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E-learning Enhancement, Status and Attitude of learners towards Teaching Learning during COVID-19 Pandemic

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Abstract

The study explored the several dimensions of eLearning used by Indian Higher Institutions and presented insight into current eLearning pedagogy, infrastructures, services, and perceptions during the Covid-19 Pandemic. The study's findings reveal that Indian Academic institutions are unwilling to shift to the online mode for teaching, learning thoroughly. Pandemic forced them to adopt the e-learning pedagogy and tools. A majority of users still prefer the traditional classroom environment as compared to eLearning. Email, social media, and other communications tools became vital today. Email, traditionally used as a communication tool, is now a key player in delivering educational content. Social media platforms have also become catalytic player. Web 2.0 technologies such as blogs, Wiki, chat rooms, discussion forums, and instant messaging are vital technologies to support eLearning. Videos conferencing tools such as Zoom, WebEx, and Google Meet boosted the delivery of online lecture in a live and effective way.

Keywords: eLearning, Covid-19, Pandemic, Online Learning, Remote Learning

1. Introduction

E-learning has experienced significant change due to the exponential growth of the internet and Information Communication Technologies (ICTs). ICT has supported the learning pedagogical framework for the educational environment, i.e. face-to-face/distance /remote education (Nikou & Maslov, 2021). E-learning evolved as computer-assisted instructions. It was mainly evolved to facilitate the distance education system. The need for distance learning in education had been realised in India long back in the late 1950s. However, by bringing life, economies, and the education system to a complete standstill, the covid-19 crisis has made us realise a limited scope of face-to-face teaching and the hidden potential of digital interventions in the education space for reaching large students populations. This paradigm shift from traditional learning to e-learning/remote learning becomes more critical in India, as it is a young country that is likely to reach its peak by 2025 (Joshi, 2020). The growing technological advancement and cutting edge technologies enabled the landscape of educational technology to more enjoyable. Moodle, Blackboard and many such Learning Management System are developed as Virtual Learning Environment ((VLEs). The efforts were being made to develop a VLE that supports the course management and can manage the entire learning cycle.

eLearning has become the mandatory component of all educational institutions like schools, colleges, and universities worldwide due to the pandemic crisis of COVID-19. There has been a rapid pivot to online teaching due to COVID19 making significant teaching pedagogy changes

(White, 2020). This situation has made online learning mandatory, forcing institutions to create an immediate learning environment in a distinct setting from traditional classrooms and rapidly adopt unprecedented strategies to make eLearning/Online/Distance education possible (Ismaili, 2021).

Pandemic put the eLearning market in high demand—web 2.0 and 3.0 accelerated eLearning by offering many tools and services. These tools include social media tools, blogs, Wikis, and video conferencing tools that facilitate better content delivery and sharing. The plethora of tools and application available made the landscape of the eLearning environment confusing. E-learning has been an emerging paradigm of modern education, and covid 19 has boosted its usability and adaptability by institutions across the globe and changed pedagogy, perceptions, attitudes and information-seeking behaviour among the learners. This study is an effort to understand the tools, services and current status of eLearning practices adopted by Indian Higher Educational Institutes (HEIs) from the learner's perspective.

2. Literature Review

Several studies in the literature review have looked into the various aspects of implementing e-learning in the face of the COVID-19 pandemic. UNESCO reported that approximately 264 million children and adolescents are out of school, and this pandemic made the situation furthestmost exceedingly awful (UNESCO, 2020). As the COVID-19 pandemic spreads, there has been an increasing move towards teaching online because of the shutting down of schools, colleges, and universities for an unspecified period (Martinez, 2020). As a result, now is the time to seriously rethink, re-vamp, and redesign our educational system, which is in desperate need of reform due to the unprecedented current situation. During COVID-19, online learning helped the students to stay in touch with their lessons outside of the four walls of the classroom, which avoided crowding in the classroom and offered an option for completing the syllabus (Mishra, 2020). The students have a generally positive attitude toward e-learning. These e-learning services are also gaining much attention and are being used more widely for academic purpose. Students are willing to learn from e-learning because soft skills are essential in today's job market. However, at the same time, classroom learning is preferable to e-learning (Radha et al., 2020). Teaching and learning are always in demand. It was challenging for faculty to look at the pandemic situation as an opportunity to go for virtual classrooms, virtual learning, and teaching. There has been a widespread acceptance of technology in the teaching and learning process. Zoom, Google Hangouts, Skype meet up, Google classrooms, LMS, ICT, YouTube, and other online teaching and learning resources are used by faculty during the lockdown. Several institutions offered online faculty development programmes to raise faculty engagement (Shenoy et al., 2020). When students are self-isolated at home, they often face issues such as a lack of self-discipline, adequate learning materials, or favorable learning environments (Bao, 2020).

