improvements in e-learning adoption in the selected institutions;

Research Methodology

The present study being empirical in nature, survey method was adopted to collect data from the population. The study was conducted on B. Lib. & Info. Science (18 students) and M. Lib. & Info. Science (21 students) of Department of library and information science Panjabi University, Patiala and B. Lib. & Info. Science (20 students) and M. Lib. & Info. Science (17 students) of Department of library and information science Himachal Pradesh University Shimla. Also comparison is made on responses obtained of B. Lib. & Info. Science (70 students) and M. Lib. & Info. Science (18 students) of Department of library and information science Rajasthan University Jaipur. The Total population of students were 164 in sample out of 170 and response obtained of 164 respondents of three universities filled in questionnaires were received back with a response rate of 96.47 percent.

Data Analysis & Findings

This section presents a detailed analysis of the responses collected through structured questionnaires to assess the effectiveness of e-

learning. The questionnaire was designed to gather both background and usage-related information from students and research scholars at three universities in Northern India. (Punjabi University, Patiala; Himachal Pradesh University Shimla; Rajasthan University Jaipur). Total 164 respondents returned the duly filled questionnaires. Basic details like gender, age, academic qualifications, and institutional affiliation were collected to better understand the users' behavior, preferences and comparisons between different parameters among universities.

Demographics of respondents: The demographic variables (i.e gender, age-group, medium of course and Nativity) has been depicted in tabular forms as: Rajasthan University, Jaipur had the highest number of total respondents (88), with a nearly balanced gender distribution (46 males, 42 females). Panjabi University, Patiala follows with 39 respondents, where females (21) clearly outnumber males (18). Himachal Pradesh University, Shimla shows a strong female dominance, with 30 female respondents compared to just 7 males

Table1 Gender wise distribution

Table: Gender wise distribution					
S No	University	Gender	Response	Percentage	Cumulative
1.	Panjabi University, Patiala	Female	21	53.84%	12.80%
		Male	18	46.15%	10.97%
2.	Himachal Pradesh University, Shimla	Female	30	81.08%	18.29%
		Male	7	18.91%	4.26%
3.	Rajasthan University Jaipur	Female	42	47.72%	25.60%
		Male	46	52%	28.05%
Total sample size			164		100%

This university has one of the highest proportions of female respondents. Rajasthan University is the only university where male respondents (46) outnumber females (42), though the difference is not very large. This trend aligns with the total gender breakdown, where females make up 56.69% of the entire sample. The data shows a consistent trend of higher female participation across most universities in the study.

Table 2. Medium of Course

University	English	Hindi	Total	Cumulative
Panjabi University, Patiala	35 (89.74%)	4 (10.25%)	39	23.78%
Himachal Pradesh University, Shimla	33 (89.18%)	4 (1.81%)	37	22.56%
Rajasthan University, Jaipur	64 (72.72%)	24 (27.27%)	88	53.65%
Total	132	32	164	100%

English-medium courses dominate across most universities with 132 students (80.48%) enrolled

in them, compared to 32 students (19.51%) in Hindi-medium. Panjabi University and Himachal

Pradesh University show very strong English-medium dominance, with only 4 Hindi-medium students each. Rajasthan University has the highest number of Hindi- medium students (24), but English-medium students (64) still form the majority. More than half of respondents are from rajasthan university, Jaipur followed by Panjabi university Patiala (23.78%) than came Himachal Pradesh University, Shimla (22.56%)

The medium of instruction may reflect regional language preferences or university policies. Universities in states with strong Hindi-speaking populations (e.g., Rajasthan, UP, Uttarakhand) show a higher proportion of Hindi-medium students. Institutions with national or international reach (e.g., Panjabi University) lean more toward English- medium instruction.

