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E-Resources and E-Learning in Higher Education During COVID-19 in India: A Comprehensive Analysis of Benefits and Challenges

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Abstract:

In the case of COVID-19, it would be considered a global concern for managing the circumstances in an approach that will assist civilization without interfering with everyday ordinary activities, especially education for students. The author collected a hundred samples of academicians, parents, and learners across India to ascertain the importance using e-resource resources for higher education. This research methodology, which is descriptive cross-sectional, utilizes Non-Convenient Probabilistic sample as the sample technique. Open-ended as well as closed-ended inquiries concerning families as the academic community are part of the structured survey that was used to gather information about the use of e-resource learning. Frequency analysis, descriptive statistics, the Normality test (also known as the general Kolmogorov Smirnov test), the use of the U testing from Mann Whitney, key Kruskal

Wallis test, or the Normality test were among the data analysis techniques used. The study discovered that, with one potential example of gender-based division, opinions regarding the usefulness of each of the three factors—"Usefulness during electronic resources learning," Each group's demographic profile has different "The Impacts for E-Resources Learning" and "the advantages related to electronic resources learning" which has been established for the usage use E-Resources in Higher Education.

Key Words: *E-Resource, Covid, E-Resources Learning, Higher Education and Advantages of E-Resources Learning*

1. Introduction

Digital media has improved teaching and learning methods. The governments of a number of nations, including the US, Austria, and Lebanon, have provided financial incentives or promotional initiatives to encourage the use of e-learning. Technology advancements or education management systems like Moodle and Blackboard have also had an impact on the rise of e-learning (Paechter and Maier, 2010). A survey of 2,196 university students in Austria assessed the elements on both online and in-person instruction that they enjoyed in order to gain a better understanding of their experiences with e-learning. Maier and Paechter (2010). E-learning appeals to students due to its adaptability, variety of communication channels, and instructors' 24/7 availability. Students think there are benefits and drawbacks to both in-person and virtual learning. According to Flowers, White, Raynor, and Bhattacharya (2012), the rise in online enrollments worldwide, particularly in colleges and universities, shows that distance education has evolved into a more effective teaching and learning strategy inside the system. According to a survey on the possible benefits of online education, most university administrators who participated stated that it might benefit students, educational institutions, or the economy as a whole (Allan & Seaman, 2010). Additionally, it has been suggested that online education can give distant learners round-the-clock access to conventional classroom training (Alley, 2011). It's possible that distance learning won't meet every student's needs in terms of understanding and retaining the course material. Better cognitive presence may result from improving social and cognitive abilities through dialogue and reciprocal feedback.

Use of E-Resources in Higher Education During the COVID-19

In the twenty-first century, technology has impacted every aspect of life, including education. It is one of the most crucial tools for any country's economic development. However, no study has ever been conducted to assess the relationships between various ICT elements and their effects on Indian higher education. People's beliefs and behaviors have been profoundly changed by ICT, which has changed the way they work and engage with other people in their community1. In the context of connected to the internet instruction or learning processes, including administrative tasks such as virtual classrooms, student assessments, the admissions procedures, or tests, the introduction of technology for communication and information in higher education represents a paradigm shift. Saving time, effort, money, and energy is the main advantage of using computer technology in Indian higher education. This requires accessibility and usability. In this instance, the Indian government requests that the people embrace this shift in the face of a number of young, tech-savvy, and active stakeholders who can help the country become resilient and prosperous during the COVID-19 pandemic3. The Indian government must thus prioritize ICT-based initiatives and provide sizable funding for the advancement of critical information and communication technologies and system optimization. Numerous earlier studies have found that teachers are slow to accept new technology. This encourages the use of ICT for subjects like math, language, and engineering in both elementary and secondary educational institutions.

E-Resources: - Policies and Guidelines for Regulation

Since the latter week of March 2020, all Indian institutions and universities have been closed due to a nationwide lockdown enforced by the government in an attempt to cut off the COVID-19 link. The Ministry of Education and University Grants Commission, one of India's regulatory bodies, has issued multiple cautions regarding the use and growth of electronic resources in order to guarantee the continued operation of the educational system notwithstanding the pandemic (UGC, 2020). The Indian Council of Agricultural Research (ICAR) decided that all teachers and students would have public access to all agricultural education-related electronic resources developed by all ICAR-funded and sponsored institutes (Thammi-Raju, 2020).

