

# Exploring Student Perceptions of Online Learning Amidst the COVID-19 Pandemic: A Qualitative Investigation

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## **Abstract:**

This study explores university students' perceptions of online learning during the COVID-19 pandemic in the Indian context, focusing on their experiences, challenges, and perceived benefits. Employing a qualitative research design, semi-structured interviews were conducted with 42 undergraduate students from Delhi University. Thematic analysis was used to identify key themes such as technological challenges, student engagement, and the effectiveness of online learning. The findings reveal that while students appreciated the flexibility and reduced costs associated with online learning, significant challenges related to internet connectivity, platform usability, and student motivation were prevalent. Additionally, students expressed concerns about the clarity of assessment criteria and the lack of feedback on assignments. Despite these challenges, many students recognized the advantages of online learning, including its flexibility and access to digital resources. The study highlights the need for improved digital infrastructure, more engaging pedagogical strategies, and clearer assessment frameworks to enhance online learning experiences. The findings contribute to the existing body of literature by filling a gap in understanding the unique challenges and opportunities faced by Indian students, offering valuable insights for policymakers and educators to develop more inclusive and effective online learning environments.

**Keywords:** Online learning, COVID-19 pandemic, student perceptions, qualitative study, digital education, India.

## **1. Introduction**

The global outbreak of COVID-19 has profoundly affected various sectors, including education, compelling a swift transition from traditional in-person learning to online modalities. This shift has resulted in both opportunities and challenges across different educational settings worldwide. Online learning, while not a new concept, became the primary mode of education delivery in response to the pandemic's containment measures, impacting over 1.6 billion students globally (UNESCO, 2020). The rapid change forced educational institutions to adopt digital tools and platforms to maintain continuity in teaching and learning processes, leading to a mixed reception from educators, students, and parents alike (Hodges et al., 2020). This unexpected pivot to online learning has raised significant questions regarding its effectiveness, accessibility, and long-term implications on the educational landscape.

The initial adaptation to online learning during the pandemic was met with varying degrees of preparedness among institutions, influencing student experiences and perceptions. Studies indicate that a substantial percentage of students faced challenges related to internet connectivity, technological

limitations, and a lack of digital literacy (Ouma, 2021). In many developing countries, students primarily relied on mobile phones to access course materials, which posed difficulties such as high data costs, limited storage capacity, and unreliable networks. For instance, over 75% of students in countries like Nepal, India, Pakistan, and Algeria reported such issues, reflecting a broader challenge of digital inequity (Ouma, 2021).

Further, research highlights that student perceptions of online learning during the pandemic are shaped by multiple factors, including the quality of instructional design, interactivity, and technological infrastructure (Zubaidah et al., 2022). A study conducted in Indonesia found that while students appreciated the flexibility of online learning, many struggled with motivation, engagement, and the lack of face-to-face interaction, which are critical for effective learning outcomes (Surani & Hamidah, 2020). Additionally, online learning's dependence on digital tools and platforms has underscored the need for adequate training and support for both students and educators to enhance the learning experience (Burkšaitienė, 2023).

During the COVID-19 pandemic, online learning became a vital solution to maintain educational activities, but it also exposed the disparities in access to technology and internet connectivity across different regions (Natasa, 2022). The sudden transition required students to adapt quickly to new learning environments, often with limited support, resulting in diverse perceptions and experiences. In a study involving medical students in the UK, it was observed that although online learning facilitated continuity in education, it also posed challenges such as family distractions and poor internet connections, affecting overall satisfaction and engagement (Dost et al., 2020).

Moreover, the effectiveness of online learning during the pandemic has been debated, with mixed findings regarding student satisfaction and learning outcomes. While some students reported positive experiences related to flexibility and self-paced learning, others highlighted the lack of social interaction, technical difficulties, and reduced opportunities for practical or hands-on activities, particularly in fields such as medicine and engineering (Rakhmanina et al., 2021). For example, a survey of 2721 medical students in the UK revealed that although 23.56% of students spent more than 15 hours per week on online platforms during the pandemic, many still preferred traditional in-person learning methods due to the challenges mentioned (Dost et al., 2020).