E-learning has become increasingly common in India in recent years. Massive Open Online Courses (MOOCs) are a common platform for students to take courses at a low cost. In India, many institutions are still hesitant towards online teaching and learning. On the other hand, the

Corona Virus pandemic introduced everyone to a new era of online learning and remote teaching. Instructors used several platforms to provide remote training, including Google Hangouts, Skype, Adobe Connect, Microsoft Teams, and others, but ZOOM came out on top. A list of online etiquette was provided to students and proper guidelines for attending classes to ensure that teaching-learning programmes run smoothly (Saxena, 2020). EdTech companies can be of great assistance to students when Covid-19 has caused schools and colleges to stay entirely closed for a few weeks due to the severity of the situation (Brianna et al., 2019). According to the reports by Google, the EdTech sector will boom and is likely to reach around 2 Billion Dollars by 2021. Some famous EdTech start-ups include Byju's, Adda247, Alolearning, AptusLearn, Vedantu, ZOOM Classroom, ZUnacademy, Coursera, Kahoot, Khan Academy, e-pathshala (Dhawan, 2020).

The rising number of students participating in distance education supports online learning as a viable alternative to conventional classroom teaching. Zaheer, 2015 emphasised that many students were pleased with the education they received online, and e-learning will help higher education in countries where higher education institutions are inadequate. Aboagye et al., 2021 have explored the challenges faced by students in tertiary institutions in online learning amidst the Coronavirus pandemic. According to the results, the most significant challenge students face in an entirely online learning situation is accessibility. Students were not prepared for a complete online experience (Aboagye et al., 2021). In underdeveloped countries like Pakistan, where most students cannot access the internet due to technical and financial problems, conventional classroom learning was more successful than online or distance education (Adnan & Anwar, 2020).

The present study aimed to examine some aspects of how to cope with e-learning in this COVID-19 era and examined whether students were ready to study online.

3. Objectives of the study

The main objective of this study is to explore the impact of lockdown during the pandemic on higher educational systems/ teaching-learning approaches from the concept of online learning/e-learning. The present study, hence, addresses the following research objectives:

- i. To know the status of current infrastructure, technologies available to Indian HEIs to support eLearning.
- ii. To determine the impact of COVID-19 on higher education teaching-learning advancement/pattern.
- iii. To investigate the recognition and usability of Online Information Resources and platforms for learning teaching and learning.

4. Methodology

The current study adopted a survey method of research. A well-designed questionnaire was framed with a total of 44 questions divided into four sections. The methodology employed in this study is purposive sampling in identifying students under the e-learning study mode. An online survey carries out the study via Google Form. The survey was sent to students identified through purposive sampling. The data collected are distributed among Indian Higher

Educational Institutions. A total of 274 responses received from the learners whose geographical coverage were from 17 states and 2 union territories of India.

5. Data Analysis and Findings

The data was gathered through Google Form; a survey-based questionnaire was constructed. The whole questionnaire is divided into four parts for data discussion based on the nature of questions asked to the respondents and to justify the study's objectives.

5.1. Demographic statistic

The study consists of 274 college students aged between 20 to 40 years old. Table 1 shows that among the total participants, more than half (52.55%) were female, and the remaining (47.45%) were male.

Table No. 1: Demographical information

Sl. No.	Category	Age Group (in years)	No. of Responses	% of Total Responses
1.	Age Group	Less than 20	18	6.57
2.		20-30	225	82.12
3.		30-40	24	8.76
4.		More than 40	7	2.55
5.		Total	274	100
6.	Educational Background	Qualification	No. of Responses	% of Total Responses
7.		Graduate	74	27.01
8.		Post Graduate	133	48.54
9.		Research Scholars	67	24.45
10.		Total	274	100.00
12.	Gender	Gender	No. of Responses	% of Total Responses
13.		Female	144	52.55
14.		Male	130	47.45
15.		Total	274	100
16.	Residential Area	Areas of interests	No. of Responses	% of Total Responses
17.		Rural	162	59.12
18.		Urban	112	40.88
19.		Total	274	100.00

Designation wise data categorically reveals that the highest number of 48.54% responded are belongs to the group PG category. The majority of respondents are from 59.12% belongs to rural areas which is significant and encouraging.