All end users have access to the Remote Access Service, which allows users to use these technologies from anywhere during this pandemic emergency. All users may be advised by university and other educational institutions to utilize the electronic resources made available via Shodhganga, the National Digital Library in the nation of India, E-PG Pathshala, online courses, pdfdrive.com, or kopykitab.com. In accordance with the World Health Organization's guidelines, the great majority of publishers worldwide provide students with no cost access of their extensive material to support ongoing research and educational initiatives related to the onset and progression for the COVID-19 pandemic.

2. Literature Review

As Shahzad et al. (2021) noted, the COVID-19 pandemic's trajectory is constantly shifting. Utilizing a model and extant literature, this study offers an empirical basis for assessing the efficacy of e-learning websites. The study examined the differences in e-learning site usage between men and women. Finding out if student accessibility differs for male and female students on online learning platforms is the aim of this study. The study looked at a number of factors, including user satisfaction, system utilization, information quality, system efficacy, service quality, and the success of an online learning platform. The empirical information gathered from 280 students from various Malaysian institutions who took part in Google surveys was analyzed using partial least squares modeling of structural equations. According to the male model, user satisfaction and system and information quality are strongly correlated. Additionally, the connection between system utilization and the quality of the information was confirmed. However, there is a favorable correlation between user happiness and e-learning websites. The efficacy for data and electronic services is also supported by system use and user satisfaction, according to the feminine model. E-learning portals or system quality are strongly correlated, as are user satisfaction and system quality. Additionally, the study will assist Malaysian university policymakers, including the higher education minister, upper management, for integrating universities, in developing plans and regulations for the growth

of the country's e-learning platform. The study's findings indicate that e-learning sites are used differently by men and women in Malaysian colleges.

According to Ali, W. (2020), as worries concerning the COVID-19 pandemic and requests to control the virus have grown, an increasing number of educational institutions around the world have canceled in-person classes. The corona virus has exposed new weaknesses in educational institutions around the world. It is obvious that society requires robust and adaptable educational systems considering the ambiguity of our future. This study looked at relevant literature utilizing a meta-analysis approach to investigate how lifelong learning is crucial to incarceration in these specific situations. The findings indicate that electronic learning and internet-based information are becoming increasingly popular in higher education institutions worldwide. The results show that operational preparedness, assurance, learner availability, and ambition all play significant roles in ICT integrated learning, in addition to methodologies. According to this exploratory essay, workers should take advantage of their technological tools and experience to learn more, particularly during these extraordinary times. The results also suggest that online and remote learning may be necessary during COVID-19-induced lockdowns and social isolation. It also offers a solid foundation for additional study.

Gonzalez, T., and colleagues (2020) This study assessed how COVID-19 restrictions affected students' autonomous academic performance in higher education. In order to examine the disparities in ratings, 458 academicians from three different fields participated in an experiment from Spain's Universidad Autónoma de Madrid. Students were divided into two groups. The first group, known to be the "control" group, consists of the academic years 2017–2018 and 2018–2019. Students who received enrollment during 2019–2020 yet were unable to connect in reality due to inmate links fall into the second group, which is known as experimental. The findings demonstrate that COVID-19 confinement significantly improves students' performance. This influence is evident for operations that did not experience structural change, despite limitations. Both themes with an increase in the quantity of evaluation questions and subjects with a constant workload for students exhibit this impact. A study examining these students' pre-prison coursework also reveals that they did not engage in continuing education. Based on the findings, they conclude that students' learning behaviors

changed into more reliable habits as a result of COVID-19 imprisonment, increasing efficiency. The COVID-19 restriction is anticipated to improve children's exam scores, potentially increasing their academic performance.

Derashri, P. D., et.al. (2020) In accordance the definition supplied, the goal of the research is to look into the connection among ICT Utility, ICT Problems, as well as ICT Benefits over higher education institutions in India, and its facilitating effect, according to the opinions of various stakeholders such as students, parents, professors, and career counsellors. This has been taken into consideration when gathering the numerous Factors and Clusters from this study in order to build precise connections among each of the components. As part of the major study that resulted in the establishment of the connection, an organised questionnaire was constructed and open-ended as well as closed-ended enquiries were shown to 169 participants from all over India. Component evaluation, the information's Normalcy Test, a non-parametric test (containing variables such as the Man Whitney U Test and data Kruskal-Wallis Test), and the simulation for structural equations (SEM) utilizing AMOS 26 are examples of descriptive statistics. Confirmation factor analysis (CFA) or structural equation modeling were used to show an intermediary link between an IT technology, U ICT, and C ICT after the three elements were retrieved using exploratory factor analysis (EFA). There are no notable differences between educational institutions and the ICT construct in terms of career possibilities, knowledge, and ICT effectiveness. Two teams, one for technicians and one for non-technocrats, were formed using cluster analysis to evaluate the importance of differences in status, knowledge, and ICT efficacy.