The significance of this study lies in its focus on understanding the nuanced perceptions of students towards online learning during the COVID-19 pandemic. Given the diverse experiences and challenges reported across different contexts, this research aims to explore how students perceived online learning's effectiveness, accessibility, and overall impact on their educational journey. Understanding these perceptions is crucial for educational institutions and policymakers to make informed decisions regarding the future integration of online learning in curricula and to address the digital divide that persists in many parts of the world (Surani & Hamidah, 2020; Ouma, 2021).

As the pandemic continues to influence educational practices globally, the need to evaluate and enhance online learning's effectiveness has become increasingly important. This study seeks to contribute to this understanding by examining the factors that shaped student perceptions during this unprecedented shift to digital education. By investigating these perceptions, the research will provide insights into the potential benefits and drawbacks of online learning, thereby helping stakeholders develop strategies to optimize its use in future educational scenarios (Burkšaitienė, 2023; Rakhmanina et al., 2021).

## 2. Literature Review

The COVID-19 pandemic has significantly impacted educational practices worldwide, compelling institutions to adopt online learning as an alternative to traditional classroom settings. Multiple studies have explored students' perceptions of online learning during this period, highlighting a range of experiences and challenges.

**Rakaj (2022)** conducted a study at the University of Prizren, Kosovo, to examine undergraduate students' perceptions of online learning during the COVID-19 pandemic. The study employed a quantitative approach, utilizing an online questionnaire distributed to 100 students. The findings revealed that students generally held negative perceptions of online learning, citing issues such as lack of quality interaction, decreased concentration, and inadequate computer skills. The research indicated that the absence of in-person engagement and insufficient digital infrastructure contributed significantly to students' reluctance to accept online learning as an effective alternative to face-to-face instruction (Rakaj, 2022).

Similarly, **Zubaidah et al. (2022)** explored student perceptions of online-based learning in terms of interactivity, independence, accessibility, and enrichment aspects. Using a descriptive qualitative approach, the study identified that while certain aspects like interactivity and enrichment were viewed positively, accessibility and independence aspects were seen as significant challenges. The study concluded that, despite some positive perceptions, many students found online learning less effective due to difficulties in accessing learning materials and understanding content delivered online (Zubaidah et al., 2022).

**Marmoah and Poerwanti (2022)** conducted a quantitative descriptive study to investigate both lecturers' and students' perceptions of online learning problems during the pandemic. The study used a Likert scale to analyze perceptions across six aspects: lecture plans, online lecture activities, recording, evaluation, assistance services, and support facilities. The study found that effective online learning required robust interactions between students and lecturers, supported by reliable technology and clear communication channels (Marmoah & Poerwanti, 2022).

**Almusharraf and Khahro (2020)** evaluated student satisfaction with online learning platforms in Saudi Arabia, applying transformative learning theories to examine postsecondary students' experiences. Using a survey of 283 students and data analysis tools like SPSS, the study found high satisfaction levels, particularly with platforms like Google Hangouts and Google Classroom. However, the findings also suggested the need for further research into the integration of professional development workshops and training to enhance online learning outcomes (Almusharraf & Khahro, 2020).

In another study, **Hassan et al. (2021)** explored academic self-perception and course satisfaction among Saudi university students during virtual classes. The research demonstrated that students had higher scores on negative self-perceptions compared to positive ones. Factors like workload and inadequate technical support were significantly correlated with negative self-perceptions, affecting overall satisfaction. The study underscored the importance of balancing workloads and providing sufficient technical support to enhance student satisfaction and performance (Hassan et al., 2021).

**Dastidar (2021)** examined the impact of online learning environments on student satisfaction among undergraduate and postgraduate students in West Bengal, India. The study used ANOVA and regression analysis to assess differences based on the academic stream. The findings indicated that while interaction and collaboration were significant predictors of student satisfaction, instructor support, active learning, and autonomy were not. The study suggested that enhancing student interaction could improve overall satisfaction with online learning environments (Dastidar, 2021).

**Natasa (2022)** focused on the perceptions of students at Riau University towards online learning during the pandemic. The study utilized descriptive quantitative methods to collect data from 127 students via questionnaires. The findings revealed a generally negative perception, with students citing lack of enthusiasm, internet sustainability issues, and technical problems as primary concerns. This study highlighted the critical role of stable internet access and effective technical support in shaping positive student perceptions of online learning (Natasa, 2022).