Table 3. University-wise nativity among respondents

S No	University	Gender	Response	Percentage	Cumulative
1	Punjabi University, Patiala	Metropolitan	3	7.69%	1.82%
		Urban	10	25.64%	6.09%
		Semi-urban	2	5.12%	1.21%
		Rural	24	61.53%	14.63%
		Total	39	100%	23.78%
2	Himachal Pradesh University, Shimla	Metropolitan	0	0%	0%
		Urban	13	35.13%	7.92%
		Semi-urban	5	13.51%	3.04%
		Rural	19	43.24%	11.58%
		Total	37	100%	22.56%
3	Rajasthan University Jaipur	Metropolitan	15	17.04%	9.14%
		Urban	56	63.63%	34.14%
		Semi-urban	9	10.22%	5.48%
		Rural	8	9.09%	4.87%
		Total	88	100%	53.65%
Total sample size			164		100%

Urban Background Dominates: The largest segment of respondents (79 out of 164, or 48.17%) comes from urban areas, indicating a strong urban representation in the sample. Over two-thirds (59.11%) of the respondents are from metropolitan, urban, or semi-urban settings. The remaining 31.08% are from rural areas, reflecting a fairly balanced urban–rural split

Basic information on online classes: The basic information on nature of online classes adopted by students during Covid-19 has been shown in Table 4 below:

Table 4. Basic Information of respondents among three Universities during Covid-19

S.no	Questions	Responses ()	(%)
1.	Do you have personal computer or laptop?	Yes (123)	75%
		No (41)	25%
		Total (164)	100%
2.	If yes which device you preferably use?	Laptop (44)	26.82%
		Mobile (97)	59.14%
		P.C (18)	10.97%
		Tablet (5)	3.04
		Total(164)	100%
3.	How often did you use personal computer or laptop?	Daily (62)	37.80%
		Alternately (70)	42.68%
		Weekly (32)	19.51%
		Total(164)	100%
4.	How much time did you spend in using personal computer/laptop?	2 hrs (73)	44.51%
		4 hrs (53)	32.31%
		6 hrs or more (38)	23.17%

Among the students in study sample across three universities (Table 4) 75 % have own personal computer or laptop while 25 % not having. Among these 164 (26.82%) preferably used laptop, 97 (59.14%) used mobile phone, 18 (10.97%) have own PC while only 5 (3.04%) respondent have tablet for online classes during lockdown. Majority of the respondent used P.C/ Laptop alternately 70 (42.68%) followed by 62 (37.80%) respondents used daily/weekly basis during Covid-19. On the other hand 44.51 % of respondent spend 2 hourly

in using P.C/Laptop while only 23.17 % used 6 hourly or more.

5.3 Background knowledge on e-Learning: E-learning is the use of electronic educational technology in learning and teaching. Here comparison is made among different universities on basis of questions cited below.

Question 1: Are you aware about e-learning? A majority of students (64.19%) across all universities responded “Yes” to awareness of e-Learning.

Table 5. University-wise Awareness of e-Learning

University	Yes	No	Maybe	Total	% Yes	% No	% Maybe
Panjabi University, Patiala	36	3	0	39	92.3%	7.7%	0.0%
Himachal Pradesh University, Shimla	33	0	4	37	89.2%	0.0%	10.8%
Rajasthan University, Jaipur	35	33	20	88	39.8%	37.5%	22.7%
Total	104	36	24	162	64.19%	22.22%	14.81%

A smaller proportion responded “No” (22.22%) or “Maybe” (14.81). Panjabi University, (92.3%), and Himachal Pradesh University (89.2%) showed the highest positive awareness of e-Learning. These results indicate strong integration or exposure to eLearning platforms in these institutions. The Himachal Pradesh University had nearly 90% awareness, but 10.8% still responded “Maybe”. Rajasthan University, Jaipur stands out with only 39.8% saying “Yes” and a high percentage saying “No” (37.5%) and “Maybe” (22.7%). This suggests a significant lack of effective e-Learning exposure or communication.

The data clearly shows that awareness of e-Learning is high in most universities, with 2 out of 3 institutions having more than 89% awareness. However, Rajasthan University is an outlier, where

less than half of the students are aware of eLearning, indicating the need for targeted intervention, digital orientation, or infrastructure development. The overall percentage (64.19%) is encouraging and reflects the growing acceptance and implementation of eLearning, possibly influenced by the COVID-19 pandemic and ongoing digital education efforts.

Question 2. Methods Used by Teachers to Share Course Documents During COVID-19 ?

This table presents a university-wise breakdown of methods used by teachers to share course-related documents during the COVID-19 lockdown. WhatsApp emerged as the most widely used platform, particularly all three universities, including large institutions like Rajasthan University (44 users). This shows a clear preference for mobile-based, accessible sharing tools.

