

During COVID-19, A Comprehensive Application of Theme Analysis Was used To Study Students' Perceptions of Online Learning in India

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Abstract

As a result of the unanticipated global spread of COVID-19, students were forced to switch from classroom study to virtual learning. This study examines the challenges that Indian students in higher education faced, the strategies they used, and the help they needed in their online courses over the length of the study period. Students were given an internet survey to complete in which they were asked questions about these three elements. The survey was completed by forty students from various academic institutions, and the replies were evaluated using the theme analysis method. Cultural difficulties may have caused challenges to students' online education from the standpoint of their academic setting and the availability of technology, according to the findings of the study. It's critical to offer support to students who have been psychologically harmed by online courses, especially when it comes to input clarity and course outline transparency. Students appear to have employed self-learning techniques to supplement their knowledge, with time management apps and lecture recordings exposing the expanding role of technology in the self-study setting. Under the COVID-19 initiative, these cultural, technical, and psychological elements will be described in greater depth, with accompanying recommendations to enable teachers and university decision-makers to examine the circumstances that can assist in encouraging and increasing web-based learning for students in higher education.

Keywords: online teaching ,learning ,covid -19, academic setting

Introduction:

Since late 2019, India's higher education system has undergone a remarkable shift from traditional classroom instruction to virtual learning. Covid-19 has an impact on both pupils and teachers. Students have been affected by the absence of face-to-face education at institutions. Choosing outstanding institutions might be difficult for students who want to pursue further education. The loss of regularity in traditional teaching activities has had a tremendous impact on educators, forcing them to explore online modalities of instruction. Due to the significant influence of Covid-19 on the daily lives of regular enterprises, young and freshly created educational institutions are having difficulty maintaining their financial position. Several Indian universities have elected to charge cheaper tuition costs. The COVID-19 could be a major impediment in students' efforts to graduate during these school years.

Furthermore, students who are about to graduate frequently experience mental and assessment disruptions in their final year of education and learning. Fresh graduates, on the other hand, face considerable job market hurdles as a result of the economic downturn. Following March 2020, the University Grants Commission (UGC) of India addressed all higher education institutions and universities in India to request that the final and intermediate six-month exams be postponed. Anna University in Chennai, India, held online final exams in September 2020. Madras University, on the other hand, gave students the option of taking a virtual or traditional offline exam, with tests scheduled for late September 2020.

Other institutions, such as JNTU- Jawaharlal Nehru Technological University in Hyderabad, performed traditional exams while maintaining social distance and the COVID-19 safeguards. From

September to November 2020, the University of Delhi in India held examinations in a variety of fields (8, 9). As a result, many young graduate students in India want to start a more wealthy and affluent career.

Approximately 10,000 institutions and over 40,000 colleges across India provide virtual classes. According to the Ministry of Health and Family Welfare of the Indian government, the death toll from Covid-19 as of September 3rd, 2021 is 439895, making India one of the worst-affected countries in the world. Figure 1 depicts the global distribution of Covid-19 instances as of August 24, 2021, with India included. Depicts Covid-19 instances across the state as of October 2021. However, in order to maintain the standard of higher education in India, India's Higher Education Department has decided to reopen educational institutes for academics and graduate students to conduct scientific experiments in the laboratory beginning October 15, 2020, with visual learning suggestions.

Using social media to give customized courses to their students during visual learning and teaching has proven tough for some preservice teachers. They've also put in place new protocols for evaluating the success of online learning. Students' virtual learning has been hampered as a result of limited internet access, particularly in rural areas, which will have an impact on the average scores received in the exam. Covid 19 has an impact on global transit as well. Enrollment in higher education by foreign students has also been interrupted. As a result, the Covid-19 effect has created a difficult environment for the desired profession, as well as concern and bewilderment among young students and graduates. Other countries have also experienced virtual learning difficulties as a result of Covid-19.

In countries such as China, the United States, the United Kingdom, and this rapid shift affect students, which is largely done when programmes are offered voluntarily or on a micro-level. Despite the growing number of articles linked to Covid-19 that have an impact on online learning, some instances of students' experiences and needs in persuasive online education have been offered. It's still important to think about how students have used their methods to foster self-learning. As a result, this study aims to provide a comprehensive account of the challenges students face, the help they need, and the methods they use to study online during this abrupt change. Using the current educational disruption as a case study.