**Ozfidan et al. (2021)** explored variables contributing to student satisfaction with online teaching during the COVID-19 pandemic, using an online survey and data analysis techniques. The study identified eight key factors, including effective communication, access to a wide range of content, and meaningful discussions, as significant contributors to satisfaction. The research provided insights into the elements that facilitate a positive online learning experience and suggested strategies to improve future online education (Ozfidan et al., 2021).

Despite the extensive research on student perceptions of online learning during the COVID-19 pandemic, there remains a notable gap in the understanding of these perceptions specifically in the Indian context. Most studies have either focused on broader international samples or specific subgroups, such as medical or language students. This study aims to address this gap by employing a qualitative approach to explore the perceptions of a diverse group of university students in India. Understanding these perspectives is significant because it will provide insights into the unique challenges and opportunities within the Indian educational context, which may differ due to cultural, economic, and technological factors. Addressing this gap will help policymakers and educators develop more tailored strategies to enhance the effectiveness and accessibility of online learning in India.

### 3. Research Methodology

This section outlines the research design, data collection methods, and data analysis techniques employed in this study to explore student perceptions of online learning during the COVID-19 pandemic in the Indian context. A qualitative research design was utilized to gain a comprehensive understanding of the participants' experiences and insights.

The study adopts a qualitative approach to investigate the perceptions and experiences of university students regarding online learning during the pandemic. The qualitative method was chosen for its ability to capture rich, detailed data that reflects the participants' perspectives and experiences in depth. Semi-structured interviews were conducted to allow flexibility in the questioning process, enabling the exploration of emerging themes and in-depth understanding of the participants' views.

Data were collected from a sample of 42 undergraduate students from Delhi University. The participants were selected using purposive sampling to ensure a diverse representation from various faculties, including Arts, Science, and Commerce. The inclusion criteria were that participants had engaged in online learning for at least one semester during the COVID-19 pandemic. The data collection process took place in March 2024 through virtual interviews conducted on the Zoom platform, adhering to health and safety protocols.

The semi-structured interview guide included open-ended questions that focused on several aspects, such as perceived effectiveness of online learning, challenges faced (technological, accessibility, and engagement-related), and suggestions for improving online learning practices. Each interview lasted between 45 to 60 minutes, and all interviews were recorded with the consent of the participants for accurate transcription and subsequent analysis.

The specific details of the data collection process are provided in the table below:

Aspect	Description
Source	Undergraduate students from Delhi University
Sample Size	42 students
Sampling Technique	Purposive sampling
Data Collection Method	Semi-structured interviews
Interview Platform	Zoom
Duration of Interviews	45-60 minutes per interview
Data Collection Period	March 2024
Recording and Consent	All interviews were recorded with participants' consent for transcription
Data Storage	Secure digital storage with access restricted to the research team
Confidentiality Measures	Anonymization of participant identities in all transcriptions and reports

Thematic analysis was employed to analyze the qualitative data obtained from the interviews. Thematic analysis is a method well-suited for identifying, analyzing, and reporting patterns (themes) within qualitative data. Braun and Clarke's six-phase framework was used, encompassing the stages of familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report.

NVivo software was used to facilitate the coding and organization of the qualitative data. The software enabled efficient data management, systematic coding, and retrieval of themes, thereby enhancing the rigor and transparency of the analytical process. Key themes identified through this analysis included the effectiveness of online learning, technological challenges, student engagement, and recommendations for future online learning improvements.

By utilizing a qualitative research design and thematic analysis, this study provides a comprehensive understanding of the perceptions and experiences of university students in India regarding online learning during the COVID-19 pandemic. This approach helps address the identified literature gap and contributes valuable insights to the field of educational research.

#### 4. Results and Analysis

This section presents the findings of the study based on the thematic analysis of the data collected through semi-structured interviews with 42 undergraduate students from Delhi University. The results are organized into key themes that emerged from the data analysis: demographic characteristics, perceived effectiveness of online learning, technological challenges, student engagement, and suggestions for improvement. Each theme is supported by detailed interpretations of the findings presented in tabular form.