Table 6: University-wise Methods Used to Share Course Documents During COVID-19

University	Email	WhatsApp	Facebook	Google Classroom	Total
Panjabi University, Patiala	12	17	0	10	39
Himachal Pradesh University, Simla	4	24	2	7	37
Rajasthan University, Jaipur	34	44	7	3	88
Total	50	85	9	20	164

Google Classroom was the most used method only at Panjabi University, suggesting localized adoption of structured e-learning tools. Email was used more frequently at Rajasthan University (34) but was still secondary to WhatsApp in total usage. Facebook played a minimal role across all institutions. Teachers largely relied on informal, easy-to-use platforms like WhatsApp to share study materials during the lockdown. However, the relatively low usage of formal learning management systems such as Google Classroom suggests limited integration of structured e-learning tools in some departments.

Question 3. File Formats Used by Universities for Sharing Course Materials ? This table presents the distribution of various file formats used by different universities to share educational content during the COVID-19 lockdown period:- PDF was the most commonly used format across all universities, with Rajasthan University (33) followed by Panjabi University (31) and Himachal Pradesh University (28) leading in PDF usage. This shows a widespread institutional preference for standardized, non-editable formats

Table 7: University-wise Use of Content Formats for Sharing Study Materials

University	Word Doc	PowerPoint	PDF	Scanned	Video	Audio	Total
Panjabi University, Patiala	1	1	31	3	3	0	39
Himachal Pradesh University, Shimla	2	2	28	2	2	1	37
Rajasthan University, Jaipur	25	19	33	8	3	0	88
Total	28	22	92	13	8	1	164

Rajasthan University stands out as the only institution where PowerPoint (19) was the most used format, indicating a greater use of visual or presentation-based teaching materials. Use of Word documents was highest in Rajasthan University (25), though still secondary to PDF. Scanned documents, video, and audio formats were used

minimally across all universities, suggesting limited digitization of printed content and underutilization of multimedia tools.

Question 4. Students' Working Knowledge of Learning Management Systems (LMS)? This Table shows the distribution of students with or without working knowledge of LMS tools across different universities.

Table: 8. University-wise Working Knowledge of Learning Management Systems (LMS)

University	Yes	No	Total
Panjabi University, Patiala	22	17	39
Himachal Pradesh University, Shimla	25	12	37
Rajasthan University, Jaipur	69	19	88
Total	116	48	164

This Table shows the distribution of students with or without working knowledge of LMS tools across different universities:- Rajasthan University (78.4%), and Himachal Pradesh University (67.6%) had the highest proportions of students with LMS knowledge. Panjabi University had a relatively balanced split between students who did and did not have LMS knowledge (22 vs. 17). While the overall LMS literacy rate is high across universities (70.73% overall), there is inter- university

variation, suggesting that institutional support and prior exposure may have influenced students' digital preparedness during the transition to online learning. Question 5. Online Software Used for Utilizing Content for e-learning during COVID-19 ? Zoom (84 users) is the most used platform across almost all universities followed by Google Meet (51) then Skype (25 users) and WebEx (4 users) were significantly less used.

Table 9. University wise Online Software Used for E-learning during COVID-19

University	Zoom	Skype	Google Meet	WebEx	Total
Panjabi University, Patiala	23	1	14	1	39
Himachal Pradesh University, Shimla	10	3	23	1	37
Rajasthan University, Jaipur	51	21	14	2	88
Total	84	25	51	4	164

University-wise Observations: Rajasthan University, Jaipur shows the highest number of Zoom (51) and Skype (21) users. This indicates broader software usage and possibly institutional support for diverse platforms. Himachal Pradesh University, Shimla stands out with the highest use of Google Meet (23), showing a strong preference or institutional push for Google services. Himachal Pradesh University show a nearly even preference between Zoom and Google Meet, with minimal or no usage of Skype and WebEx. WebEx was used

only with very low frequency, suggesting limited institutional adoption or user familiarity.