Literature Review:

Over the last two decades, higher education has seen several transformations, ranging from collaborative learning – for example, integrated or flipped education – to widely used online programmes that employ wireless and wired connection methods. In 2018, seven million students in the United States enrolled in online courses, with 53 percent taking at least one online course and 47 percent finishing their studies totally online. The National Center for Education Statistics (NCES) published a report in 2019. Around 300 million Chinese people have enrolled in one of China's 500 Massive Open Online Courses (MOOCs). Beginning with one-way learning, in which users read course teaching materials alone with limited instructor engagement, and progressing to peer tutoring, e-learning has gone through numerous stages.

Modernist approaches have been used in digital training to link and founder learning and research experiences in this virtualized environment as if people were encountering the same classroom learning with a focus on involvement, cooperation, and reflection. As indicated by their reactions to recent public health events, instructors and students are unprepared for web-based learning. During the SARS pandemic in Asia in 2003, as well as the H1N1 influenza epidemic in the United States in 2009, contact classes were discontinued and online learning was utilised (20,21). Web-based learning presents a big challenge for underprepared instructors and students. In a short period of time, instructors had to transfer classroom teaching and material to online instruction.

Students, on the other hand, had the added pressure of being expected to study alone. After looking into the perspectives of students, it was discovered that e-learning had both positive and negative effects. Students say that the concentration on the text as the major medium of expression in

web-based learning drives them to consider more carefully than answering vocally when compared to oral responses. Because their postings were public, they wrote more carefully, and viewing other people's contributions allowed them to routinely reflect on the course topic. On the other hand, pupils who do not have good writing abilities have found it challenging to explain them through this method of communication.

Participants may have even felt obligated to participate, resulting in poor participation. Due to the fact that students can study wherever and whenever they choose, there is a lag in responding, which can be challenging, especially when students are engaged in reactive tasks with one another. This issue has also been seen in the communicative engagement during learning. When students place a high value on a speedy response from educators, it can have a negative impact on their happiness and performance. While the flexibility, autonomy, and accessibility afforded by online web-based learning may have benefited children, the student-centeredness of the educational process necessitates students' increased ownership of the knowledge in the sense that they are expected to be self-regulated and motivated.

Students can employ a range of self-learning tactics to improve their learning, including visualization, memos, information searches, and notes targeted strategies (29). Self-learning approaches research, on the other hand, has primarily been conducted in a digital context. The extent to which these strategies are useful for students in a teaching approach during a pandemic has yet to be determined, and this is one of the research's key goals.

India is a prominent player in the global education sector, according to the IBEF (Indian Brand Equity Foundation). With over 20,000 educational systems, India has one of the world's largest academic infrastructures. Nonetheless, the current educational system still has a lot of opportunity for improvement. With 26.31 percent of India's population aged 0 to 14, the country's education sector offers numerous opportunities for growth and development. With nearly 500 million people, India has the world's largest population in the age group of 5-24 years. The education business stands to benefit greatly from this. In the fiscal year 2018, the Indian education sector was worth \$91.7 billion.

Since May 17, 2021, India has had 981 universities, which significantly increased over the previous year. In 2019, India had 37.4 million individuals registered in higher education. More than 27 percent of Indian students enrolled in higher education in 2020. The Indian Council of Agricultural Research (ICAR) is one of the biggest national agricultural organizations worldwide. As of July 2021, it has 122 institutions and 67 agricultural colleges spread throughout the country. In the academic year 2020-21, there are around 9,700 AICTE-approved institutions. There are 4,100 undergraduate courses, 4,951 master's courses, and 4,514 certificate courses offered by AICTE-approved institutions out of the total.