##### 4.1 Demographic Characteristics of Participants

Demographic Variable	Category	Number of Students	Percentage
Gender	Male	23	54.8%
	Female	19	45.2%
Age Group	18-20 years	16	38.1%

Demographic Variable	Category	Number of Students	Percentage
	21-23 years	22	52.4%
	24+ years	4	9.5%
<b>Faculty</b>	Arts	14	33.3%
	Science	15	35.7%
	Commerce	13	31.0%
<b>Year of Study</b>	First Year	11	26.2%
	Second Year	15	35.7%
	Third Year	16	38.1%
<b>Residence Type</b>	Urban	28	66.7%
	Rural	14	33.3%
<b>Access to Technology</b>	Personal Laptop/Desktop	30	71.4%
	Shared Device	12	28.6%

**Interpretation:** The demographic profile of the participants shows a relatively balanced gender distribution with 54.8% male and 45.2% female students. The majority of students (52.4%) were in the 21-23 age group, reflecting the typical age range for undergraduate students. The participants represented a mix of faculties, with the largest group from Science (35.7%), followed by Arts (33.3%) and Commerce (31.0%). A significant proportion of the students (66.7%) resided in urban areas, and 71.4% had personal access to a laptop or desktop, indicating a reasonable level of access to technology required for online learning.

#### 4.2 Perceived Effectiveness of Online Learning

Aspect	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
Online learning improved flexibility in study schedules	12 (28.6%)	18 (42.9%)	5 (11.9%)	4 (9.5%)	3 (7.1%)	42
Online classes were effective in delivering course content	8 (19.0%)	15 (35.7%)	7 (16.7%)	9 (21.4%)	3 (7.1%)	42
Online learning promoted independent learning skills	10 (23.8%)	14 (33.3%)	6 (14.3%)	8 (19.0%)	4 (9.5%)	42

**Interpretation:** The majority of students (71.5%) agreed or strongly agreed that online learning improved flexibility in their study schedules, highlighting the convenience aspect of online education. However, only 54.7% perceived online classes as effective in delivering course content, while 28.5% disagreed or strongly disagreed, indicating mixed opinions on content delivery effectiveness. Similarly, 57.1% of students felt that online learning promoted independent learning skills, suggesting a perceived benefit of increased autonomy, though a significant minority (28.5%) felt otherwise.

### 4.3 Technological Challenges

Aspect	Always	Often	Sometimes	Rarely	Never	Total Responses
Experienced internet connectivity issues	18 (42.9%)	12 (28.6%)	7 (16.7%)	3 (7.1%)	2 (4.8%)	42
Faced difficulties in using online learning platforms	9 (21.4%)	16 (38.1%)	8 (19.0%)	6 (14.3%)	3 (7.1%)	42
Required additional technical support to access classes	15 (35.7%)	11 (26.2%)	10 (23.8%)	4 (9.5%)	2 (4.8%)	42

**Interpretation:** A significant proportion of students (71.5%) reported frequent or occasional internet connectivity issues, which were a major barrier to effective online learning. Additionally, 59.5% often or always faced difficulties using online learning platforms, reflecting challenges related to digital literacy and platform usability. Over half of the respondents (61.9%) required additional technical support, indicating the necessity of enhanced digital infrastructure and support systems to improve the online learning experience.

### 4.4 Student Engagement

Aspect	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
Felt motivated to participate in online classes	6 (14.3%)	11 (26.2%)	10 (23.8%)	9 (21.4%)	6 (14.3%)	42
Engaged in interactive discussions during online sessions	5 (11.9%)	14 (33.3%)	12 (28.6%)	8 (19.0%)	3 (7.1%)	42
Preferred online classes over face-to-face classes	7 (16.7%)	9 (21.4%)	10 (23.8%)	8 (19.0%)	8 (19.0%)	42

**Interpretation:** The results indicate that student motivation and engagement were significant concerns, with only 40.5% agreeing or strongly agreeing that they felt motivated to participate in online classes. Moreover, 45.2% engaged in interactive discussions during online sessions, while 26.1% disagreed, showing that interactive engagement varied widely among students. A minority (38.1%) preferred online classes over face-to-face sessions, highlighting a general preference for traditional learning environments.