Question 6. What are the Online Resources Used for Utilizing Content for E-learning during COVID-19? The analysis of online resource usage for e-learning during COVID-19 reveals that e-Gyankosh (57 users) and e-PG Pathshala (59 users) were the most preferred resources, with nearly equal popularity across universities, reflecting their strong alignment with Indian higher education curricula

Table 10. University wise Online Resource Used for E-learning during COVID-19

University	e-PG Pathshala	e- Gyankosh	National Digital Library	Springer Open Journal	Total
Panjabi University, Patiala	20	13	6	0	39
Himachal Pradesh University, Shimla	24	10	3	0	37
Rajasthan University, Jaipur	15	34	31	8	88
Total	59	57	40	8	164

The National Digital Library (40 users) saw moderate engagement, while Springer Open Journal (8 users) had minimal usage, indicating limited relevance or accessibility. University-wise Panjabi University and Himachal Pradesh University recorded the highest usage of both e-Gyankosh and e-PG Pathshala, while Rajasthan University demonstrated the most diverse engagement, with the highest number of NDL users and significant use of Springer Journals. In contrast, both universities showed a no preference towards Springer Open Journal. The data highlights varying

degrees of digital resource adoption, shaped by institutional strategies, awareness, and access.

The data clearly shows that e-Gyankosh and e-PG Pathshala were the most popular online learning resources across universities during COVID-19, likely due to their alignment with the Indian higher education curriculum.

Question 7. Students' Rating of Their University (During Online Learning)? The tabulation reveals notable variation in how students from different universities perceive their eLearning experience compared to others.

Table 11. University wise rating in terms of e-learning usage during COVID-19

University * If Yes you rate your university Crosstabulation				
Count	If Yes you rate your university			Total
	Much better	Better	Similar	
Panjabi university, Patiala	19	13	7	39
Himachal Pradesh university, Shimla	10	21	6	37
Rajasthan University, Jaipur	50	34	4	88
Total	79	68	17	164

Rajasthan University, Jaipur (63.29%) received the highest “Much better” ratings, indicating strong satisfaction with their e-Learning environment. In contrast, universities like Himachal Pradesh University and Panjabi University had lower “Much better” responses, suggesting more moderate perceptions. Overall, while most students rated their institutions positively, the data highlights disparities

in perceived eLearning quality across universities, pointing to potential areas for improvement.

Question 8. Agreement on Online Teaching? A large majority of students (71.79%) agree with the statement regarding online teaching—this likely indicates their acceptance of it as a valid or effective method of instruction across three universities.

Table: 12. University-wise agreement on e-Learning

University	Yes	No	Total
Panjabi University, Patiala	28(71.79%)	11(28.20%)	39
Himachal Pradesh University, Shimla	28(75.67%)	9 (24.32%)	37
Rajasthan University, Jaipur	67(76.13%)	21(23.86%)	88
Total	123	41	164

28.20 % of respondents disagree, which could be due to barriers like digital fatigue, lack of interaction, or technical issues. The results suggest that most students view online teaching positively and accept it as part of their academic experience. However, the notable 1 in 5 students who do not agree point toward a minority facing challenges—perhaps due to lack of infrastructure, ineffective delivery, or personal learning preferences.

Question 12. Perception of Traditional Learning (Among Those Not in Favour of Online Teaching)? 76.9 % of respondents in Panjabi university followed by 56.41% and 54.54% (Himachal University& Rajasthan University) respectively prefer traditional learning, indicating that face-to-face education is still highly valued.

Table 13. Perception of Traditional Learning

University	Yes	No	May be	Total
Panjabi University, Patiala	30(76.9%)	4(10.25%)	5(12.82%)	39
Himachal Pradesh University, Shimla	22(56.41%)	6 (16.21%)	9(24.32%)	37
Rajasthan University, Jaipur	48(54.54%)	33(37.5%)	7(7.95%)	88
Total	100	41	21	164

Only 37.5 % highest out of all explicitly do not prefer traditional learning—these students might be more adaptive to modern/digital methods or found online learning more convenient. Only 24.32 % highest in Himachal Pradesh university were uncertain, suggesting openness but also possible indecisiveness or mixed experiences. The results underline a strong

emotional and educational attachment to traditional learning methods, despite the rise of online education. This may reflect: The importance of in-person interaction and hands-on experience and Challenges faced in adapting to digital platforms, especially in resource-constrained settings.