As per the National Institutional Ranking Framework, major Indian Institutes of Technology (IITs) secured seven places out of the top ten institution standings in 2020, as per the ratings. In the most current QS World University Rankings, 12 Indian institutions were listed among the top 100 universities worldwide. India has also eclipsed the United States as the world's second-largest web-based learning market, according to KPMG. The industry is expected to produce US\$ 1.96 billion in revenue by 2021, with around 9.6 million users, up from US\$ 247 million and 1.6 million users in 2016. In recent years, the Indian education industry has seen some considerable expenditures and breakthroughs. According to an online report, India's Education Ministry has set aside Rs 93,224 crore for the fiscal year 2021-22.

The Department of School Education and Literacy (DSE&L) would receive Rs 54,874 crore, while the Higher Education Department will receive Rs 38,350 crore. The expenditure for fiscal year 2021-22 is 6.13 percent lower than the previous budget, which was Rs 99,312 crore, according to the latest budget. Government authorities, according to industry insiders, must meet educational funding expectations. This follows a report by NirpekshKumbhat, CEO of SkillEnable, who stated that "India spent only 3.1 percent of its GDP on education in 2019-20, compared to the 6 percent suggested by each government policy since 1968, which is 50 percent lower than the amount proposed, as demonstrated by the Economic Survey," and that "India spent only 3.1 percent of its

GDP on education in 2019-20, compared to the 6 percent suggested by each government policy since 1968, which is 50 percent lower than the amount proposed.

As a result of this underfunding, the tens of thousands of dollars invested in education systems, which serve 52 percent of India's 24.8 million school-aged children, have been disproportionately underfunded for a long time. This is the critical issue in India, as learning outcomes fail to justify higher standards. According to IBEF, Vah Vah!, an online vocational education network that will provide cosmetics and beauty classes, will start in 2021. Sequoia India's Surge initiative led the seed round, which raised US\$1.85 million. The formation of 'DigitalEd India,' a partnership that would bring the world's most acceptable digital learning to India by the year 2021, has been reported by DigitalEd and Binary Semantics. Amazon India is launching a Machine Learning division.

Online Learning:

The educational landscape has changed dramatically in the last two generations, according to Kaufman (2015), with several academic institutions moving from supplementing face-to-face instruction with online modules such as combined or flipped teaching methods to fully implementing online courses that include both wireless and wired communicative tools such as chat rooms. The rise in interest in continuous learning, budgetary control, and creative learning has fueled the growth of online education, which has helped universities keep up with rising higher education demand while also becoming more resilient in the face of internationalization, technological advancement, and other challenges (Lee-Post and Hapke, 2017; Prior et al., 2016). As of 2019, according to the National Center for Education Statistics.

In 2018, around 7 million students in the United States took part in virtual classrooms, with 53% finishing at least one programme online and 47% earning an entirely online degree. In China, more than 500 Massive Open Online Courses (MOOCs) are available, with about 300 million people registered to participate. According to a 2017 poll conducted by Class Central, the number of Indian students who have registered in at least one MOOC has climbed considerably, from 58 million in 2016 to 78 million in 2017. (a 12 percent increase). The Indian government has taken initiatives to promote online learning, which has the potential to allow many people to further their education while also contributing to the country's symmetrical growth.