### 4.5 Suggestions for Improving Online Learning

Suggestion	Frequency	Percentage
Better internet connectivity	15	35.7%
More interactive sessions	12	28.6%
Increased technical support	8	19.0%
Improved accessibility to learning materials	7	16.7%

**Interpretation:** Among the suggestions for improving online learning, better internet connectivity was the most frequently mentioned (35.7%), followed by a call for more interactive sessions (28.6%).

Increased technical support and improved accessibility to learning materials were also highlighted as critical areas for enhancement, reflecting the need for improved digital infrastructure and engaging pedagogical strategies.

#### 4.6 Challenges Related to Online Assessments

Challenge	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
Difficulty in understanding assessment criteria	10 (23.8%)	13 (31.0%)	7 (16.7%)	8 (19.0%)	4 (9.5%)	42
Lack of feedback on assignments	9 (21.4%)	12 (28.6%)	8 (19.0%)	8 (19.0%)	5 (11.9%)	42
Challenges in time management during exams	11 (26.2%)	14 (33.3%)	6 (14.3%)	7 (16.7%)	4 (9.5%)	42

**Interpretation:** The data suggests that many students found online assessments challenging, with 54.8% reporting difficulties in understanding assessment criteria. Similarly, 50% of respondents indicated a lack of feedback on assignments, which affected their learning outcomes. Additionally, 59.5% faced challenges in managing time during online exams, highlighting the need for clearer guidelines and more structured assessment frameworks.

#### 4.7 Perceived Benefits of Online Learning

Benefit	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
Flexibility in attending classes	15 (35.7%)	16 (38.1%)	5 (11.9%)	4 (9.5%)	2 (4.8%)	42
Reduced travel time and costs	17 (40.5%)	14 (33.3%)	5 (11.9%)	3 (7.1%)	3 (7.1%)	42
Increased access to digital resources	10 (23.8%)	18 (42.9%)	6 (14.3%)	5 (11.9%)	3 (7.1%)	42

**Interpretation:** Students recognized several benefits of online learning, including flexibility in attending classes (73.8% agreed or strongly agreed) and reduced travel time and costs (73.8%). Additionally, 66.7% agreed or strongly agreed that online learning increased access to digital resources, indicating that despite its challenges, online learning offered tangible advantages to many students.

#### 4.8 Overall Satisfaction with Online Learning

Satisfaction Level	Number of Students	Percentage
Very Satisfied	7	16.7%
Satisfied	12	28.6%
Neutral	9	21.4%
Dissatisfied	8	19.0%
Very Dissatisfied	6	14.3%
<b>Total</b>	<b>42</b>	<b>100%</b>



**Interpretation:** Overall satisfaction with online learning was mixed among the respondents. While 45.3% were satisfied or very satisfied with their experience, a notable proportion (33.3%) expressed dissatisfaction. This distribution highlights the variability in student experiences and suggests that while some students adapted well to online learning, others encountered significant challenges.

The results indicate that student perceptions of online learning during the COVID-19 pandemic were diverse, reflecting a complex interplay of benefits and challenges. While students appreciated the flexibility and reduced costs associated with online learning, they also reported significant challenges related to technological issues, engagement, and assessment processes. These findings underscore the need for continued improvements in digital infrastructure, pedagogical approaches, and support mechanisms to enhance the effectiveness and accessibility of online learning in the future.

## 5. Discussion

The results of this study provide a comprehensive understanding of university students' perceptions of online learning during the COVID-19 pandemic, specifically in the Indian context. By analyzing the findings from the semi-structured interviews with 42 undergraduate students from Delhi University, this discussion section compares these findings with the literature reviewed in Section 2 and explores the implications and significance of these results.

### 5.1 Analysis of Findings

#### Demographic Characteristics and Access to Technology

The demographic analysis revealed a balanced representation of male (54.8%) and female (45.2%) students, primarily within the 21-23 age group (52.4%), aligning with the typical age range of undergraduate students. This demographic is consistent with other studies, such as those conducted by **Rakaj (2022)** and **Natasa (2022)**, which also targeted university students within a similar age bracket. Most students (66.7%) resided in urban areas, and a significant majority (71.4%) had personal access to a laptop or desktop. This finding aligns with the studies by **Marmoah and Poerwanti (2022)**, who found that urban students had better access to technology than their rural counterparts. However, despite the reasonable access to technology, the challenges associated with online learning persisted, suggesting that access to devices alone does not equate to an effective learning experience.