Table 14. Attitude Toward e-Learning across three Universities

S No	Statements	S.A	A	U	D	S.D
1.	I was having adequate facilities for accessing online classes	54(32.92)	86(52.43)	21(12.80)	03 (1.82)	0 (0)
2.	Learning to operate an e-Learning system was easier for me	24 (14.63)	103(62.80)	19(11.58)	17(10.36)	1(0.60)
3.	Studying through e-Learning was easier	34(20.73)	71 (43.29)	30 (18.29)	26 (15.85)	03 (1.82)
4.	The home environment is suitable for participating in online lectures	31(18.90)	62 (37.80)	34 (20.73)	25 (15.24)	12(7.3)
5.	I was satisfied in interaction with my teacher during online classes	25 (15.24)	81(49.39)	26 (15.85)	22 (13.41)	10 (6.09)
6.	Possibility of distraction from family members during online class	28 (17.07)	73 (44.51)	30(18.29)	22 (13.41)	11(6.7)

Regarding perceptions of e-learning more than half of respondents were agree (52.43%) and strongly agree (32.92%) about having “adequate facilities for online classes”. While only few were uncertain and disagree (12.80 and 1.82 %) about “importance of adequate facilities”. The analysis of table across three universities revealed that 44.51 % of respondents was agree and nearly 18 % were uncertain while 13.41 % were “disagree about possibility of distraction from family members

during online class”. Majority of respondents were agree (62.80%) about the perception of operating an e learning system was easier Followed by “home environment is suitable for online classes”(56.70%) .”Studying e-Learning system was easier for me” 64.02 agreed strongly and “satisfied in interaction with my teacher during online classes” agree (49.39%) but some were uncertain and disagree.

Table: 15. Students' preparedness to utilize e-Learning among three Universities

S.no	Statement	S.A	A	U	D	S.D
1	I was familiar with e-Learning	59(35.97)	86(52.43)	9(5.48)	7(4.26)	3(1.82)
2	I was prepared to switch to e-Learning mode	15 (9.14)	89(54.26)	30(18.29)	22(13.41)	8(4.87)
3	I was already aware about e-Learning before Covid-19	33(20.12)	58(35.36)	37(22.56)	32(19.51)	4(2.43)
4	I have IT competency to do online classes	30(18.29)	56(34.14)	25(15.24)	42(25.61)	11(6.7)
6	I could manage the classes without training	26(15.85)	84(51.21)	29(17.68)	19(11.58)	6(3.65)
8	I intend to use e-learning to get updated with subject knowledge with the latest amendments.	26(15.85)	68(41.46)	32(19.51)	35(21.34)	3(1.82)
9	I was confused working with different interfaces of online platforms	29(17.68)	73(44.51)	40(24.39)	15(9.14)	7(4.26)

Regarding students preparedness to utilize e-learning more than half of respondents were agree (52.43%) and strongly agree (35.97%) about “familiar with e-Learning”. Similarly more than half of respondents were agree with statement “I was prepared to switch to e-learning”. Nearly 55.48 % of respondents were “already aware about e-Learning before Covid-19”. Some were uncertain (22.56) and

disagree (19.51%) with above statement. “I have IT competency to do online classes” 52.43% of respondents were agree with above. Some (25.61%) were disagree with the issue of IT competency. “I could manage the classes without training” 51.21% of respondents were in agreement with above statement. “I intend to use e-learning to get updated with subject knowledge with the latest amendments” more than half 57.31 of respondents

were in agreement. Similarly about 19.51% were uncertain and 21.34% were in disagreement. Nearly 62.19% of respondent across three

universities was confused working with different interfaces of online platforms (About 35 % agree about “e-learning platforms are user friendly” and 45% uncertain.

Table 16: Barriers/Challenges of e-Learning across three Universities

S No	Statements	S.A	A	U	D	S.D
1.	Charging problem among devices	59 (35.97)	70(42.68)	21(12.80)	10 (6.09)	4(2.43)
2.	Problem of Background noise	20(12.19)	84 (51.21)	34 (20.73)	19 (11.58)	07 (4.26)
3.	Lack of Internet access speed at my side	31 (18.90)	78(47.56)	32 (19.51)	19 (11.58)	4 (2.43)
4.	Lack of awareness about e-Learning.	34 (20.73)	56 (34.14)	42 (25.60)	29(17.68)	03 (1.82)
5.	High implementation costs related to the purchase of an appropriate platform and IT equipment	28 (17.07)	72(43.90)	34 (20.73)	24 (14.63)	6 (3.65)
6.	Lack of training facility provided by the university	22 (13.41)	74 (45.12)	33 (20.12)	23 (14.02)	12(7.31)
7.	Data privacy and security	33 (20.12)	76 (46.34)	31 (18.90)	20 (12.19)	04(2.43)
8.	Screen fatigue and technical glitches such as audio or video lagging affecting the flow of lectures	28(17.07)	68(41.46)	43(26.21)	16(9.75)	9(5.48)