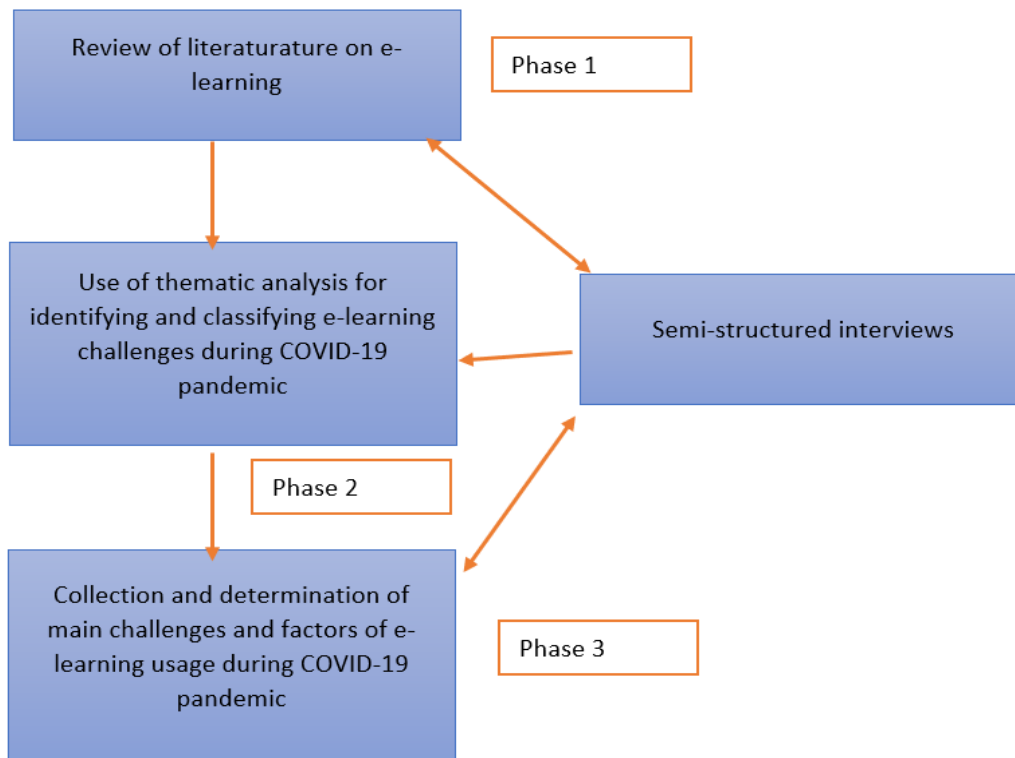
NPTEL, mooKIT, edX, Coursera, and SWAYAM are some of the most well-known digital sites in India. Aside from the systems mentioned above, there are a slew of others that offer educational software in a variety of fields, though many are less well-known.

Research methodology:

The overall structure of the study's research technique, which is broken down into three primary sections. In stage one, a review of the literature on the factors that influence e-learning deployment and the difficulties that arise was done. Theme analysis was used in the second stage to identify and categorize the factors and challenges associated with e-learning adoption. The qualitative data acquired during the interview, which was conducted using the NVivo application, was analyzed using TA. A report was written to summarize the findings. The following five stages were constructed for executing the thematic analysis approach for this research, according to Braun and Clarke (2006): familiarization with data, production of initial codes, scanning for themes, identifying and labelling. The gathering and identification of the most significant hurdles and variables connected with the adoption of e-learning is the goal of this stage. We'll go through the data collection process, the research sample, and the data analysis strategy used in this study in further detail in the following sections.

Thematic analysis (TA) is a method for systematically discovering, categorising, and comprehending important patterns (themes) in a large data set. Through focusing on importance throughout a data collection, which is possible by focusing on value across a data set, TA aids a researcher in perceiving and making logical sense of communal or collective ideas and actions. The major purpose

of TA is not to find one-of-a-kind and unique interpretations and views that can only be found within a specific aspect. This method can be used to establish what is familiar about the way a subject is discussed or written, as well as to interpret the parallels found (Braun and Clarke, 2012). The structures of interpretation that TA enables the researcher to detect must be relevant to the subject and analytical process that the researchers are investigating. The response to a subject is produced by the analysis, unlike in some descriptive studies where the specific issue being addressed is only apparent during the investigation. Several patterns may be found in each data collection; the purpose of the data approach is to assess those that are significant to answering a specific research question (Braun and Clarke, 2012).



TA is a flexible method that allows the investigator to focus on the data in a variety of ways. TA allows you to focus on assessing interpretation throughout the entire data set or investigate one single component of a phenomena in greater depth than you could otherwise. As detailed in the next section, one can either provide the data's obvious or explicit meanings or investigate the underlying essence, preconceptions, and concepts that lurk underneath what is specified (Braun& Clarke, 2006). Because of the many diverse forms that TA can take, it can be used to answer a wide range of research questions and study topics.