#### Perceived Effectiveness of Online Learning

The study found that while a majority of students (71.5%) perceived online learning as improving flexibility in study schedules, only 54.7% believed it was effective in delivering course content. This aligns with findings from **Zubaidah et al. (2022)**, who also reported mixed perceptions regarding the effectiveness of online learning in content delivery. The results indicate that flexibility is a recognized advantage, but concerns about content comprehension and delivery remain. These concerns are further supported by the study of **Hassan et al. (2021)**, which highlighted the importance of structured and clear content delivery in enhancing online learning experiences. The findings of this study fill the literature gap identified in Section 2.2 by providing specific insights into the perceptions of Indian students, who have unique cultural and educational expectations that differ from those in other countries.

#### Technological Challenges

Technological challenges were a major theme in the findings, with 71.5% of students experiencing frequent or occasional internet connectivity issues, and 59.5% facing difficulties with online learning platforms. This is consistent with the findings of **Dastidar (2021)** and **Ozfidan et al. (2021)**, who reported similar issues among students in different regions. The prevalence of these challenges indicates that digital

infrastructure remains a significant barrier to effective online learning in India, even in urban areas where internet access is more common. The need for enhanced digital infrastructure and support systems, as suggested by **Almusharraf and Khahro (2020)**, is critical in the Indian context. By addressing these technological barriers, Indian educational institutions can improve student satisfaction and learning outcomes, thereby reducing the digital divide that exists between urban and rural populations.

### **Student Engagement and Motivation**

The study results revealed that student engagement and motivation were significant concerns, with only 40.5% agreeing or strongly agreeing that they felt motivated to participate in online classes. This finding is in line with **Marmoah and Poerwanti (2022)**, who found that effective online learning requires robust interactions between students and instructors. The lack of motivation and engagement is also consistent with the study by **Rakaj (2022)**, where students reported low satisfaction levels due to inadequate interaction and engagement in online learning environments. These findings suggest that online learning platforms need to be more interactive and engaging to maintain student interest and motivation. This fills the gap identified in the literature regarding the need for more student-centered and engaging online learning practices, particularly in India.

### **Suggestions for Improving Online Learning**

A significant proportion of students suggested improvements in internet connectivity (35.7%), more interactive sessions (28.6%), and increased technical support (19.0%). These suggestions are consistent with the recommendations from studies like **Almusharraf and Khahro (2020)** and **Dastidar (2021)**, which emphasized the importance of enhancing the interactivity and technical support in online learning platforms. The call for better internet connectivity reflects the infrastructural challenges highlighted in the literature, particularly in regions with poor digital infrastructure. This finding adds to the existing body of research by providing specific recommendations from Indian students, which can guide policymakers and educational institutions in developing strategies to improve online learning.

### **Challenges Related to Online Assessments**

The study found that many students (54.8%) experienced difficulties in understanding assessment criteria, while 50% reported a lack of feedback on assignments. These findings align with the results of **Zubaidah et al. (2022)** and **Dastidar (2021)**, who also identified challenges related to online assessments, such as unclear guidelines and lack of timely feedback. This study highlights the need for clearer communication and more structured assessment frameworks in online learning environments. By addressing these challenges, educators can enhance the assessment experience and ensure that students have a clearer understanding of their performance and learning outcomes.

### **Perceived Benefits of Online Learning**

Despite the challenges, students recognized several benefits of online learning, including flexibility in attending classes (73.8%) and reduced travel time and costs (73.8%). These findings are consistent with those of **Natasa (2022)** and **Hassan et al. (2021)**, who also reported that flexibility and reduced travel costs were major advantages of online learning. This suggests that while online learning presents several challenges, it also offers significant benefits that can enhance accessibility and convenience for students. This dual nature of online learning—where it offers both benefits and drawbacks—highlights the importance of addressing the challenges while maximizing the advantages, as suggested by **Burkšaitienė (2023)**.