The Table 16 across three universities shows the barriers of e-learning, majority of respondents were agree with “problem of background noise “(51.21%) followed by “Lack of Internet access speed at my side” (47.56%) and succeeded by “problem of Data privacy & Security”, Lack of training facility provided by the university (45.12%),

“High implementation costs related to the purchase of an appropriate platform and IT equipment” (43.90%), “Charging problem among devices”(42.68%) and “Screen fatigue and technical glitches such as audio or video lagging affecting the flow of lectures” (41.46%). On the contrary some percentage ranging up to 20% were disagree and uncertain to the following parameters.

Table 17: Practical experience of e-learning among respondents of three universities

S No	Statement	S. A	A	U	D	S.D
1.	You feel the need of training for e-Learning by the Department	46(28.04)	71 (43.29)	23(14.02)	14(8.53)	10 (6.09)
2.	I will certainly use e-Learning in future for studies	21(12.80)	93(56.70)	29(17.68)	13(7.92)	8(4.87)
3.	Online classes cover all aspects of syllabus	25(15.24)	81(49.39)	36(21.95)	22(13.41)	0(0)
4.	Limitation on the number of participants impacts interaction and Engagement	32(19.51)	60 (36.58)	44(26.82)	24(14.63)	4 (2.43)
5.	Students using mobile devices are at disadvantage compared to those using computers	22(13.41)	84(51.21)	32(19.51)	23(14.02)	3(1.82)
6.	Practical and Laboratory sessions were affected by the pandemic in your institution	38(23.17)	63(38.41)	35(21.34)	19(11.58)	9(5.48)
7.	Over all I was satisfied with the technical support of the online learning and Assessment	32(19.51)	83(50.60)	20 (12.19)	22(13.41)	7(4.26)

The analysis of table across three universities revealed that majority of respondents agree in following order of agreement “I will certainly use e-Learning in future for studies”(56.70%) followed by Students using mobile devices are at disadvantage compared to those using computers (51.21%) followed by “Over all I was satisfied with the technical support of the online learning and

Assessment” (50.60) then “Online classes cover all aspects of syllabus” (49.39%) and “You feel the need of training for e-Learning by the Department” (43.29%) and “Practical and Laboratory sessions were affected by the pandemic in your institution” (38.41%). On the contrary, some percentage ranging up to 20% were disagree and uncertain to the following parameters.

Conclusion

The study analyzes students' perspectives on e-learning during Covid-19, based on a survey of 164 respondents from three Northern Indian universities: Panjabi University (Patiala), Himachal Pradesh University (Shimla), and Rajasthan University (Jaipur). Data on gender, age, qualifications, and institutional affiliation were collected to compare user behaviors and preferences. Female students represented 56.69% of the total sample.

English-medium courses dominated (80.48%), especially at Panjabi and Himachal Pradesh Universities, while Rajasthan University had more Hindi-medium students. Most respondents (59.11%) came from urban or semi-urban areas, with 31.08% from rural backgrounds. Around 75% of students owned a personal computer or laptop; however, mobile phones were the primary device used for online classes (59.14%), followed by laptops (26.82%), PCs (10.97%), and tablets (3.04%). Most students used these devices regularly during the lockdown.

Overall, 64.19% were aware of e-learning, with the highest awareness at Panjabi (92.3%) and Himachal Pradesh Universities (89.2%). Rajasthan University had lower awareness, signaling the need for digital literacy initiatives. WhatsApp was the most common learning platform, especially at Rajasthan University. Google Classroom was mainly used at Panjabi University, while Rajasthan students preferred email. PDF was the most shared content format across all institutions.

Knowledge of LMS platforms was highest at Rajasthan University (78.4%) and Himachal Pradesh University (67.6%). Rajasthan also led in Zoom and Skype usage, while Himachal Pradesh favored Google Meet. Panjabi and Himachal Pradesh Universities reported the highest use of national e-resources like e-Gyankosh and e-PG Pathshala. Rajasthan University had the most varied engagement, including Springer Journals and the National Digital Library (NDL).