5.2: Status of the present e-Learning environment

Table 2 presents the comprehensive view of the present status of the e-learning technological environment. This dimension explored the organisations that provide the current facilities to the students and how much students obtained from the provided facilities for their academic

achievements. A total of nine questions of the different perspective of the eLearning environment were asked from the respondents. The findings of these questions are discussed as below:

The findings show that most respondents (91.61%) have an Internet facility, where 8.39% do not have internet access. It means that the majority of learners (91.61%) are having access to the internet facility.

Table No. 2: Status of the present e-Learning environment

Sl. No.	Category			
		Internet Facility	No. of Responses	% of Total Responses
1.	Internet Facility	Yes	251	91.61
		No	23	8.39
		Total	274	100.00
		Network	No. of Responses	% of Total Responses
2.	Connectivity Type	2G/3G	40	14.60
		4G	225	82.12
		Optical Fiber	9	3.28
		Total	274	100.00
		Provider	No. of Responses	% of Total Responses
3.	Service Provider	Jio	160	58.39
		Airtel	78	28.47
		Vodafone	23	8.39
		GTPL	4	1.46
		BSNL	9	3.28
		Total	274	100.00
		Action	No. of Responses	% of Total Responses
4.	Institutions/department responded to COVID-19	Suspension of classes	219	79.93
		Quarantine and Isolation	12	4.38
		Safety and Hygiene Measures	35	12.77
		other	8	2.92
		Total	274	100.00
		Support	No. of Responses	% of Total Responses
5.	Support non-stop teaching and learning platform	Yes	210	76.64
		No	64	23.36
		Total	274	100.00
		Platform	No. of Responses	% of Total Responses
6.	Preferred platform	Online learning	122	44.53
		traditional in-class face-to-face education	152	55.47
		Total	274	100.00
		Medium	No. of Responses	% of Total Responses
7.	Medium of communication	Email	129	47.08

		Social Media platforms, Facebook	87	31.75
		Newsgroups & Forum	34	12.41
		Video conferencing applications	3	1.09
		Classroom app	3	1.09
		Whatsapp	15	5.47
		Microsoft Teams	3	1.09
		Total	274	100.00
		Platform	No. of Responses	% of Total Responses
8.	Platform/medium you use for your queries	Email	107	39.05
		WeChat	11	4.01
		Other Social Platform	156	56.93
		Total	274	100.00
		time	No. of Responses	% of Total Responses
9.	Average time you spent for online learning	>1 hr	1	0.36
		2-3 hr	155	56.57
		3-4 hr	29	10.58
		>4 hr	26	9.49
		<1 hr	63	22.99
		Total	274	100.00

The connectivity of the network type is also a significant issue that has been asked of the participants. As per the resultant data of 82.12 %, learners have 4G access followed by 2G/3G (14.60%). As per the service provider, Jio Network (58.39) is used by most users, followed by Airtel (28.47%) and Videophone/Idea 8.39%.

The respondents asked questions about how their institutions tackle covid-19; most of them (79.93%) responded that their institutions suspended the classes, followed by safety and hygiene measures (12.77%). It may be because, as per Govt. guidelines, institutions has to be close immediately.

The learners were asked questions about the preferred platform of their choice for online learning. As per resultant data, learners still chose in-class face to face education (55.47%) as compared to online learning (44.53%).

The technological platform facilitates online teaching-learning to a great extent. As per the resultant data, most learners rated email (47.08%) as a preferred tool for communication, followed by Social media (31.75%). Further, for the queries and questions, most learners preferred the social Media tool (56.93) for the communication, followed by email (39.05%). Learners spent two to 3 hours daily for online learning.