3. Research Methodology

3.1 Research Problem

With the entire nation under lockdown, COVID 19 was the biggest threat confronting India. As a result, the Indian government had closed the whole sector until further notice. It had a major impact upon the Indian economy and has caused a disruption in the way that education is conducted in India. The country's kids, who are its future, have been the primary victims.

The many losses include the disruption of students' education, the internal evaluation of pupils placed on hold by professors, and the confusion of policymakers regarding the reopening or closure of schools or colleges during this epidemic. This paper seeks to ascertain whether COVID-19 has influenced Indian education society with the goal of promoting students' virtual studies and whether there are notable differences between specific demographic characteristics and factors influencing virtual studies.

3.2 Scope of the Study

This study helps identify how different demographic traits affect the pedagogy of virtual classrooms in Indian education. The main objectives of this study are to examine the various aspects of distance classroom teaching within the framework of the COVID-19 epidemic in Indian education society and to find significant disparities in demographic data. Many stakeholders will find this article helpful in creating and putting into practice different ideas that will help kids get through this difficult period without interfering with their academic pursuits. Stakeholders include parents, educators, educational ministers, and students.

3.3 Goals of the Study

- To investigate the respondent's demographic history as it relates to Indian higher education practices.
- To look into how using electronic resources within the COVID-19 pandemic affects students' learning in many ways.
- To look into the strong relationship between important e-learning components and the participant's social demographic profile.

3.4 Area of the Study

In order to investigate the impact of COVID-19 on the usage use e-resources in higher education, the author collected data from important stakeholders in the field, such as parents, students, and faculty.

3.5 Data Collection Source

Since the primary research findings are directly related to the occurrence of events, they are seen as more trustworthy. A systematic questionnaire that included open-ended as well as closed-ended inquiries was used to collect the data.

3.6 Variable of the Study

3.6.1 Independent Variable: The sociodemographic characteristics of the parties involved in higher education, such as age, gender, level of education, yearly income, etc., are the study's independent variables.

3.6.2 Dependent variable: The variables that are dependent in this study are "The Effectiveness for Online higher learning," "The difficulties on Online education," and "The advantages of Online education," all of which are factors impacting the use on electronic resources throughout the COVID-19 pandemic.

4. Analysis and Interpretation of Data

Table 1 Shows the Respondent's Social Demographic Profile

Gender	Percentage	Marital Status	Percentage
Male	59%	Single	23%
Female	41%	Married	71%
		Prefer Not to Say	02%
Respondent's Age		**Residence Area**	
Under 18 Years	14%	Urban	74%
18 – 30 Years	32%	Rural	26%
31 – 50 Years	40%		
More than 50 Years	14%		

Zone of Residence		**Cast Category**	
North Zone	18%	General	39%
South Zone	22%	SC/ST	23%
East Zone	27%	OBC	11%
West Zone	21%	EWS	17%
Central Zone	12%	SEBC	10%
Annual Income		**Profile**	
Less than Rs. 2,50,000	18%	Student	13%
Rs. 2,50,000 – Rs. 4,00,000	33%	Faculty/ Teaching Assistant	71%
Rs. 4,00,001 – Rs. 6,00,000	31%	Parent	16%
More than Rs. 6,00,000	18%		

(Source: Research Outcome, 2020)

It is evident from the above table of the sociodemographic profile of the respondents pertaining to the academic stakeholders—students, faculty, and parents—that the majority of the respondents are married, or 71%, and fall into the male gender category, or 59%. According to age, 40% of respondents are between the ages of 31 and 50, and 32% are between the ages of 18 and 30. Of them, 74% live in metropolitan areas. According to residential zones, the majority of these people are departing from the East Zone, which is followed by the South Zone. According to caste, the majority of respondents (39%) fell into the General category, which is followed by by the SC/ST category i.e. (23%) who earn between Rs. 2,50,000 and Rs. 4,00,000 annually, with Rs. 4,00,001 to Rs. 6,00,000 coming in second and third, respectively.