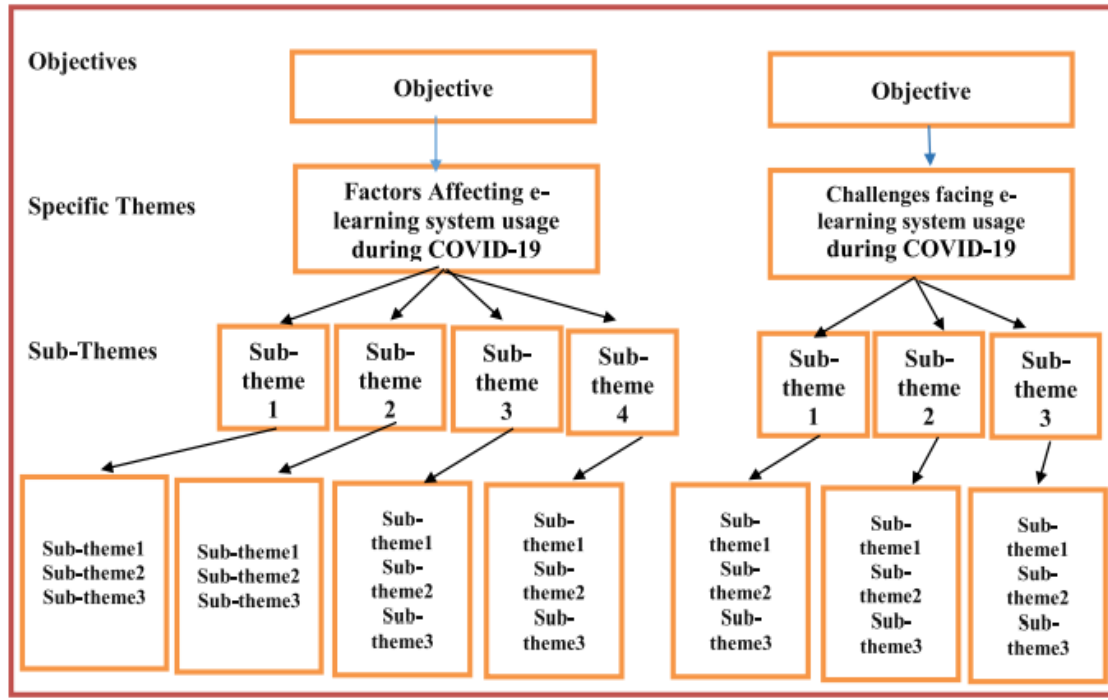
Data collection:

The data for this study was collected and analysed utilising a semi-structured interview method, which is used to extract and analyse qualitative data. The qualitative technique was established to aid researchers in better understanding the deployment of e-learning systems from many sources and viewpoints in order to better understand the phenomena, which is difficult to define in quantitative terms (Myers and Avison 2002). Because it does not approach data as universal but rather as a subjective reality related to differences in each person, the qualitative technique is the most effective technique for extensively investigating the participants' feelings, views, and beliefs (Creswell 2014). Furthermore, as previously stated, it is an effective technique for meeting the study's objectives on time (Creswell 2014).

One of the advantages of employing a qualitative technique in this study is that it allows researchers to analyse participants' information rather than just listing numerical facts to construct

the case study in question. The researchers were able to establish contact with policymakers, information technology professionals, and faculty members who were actively involved in the implementation and support of e-learning systems in institutions as a result of this method. Furthermore, the qualitative method allowed the researchers to gain a more in-depth understanding of the fundamental factors that influence e-learning system acceptability in institutions, as well as the major challenges that e-learning system adoption faces in the country. This could also provide enough data to answer the research question.

Data analysis Procedure:



Findings of the study:

I. Challenges encountered by students when participating in online learning:

Main Theme	Sub-theme	Explanation
One-on-one learning	Need of students to be physically classroom settings	When it comes to practice or research lab tools, students struggle to practice such assessments at home.
IT Issues	limited electronic tools	Students have limited resources to attain online classes
	Having problems with poor Internet connections	Students are experiencing difficulties connecting to the e-learning system.
Student’s focus and Concentration during the class	Being forced to study in an unfavorable setting	Students experience disturbance at home while attending online classes
	Avalibility of e-resources	When e-resources are easily accessible, students expressed that they are more likely to put off their study schedule.
	Bodily uncomfortableness	After attending classes for long hours, students find it physically difficult to participate in online learning using digital gadgets
Student’s interaction with peers and teachers	Limited communication within students	Students find it difficult to establish friends and participate in conversations with their classmates while participating in online courses.
	Limited communication between students and teachers	Students find it challenging to interact with their instructors and obtain quick feedback while studying online.
Arrangement of work-time	Obtaining ambiguous assignment instructions	Students are confused about the submission date due to a lack of detailed guidelines.
	Receiving all of the video lessons at the same time	Students experience challenges to maintain with curriculum progression when some lecturers only publish the video lectures in a single batch at a particular time in the semester.
Evaluation method	Feeling insecure about the reliability of online exams	The validity of online assessments is a source of worry for students who are afraid that dishonesty and copying may occur.

One-on-one learning

One-on-one learning is referred to as face-to-face classroom learning when curriculum information and study materials are presented in person to a group of students. This allows for direct interaction between a learner and a teacher. This is the most traditional form of learning education available today. Learners also benefit from increasing levels of contact with their classmates and instructors. When students engage in face-to-face learning, they are held accountable for their achievements on

the specified class date and time. Students who study face-to-face have a better understanding and retention of course information, as well as the opportunity to connect.

Students commented that certain lessons could not be substituted by web-based learning and had to be completed in a school classroom, such as formal expertise where presentations and practical learning experience are required, such as the following: "Some programmes, such as behavioural experiments, require classroom instruction." I won't be able to finish it at home.

Q. No.	Question
1	I require a presentation as well as the ability to complete the assignment on my own
2	Classroom education helps students strengthen their critical thinking skills. We have the opportunity to engage in real-time dialogues with our pupils while teaching in a classroom. We can use critical thinking to come up with new ideas or justifications
3	We socialize with our peers and establish relationships with our teachers in the constraints of a classroom. I feel it aids in the development of social skills while they are pursuing their academic goals
4	Classroom education teaches us how to improve our organizational skills by starting with the basics, such as arriving to school every day, and working our way up. We are held accountable for being motivated to accomplish coursework during class time, which includes doing schoolwork the day before, preparing for class quizzes, turning in given chores, and participating in in-class arguments. In essence, we are taught how to manage our time, prioritise projects, and finish homework on time (
5	Professors' active participation stimulates our perceptions as we engage in fascinating and exciting activities. As a result, we may build on what we've learnt so far in the session
6	Classroom education instils coping skills, communication talents when it comes to successfully presenting ideas across the classroom, team cohesion, and the capacity to work with people from various backgrounds, among other things. Such possibilities for growth have a significant impact on students' speaking and receptive skills, as well as their emotional growth and maturation
9	Rather than heading to the laboratory later, I've explored the college campus." However, I am unable to complete online lessons outside of my home, thus I must return to my residence. As a result, there will be no laboratory work to be done

Application of online teaching-learning in Higher education Institutes:

Numerous roadblocks have been encountered in the educational system's transformation as a result of the COVID-19 dilemma; these issues are linked to the distinctive notions of online learning and their technical challenges. Prior to the advent of the virus, online learning was restricted to knowledge, particularly by open universities in India. On the other hand, interactive learning has become a massive task as a result of the COVID-19 stimulated time, and interested parties are undoubtedly unqualified to deal with the rapid education reform since they have not yet been taught to design to deal with the immediate circumstances. As a result, it is vital to analyze the effects of the change in order to assure good education reform (in this case, the transition from traditional teaching-learning approaches to digital teaching techniques). ortrays the process of determining an online teaching and learning action plan. It all starts with the University Grants Commission and the Ministry of Human Resource

Development (supra-system), universities and colleges (system), and various academic departments (sub-system) all working together to support the integration of digital teaching and learning into the educational system. Because of COVID-19, the schooling system's shared purpose recognised that, during the epidemic, teachers and students are driven to alter interactive learning methods to fit their students' current educational expectations. Everyone, whether educators or trainees, found it simple to use social media apps including WhatsApp, Facebook, Twitter, and Instagram. The bulk of stakeholders had cellphones, with only a few having laptops, necessitating the use of resources to execute online teaching and learning. Mizoram University has a learning management system (LMS) and an information and communication technology centre, both of which aid in the flawless monitoring of online teaching and learning styles.