5.3 Users' expectation and tools used for teaching and learning

Pandemic brought out so many challenges to the Institutions. They were forced to adopt educational technologies to support the teaching and learning process. Four questions were framed

to understand the scenarios of educational technologies used by learners' respective intuitions and/or departments. Findings of these questions are presented in **Table 3** and discussed as follows:

Table No. 3: tools used for teaching and learning

Sl. No		Support	No. of Responses	% of Total Responses
1.	Online Tools Used by Institution/Department	Blogs	65	23.72
		Collaborative work online (e.g. google drive/ google docs)	87	31.75
		Submission of assignments (e.g. online, email)	133	48.54
		Podcasts	8	2.92
		Portfolios (collaborative websites)	8	2.92
		Videos(YouTube etc)	103	37.59
		Wiki sites (collaborative websites)	23	8.39
		Style guides (e.g. APA, MLA, Chicago styles)	15	5.47
		Other (please specify)	15	5.47
		Total	274	100.00
		Support	No. of Responses	% of Total Responses
2.	Communication tools used by Institution/Department	Chat room	87	31.75
		Discussion forum	38	13.87
		Email	137	50.00
		Instant messaging (e.g. google talk, skype)	72	26.28
		Virtual office hours	27	9.85
		Other(please specify)	30	10.95
		Total	274	100.00
		Support	No. of Responses	% of Total Responses
3.	Social Network Media Used by Institution/Department	Facebook	70	25.55
		LinkedIn	39	14.23
		Twitter	4	1.46
		Other (please specify)	161	58.76
		Total	274	100.00
		Support	No. of Responses	% of Total Responses

4.	Tools used for the online class by Institution/Department	Grammar tools and checker (e.g. antidote)	21	7.66
		Language learning software	9	3.28
		Main mapping/ concept mapping/ graphic organiser (e.g. inspiration)	13	4.74
		Simulations/ virtual experiments	9	3.28
		Learning Management Systems (Moodle, Google Classroom etc.)	141	51.46
		video conferencing/ Call tool(Google Meet, Zoom, WebEx etc)	81	29.56
		Total	274	100.00

As depicted in Table 3, online tools and technologies adopted by the learner's respective institutions or departments used educational technologies and tools to submit assignments (48.75%), followed by videos platform (39.57%). A collaborative platform such as google drive and google docs (31.75%) was also used significantly as a preferred platform for teaching, learning, and knowledge sharing.

Communication tools play a vital role, and they became the backbone during the pandemic. As per resultant data, email (50%) is significantly used as the most preferred medium/tool of communication to support online teaching and learning among academic fraternity, followed by chat room (31.75%).

Social Media tools became the catalytic agent to support the teaching and learning process. As per the data, Facebook (25.55%) and LinkedIn (39%) were two social network platform used by learners institutions /departments. A majority of respondents (58.76%) opined others which include (Instagram, Sprout Social etc.)

Online teaching through video conferencing/live video call suddenly became a necessity. Institutions across the globe started using many technological platforms for online teaching-learning. As per opinion received by the learners most preferred tool used by the learner's respective department /institutions is LMS (Moodle, Google Classroom etc.)(51.46%), followed by Online Video conferencing/Video Call tools (29.56%) such as google meet, Skype, Zoom etc.

5.4 Opinion Statement about the satisfaction level of teaching and learning

An opinion judgement from the learners asked to rate their satisfaction level with present eLearning systems. As per resultant data depicted in Table 4, learners have opined as agree and positive response concerning all the five questions, namely, was the e-learning systems or LMS used by you useful to fulfil your eLearning goals; was the e-learning systems used by you organized to satisfy your learning needs; was it easy for you to understand the features of e-learning

system or LMS that you have used; was the e-learning system used by you providing you with the precise course content that you are looking for; and Was the design and user interface of the e-learning system used by you attractive and customisable?

Table No. 4: Opinion Statement on teaching and learning

Sl.No.	Satisfaction levels with the present e-learning system	N=274				
		Always	Often	Sometimes	Rarely	Never
1.	Was the e-learning systems or LMS used by you useful to fulfil your eLearning goals	68	102	95	9	0
		(24.81)	(37.22)	(34.67)	(3.28)	(0.00)
2.	Was the e-learning systems used by you organised to satisfy your learning needs?	50	123	96	5	0
		(18.24)	(44.89)	(35.03)	(1.82)	(0.00)
3.	Was it easy for you to understand the features of e-learning system or LMS that you have used?	95	114	46	19	0
		(34.67)	(41.60)	(16.78)	(6.93)	(0.00)
4.	Was the e-learning system used by you providing you with the precise course content that you are looking for?	65	118	87	0	4
		(23.72)	(43.06)	(31.75)	(0.00)	(1.46)
5.	Was the design and user interface of the e-learning system used by you attractive and customisable?	65	91	91	19	8
		(23.72)	(33.21)	(33.21)	(6.93)	(2.91)

Inference may be drawn from the learners' opinion statements that e-learning systems used to facilitate teaching, learning, and e-content sharing play a significant role in sharing the content and collaboration. This LMS offers many features and tools to facilitate online content delivery and managing learning in an eLearning environment.