Table 2: Factors of E-Resource Learning with the Normality Value

Factors of COVID 19	Statements related to E-Resource Learning	Mean Score	P value of KS Test
Usefulness of E-Resources Learning	E-Resources helps in visualization of the student learning in COVID -19.	3.25	0.000**
	E-Resources provide flexible learning to the students.	3.84	0.000**
	E-Resources learning saves the time of the learner.	**3.99**	0.000**
	E-Resources saves the Money of the learner.	3.38	0.000**
Challenges of E-Resources Learning	E-Resources fails to catch the interest of the students in Pandemic.	**3.78**	0.000**
	E-Resources is costlier then offline classes.	3.65	0.000**
	E-Resources of learning fails to give the overall satisfaction to the students	2.47	0.000**
Advantages of E-Resource Learning	E-Resource learning provides no boundary of learning.	**4.12**	0.000**
	E-Resources provides one stop solution for all the learning.	3.69	0.000**
	E-Resources makes effective learning.	3.88	0.000**
	E-Resources provides cost effectiveness.	3.54	0.000**

(Source: Research Outcome, 2020)

H0: *The data has a normal distribution.*

H1: *The data's distribution is not typical.*

The table below shows the three factors that affect e-learning: "The utility with E-Resource," "The challenges of E-Resource," and "Advantages of E-Resource." On the "Utility on E-Resource Learning" scale, the statement that received the highest rating were "electronic resources education saves the learner's time." According to their median score of 3.99 from the "Difficulties of E-Resource learning" scale, all parties believe that "electronic resources failed to capture the attention of in learners in Pandemic." Having mean scores for 3.78 and 4.12, respectively, the assertion that "E-Resource educational organizations offer no boundaries of learning" was given the highest weight among the "The Benefits of E-Resource Learning" during the COVID-19 pandemic in India. The author was compelled to reject the null hypotheses and show that the data were in line with the Normal Distribution after looking at the Normality value of the Kolmogorov-Sminrov test and finding that all of the statements pertaining to those variables have a P value under 0.000, or less than 0.05. To conduct a more comprehensive analysis and find significant differences, the author was compelled to employ such non-parametric testing during the study.

Table 3: Table of Significant Variables between the Respondent's Socio-Demographic Profile and the E-Resource Learning Factors

Socio Demographic factor	Usefulness	Challenges	Advantages
Gender	0.478	0.114	0.245
	Not Much of a Difference	Not Much of a Difference	Not Much of a Difference
Age	0.000**	0.000**	0.000**
	Notable Distinction	Notable Distinction	Notable Distinction
Marital Status	0.000**	0.000**	0.000**
	Notable Distinction	Notable Distinction	Notable Distinction
Annual Income	0.014**	0.001**	0.002**
	Notable Distinction	Notable Distinction	Notable Distinction
Caste	0.000**	0.000**	0.000**
	Notable Distinction	Notable Distinction	Notable Distinction

(Source: Research Outcome, 2020)

H0: *The parameters influencing the respondents' use of e-resources do not significantly differ from their sociodemographic profile.*
H1: *The respondents' sociodemographic characteristics and the factors influencing their use of e-resources don't seem to differ all that much.*

The sociodemographic profile of the respondents and the factors affecting their usage of e-resources varies significantly, as the following table illustrates. The respondents' opinions on caste, age, yearly income, or marital status differ substantially. These P values all indicate an important variance in respondents' attitudes because they are less than 0.05 and fall below the rejection range of the null hypothesis. However, the P value of 0.478 for the gender-related variables, which is higher than 0.05, suggests that the researcher is unable to rule out a null hypothesis because there was certainly no statistically significant difference in the gender profile with regard to the factors related to studying E-Resources during the Indian pandemic.

5. Conclusion

The study finally be able to conclude that the highest number of respondents covered under this study belong to the Male category with having the income of average five lakh rupees covering the stakeholders of the parents, students and the Academicians who are falling udder the Unreserved category of the caste. Looking at the factors responsible for E-Learning Resources, the study finally concluded the three major factors that have been identified in it. They are:

- Benefits of E-Resource Learning
- Difficulties of E-Resource Learning
- Usefulness of E-Resource Finding

With a possible exception to the stakeholders' age, almost all of the participants (through age, marital status, yearly earnings, or class) had major variances in their views regarding the impact for the COVID 19 study or its impact on the implementation of e-resource instruction

within Indian higher education, according to an analysis of the significant differences within their opinions in the last days of their lives.

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