In terms of satisfaction, Rajasthan University students rated their e-learning experience highest (63.29% "Much better"). However, traditional learning remained preferred at Panjabi University (76.9%), Himachal Pradesh University (56.41%), and Rajasthan University (54.54%). More than half of respondents felt they had adequate online facilities and were prepared for e-learning, though 62.19% struggled with varied online platforms.

Key barriers included background noise (51.21%), slow internet (47.56%), data privacy concerns, and lack of institutional training (45.12%). Despite challenges, 56.70% expressed willingness to continue using e-learning in the future, though many highlighted the need for departmental training and noted the disruption of practical sessions.

References

1. Agarwal, A., Sharma, S., Kumar, V., & Kaur, M. (2021). *Effect of e-learning on public health and environment during COVID-19 lockdown. Big Data Mining and Analytics*, 4(2), 104–115.
2. Amarneh, B.M.; Alshurideh, M.T.; Al Kurdi, B.H.; Obeidat, Z. The Impact of COVID-19 on E-learning: Advantages and Challenges. In Proceedings of the International Conference on Artificial Intelligence and Computer Vision, Settat, Morocco, 28–30 June 2021; Springer: Berlin/Heidelberg, Germany, 2021; pp.75–89.
3. Amry, A.B.(2014) The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *Eur. Sci. J.*, 10, 116–136.
4. Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>.
5. Faura-Martínez, U.; Lafuente-Lechuga, M.; Cifuentes-Faura, J.(2022). Sustainability of

- the Spanish university system during the pandemic caused by COVID-19. *Educ. Rev.*, 74, 645–663.
6. Gon, S.; Rawekar, A.(2017). Effectivity of e-learning through WhatsApp as a teaching learning tool. *MVP J. Med. Sci*, 4, 19–25.
7. Kaliyaperumal, R.; Raman, V.(2022). Satisfaction and Comfort towards E-Learning among Nursing Students. *Int. J. Educ. Psychol. Res.*, 11, 45–48.
8. Kamysbayeva, A., Koryakov, A., Garnova, N., Glushkov, S., & Klimenkova, S. (2021). E-learning challenge studying the COVID-19 pandemic. *International Journal of Educational Management*, 35(7), 1571–1585. <https://doi.org/10.1108/IJEM-06-2021-0257>.
9. Kaur, M., Singh, A., & Kaur, R. (2020). Student perceptions of online learning during the COVID-19 pandemic: A survey-based study. *International Journal of Educational Research*, 9(2), 112–118.
10. Matin, W.-U., Poly, K. N., & Yasar, M. S. (2024). *E-learning advancement in universities: Expectations of LIS students in Bangladesh*. *PhilPapers*. Retrieved from PhilPapers database.
11. Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). E-learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education*, 14(2), 129–135.
12. Nikou, S. and Maslov, I. (2021), “An analysis of students’ perspectives on e-learning participation – the case of COVID-19 pandemic”, *International Journal of Information and Learning Technology*, Vol. 38 No. 3, pp. 299-315.
13. Okeji, C. C., Nwokeoma, N. M., Eze, S. U., & Nnadozie, C. O. (2021). E-learning during COVID-19 lockdown: Experiences of library and information science students in Nigerian universities. *Library Philosophy and Practice*, 2021, 1–15. <https://digitalcommons.unl.edu/libphilprac/5503>.
14. Sayekti, R., Harahap, F., & Munthe, B. (2021). The effect of e-learning on the quality of learning of Library Science students during the COVID-19 pandemic. *Library Philosophy and Practice*, 2021, 1–15. <https://digitalcommons.unl.edu/libphilprac/5503>.
15. Subedi, S., Subedi, S., & Sharma, S. (2021). Challenges faced by nursing students and teachers in online classes during COVID-19 lockdown in Nepal: A descriptive cross-sectional study. *Journal of Nursing and Health Sciences*, 10(2), 45–52.
16. Tang, T., Abuhmaid, A. M., Olaimat, M., Oudat, D. M., Aldhaeebi, M., & Bamanger, E. (2020). Efficiency of flipped classroom with online-based teaching under COVID-19. *Interactive Learning Environments*, 1–12. <https://doi.org/10.1080/10494820.2020.1817761>