5.5 Opinion Statement about eLearning

The Likert scale helps to measure the opinion judgement or satisfaction level of the respondents. A Likert Scale is designed to understand the learners' opinions towards various perspectives and dimensions of eLearning and their understanding of eLearning concepts. As per the resultant data depicted in Table 5, there is a mix of opinion through the Likert Scale based on four-five parameters such as 1-completely disagree, 2-disagree, 3-strongly agree, 4-agree, and; 5-completely agree. Learners have rated their opinion on eLearning using these scales. Most users rated either agree, strongly agree or completely agree for all the fifteen statements as per the data.

Table No. 5: Opinion Statement of eLearning

Sl.No.	Please rate your opinion about e-Learning(N=274)					
		1-completely disagree (%)	2-disagree (%)	3-strongly agree (%)	4-agree (%)	5-completely agree (%)
1.	eLearning is useful for life-long learning	46	90	28	100	10
		(16.79)	(32.85)	(10.22)	(36.5)	(3.65)
2.	eLearning is an effective supplement of traditional educational environment	40	91	32	101	10
		(14.6)	(33.21)	(11.68)	(36.86)	(3.65)
3.	eLearning boosts the reputational of the Higher Education Institution (HEI)	24	43	62	124	21
		(8.76)	(15.69)	(22.63)	(45.25)	(7.66)
4.	eLearning is useful for graduates	23	41	41	149	20
		(8.39)	(14.96)	(14.96)	(54.38)	(7.3)
5.	eLearning is an effective learning method	24	49	45	140	16
		(8.76)	(17.88)	(16.42)	(51.09)	(5.83)
6.	eLearning is useful for first degree students	37	95	20	112	10
		(13.50)	(34.67)	(7.3)	(40.87)	(3.65)
7.	eLearning is a demanding task and students will fail to meet the requirements	34	104	24	108	4
		(12.41)	(37.96)	(8.76)	(39.42)	(1.46)
8.	eLearning is a demanding task and teachers will fail to meet the requirements	41	99	35	99	0
		(14.96)	(36.13)	(12.77)	(36.13)	(0.00)
9.	eLearning is not necessary in tertiary education	29	129	28	78	10
		(10.58)	(47.08)	(10.22)	(28.47)	(3.65)
10.	eLearning is temporary	20	120	29	91	14
		(7.3)	(43.79)	(10.58)	(33.21)	(5.11)
11.	eLearning will become in the future as important as printed books	28	69	61	102	14
		(10.22)	(25.18)	(22.26)	(37.23)	(5.11)
12.	eLearning is more time-demanding than traditional educational processes	41	86	46	97	4
		(14.96)	(31.39)	(16.79)	(35.40)	(1.46)

6 Discussion and Conclusions

The objective of the study was to understand the current scenario and status of eLearning during the pandemic. The study explored the several dimensions of eLearning used by Indian Academic Institutions and presented insight into current eLearning pedagogy, infrastructures, services, and perceptions.

Indian Academic institutions were not ready to completely shift to the online mode for teaching, learning. Pandemic forced them to adopt the e-learning pedagogy and tools. The

study explored that a majority of users still prefer the traditional classroom environment as compared to eLearning. A blended learning approach may be a better solution to cope with situations.

Email, social media, and other communications tools became vital today. Email, traditionally used as a communication tool, is now a key player in delivering educational content. Social media platforms have also become catalytic player. Web 2.0 technologies such as blogs, Wiki, chat rooms, discussion forums, and instant messaging are vital technologies to support eLearning. Videos conferencing tools such as Zoom, WebEx, and Google Meet boosted the delivery of online lecture in a live and effective way.

Learning Management Systems such as Moodle, Google Classroom plays a significant role to manage the eLearning environment. These VLE (Virtual Learning Environments) has a considerable role in the e-learning pedagogy based teaching-learning process.

There are different viewpoints regarding the future of eLearning and whether eLearning boosts the traditional learning environment. Study unearths that eLearning may not replace the conventional classroom teaching entirely, but it emerged as a solution for institutional branding and lifelong learning. ELearning has appeared as a solution in the Pandemic situation and plays a backbone to support the teaching, learning process in the Indian Higher Educational Institutions (HEIs).

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