Challenges	Remarks
Tech Challenge	Students that are experiencing technical difficulties when using an e-learning system. (Imaiah and Almulhem 2018; Almaiah and Alyoussef, 2019)
Insufficient technical support	Inability to conduct numerous operations (configuration, maintenance, repair, computer networking, and cyber security) due to a shortage of professionals and inadequate support infrastructure During the e-learning session, the internet speed was slow, and there was a lot of internet traffic. (Eltahir,2019; Esterhuyse and Scholtz, 2015).
Unawareness of the Situation	Students' limited understanding of online capabilities and their unwillingness to accept responsibility for their e-learning are significant issues (Bozkaya et al. 2012; Lwoga and Nagunwa 2012)
Universities Readiness	Students demonstrate limited readiness to takeup online learning (Al-Araibi et al. 2019; Eltahir, 2019)
Curriculum Content of High Quality	When it comes to interaction, the course material is of lower quality (Almaiah and Almulhem, 2018)
Adaptation of the information to a different language	There is a lack of flexibility and customization of course material to meet the needs of students (Voogt et al., 2013)
Content of the program	Inadequacy of program material in terms of its relevance and reliability, as well as incompatibility of course material with learners' needs (Voogt et al., 2013)
Faculty members' knowledge of information technology	Faculty members' lack of computer literacy (Radijeng, 2010)
Faculty members' engagement of e-learning methods	Teachers' reluctance to use new technologies (Vershitskaya, et al., 2020).
Faculty members have a limited level of expertise.	Educators cannot maintain control over course material when giving an e-learning session (Uppal, (2017).
The commitment of faculty members	Faculty members are not using e-learning because of a lack of effort and support (Pegrum et al., 2013).
A lack of consideration about cyber security	The accessibility of e-learning boosts concerns about learners, staff, and instructors (Kwofie and Henten, 2011).
Limited technical infrastructure	The hardware, software, facilities, and wireless connectivity available at the university are referred to as "hardware and software (Almaiah et al., 2016)

Conclusion:

Our study used theme analysis to examine students' perspectives on e-learning within the COVID-19 framework, uncovering seven types of difficulties they encountered, strategies they used, and the help they need during the course. This study demonstrated how psychological, technical, and cultural aspects influence students' understanding of online courses, and how this has implications for online courses and instruction at both the conceptual and applied levels. On more of a theoretical level, in response to the expectations of students enrolled in online courses during Covid-19, a number of specific proposals have been made. Reduced constraints on technology lending programmes may be able to alleviate students' suffering as a result of India's cultural issues; establishing regulations regarding the supply of classroom presentations may be able to boost students' ability to study independently. Offering audio inputs instead of formative remarks may be more acceptable for Indian students, and adding the usage of time management apps into coursework may align with students' needs. For educators, using a unified platform to communicate course details on a regular basis may help students cope with the added stress of missing a deadline. It has showed how specific linguistic and technical factors must be taken into account when adopting strategies to aid learners with online courses in terms of thinking. First and foremost, our students' expectations for increased face-to-face contact with instructors, which they prefer to accomplish vocally rather than through textual means, highlight the need to reduce transactional distance. The fact that the pupils are learning English as a second language does not rule out the possibility that they are not completely comfortable expressing themselves in written English. They might, on the other hand, be allowed to communicate more effectively by employing vocal language to communicate in their own tongue. This suggests that learners' language needs may play a role in determining the efficacy of measurements based on them. ur work has made a significant contribution to the growing body of research on web-based learning during a pandemic by presenting the perspective of students and emphasising their usage of coping mechanisms during online learning. According to the existing literature, students were relatively unprepared to deal with online courses due to their attempts to research the cited barriers and seek support. Our research has given this a positive spin by revealing students' active endeavors to become autonomous learners through their own strategies, such as self-directed learning. Students expect positive responses to their psychological, technological, and cultural needs, as well as positive responses to their academic support. With the use of Indian students' experiences, this study research has successfully provided instructors with an insight.

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