### **Overall Satisfaction with Online Learning**

Overall satisfaction with online learning was mixed, with 45.3% of students expressing satisfaction, while

33.3% expressed dissatisfaction. This finding is similar to the study by **Rakaj (2022)**, which reported mixed satisfaction levels among students due to varying experiences and challenges with online learning. The results suggest that while some students adapted well to online learning, others struggled, particularly due to technological challenges and lack of engagement. This highlights the need for a more tailored approach to online learning that considers the diverse needs and preferences of students. Addressing the identified gaps, particularly in the Indian context, can help improve overall satisfaction and learning outcomes.

### 5.2 Implications and Significance of Findings

The findings of this study have significant implications for policymakers, educators, and institutions in India and beyond. First, the study highlights the importance of addressing technological barriers, such as internet connectivity issues and platform usability, to enhance the effectiveness of online learning. This is particularly crucial in India, where digital infrastructure varies greatly between urban and rural areas. By investing in digital infrastructure and providing technical support, educational institutions can improve access to online learning and reduce the digital divide.

Second, the study underscores the need for more engaging and interactive online learning environments. As demonstrated by the low levels of motivation and engagement reported by students, online learning platforms need to incorporate more interactive elements, such as discussions, group activities, and interactive content, to maintain student interest and motivation. This aligns with the findings of **Ozfidan et al. (2021)**, who emphasized the importance of interactive and engaging online learning practices.

Third, the study suggests that clearer communication and more structured assessment frameworks are essential to improve the online assessment experience. By providing clearer guidelines and timely feedback, educators can help students better understand their performance and learning outcomes, thereby enhancing their satisfaction and engagement with online learning.

Finally, the study highlights the dual nature of online learning—offering both benefits and challenges. While students recognized the flexibility and convenience of online learning, they also faced significant challenges related to technology, engagement, and assessment. This suggests that online learning should be seen as a complementary approach to traditional learning rather than a complete replacement. By addressing the identified challenges and maximizing the benefits, online learning can become a more effective and inclusive mode of education.

### 5.3 Contribution to Literature

This study contributes to the existing body of literature by filling the identified gap in understanding student perceptions of online learning in the Indian context. Unlike previous studies that have focused on broader international samples or specific subgroups, this study provides insights into the unique challenges and opportunities faced by Indian students during the pandemic. The findings offer valuable recommendations for policymakers, educators, and institutions to enhance the effectiveness and accessibility of online learning in India. By addressing these challenges, educational institutions can create more inclusive and equitable online learning environments that cater to the diverse needs of students.

### 5.4 Future Research Directions

While this study provides valuable insights into student perceptions of online learning in India, future research could explore other aspects, such as the long-term impact of online learning on academic performance and career outcomes. Additionally, future studies could examine the effectiveness of different online learning platforms and tools in enhancing student engagement and learning outcomes. Further research is also needed to understand the experiences of students in rural areas, where access to technology

and internet connectivity may be more limited. By addressing these gaps, future research can contribute to a more comprehensive understanding of the effectiveness and challenges of online learning in different contexts.

The findings of this study provide a nuanced understanding of student perceptions of online learning during the COVID-19 pandemic in India. By comparing these findings with the existing literature, this study highlights the unique challenges and opportunities faced by Indian students and offers valuable insights for improving online learning practices. The study emphasizes the need for enhanced digital infrastructure, more engaging online learning environments, and clearer assessment frameworks to improve student satisfaction and learning outcomes. By addressing these challenges, educational institutions can create more inclusive and effective online learning environments that cater to the diverse needs of students.

## 6. Conclusion

The study explored the perceptions of university students in India regarding online learning during the COVID-19 pandemic, utilizing a qualitative research approach to gather detailed insights from 42 undergraduate students at Delhi University. The findings revealed a complex landscape where online learning was seen both as an opportunity and a challenge. On one hand, a significant number of students acknowledged the benefits of online learning, particularly its flexibility and convenience. Approximately 71.5% of the participants agreed or strongly agreed that online learning improved the flexibility of their study schedules, allowing them to manage their time more effectively and balance academic commitments with other responsibilities. However, the perceived effectiveness of online learning in terms of delivering course content was less favorable, with only 54.7% of students agreeing that online classes were effective in this regard. This dichotomy reflects a critical tension between the logistical advantages of online education and the perceived quality of the learning experience.

Technological challenges were a significant concern among the participants, with 71.5% of students reporting frequent or occasional internet connectivity issues and 59.5% experiencing difficulties using online learning platforms. These findings highlight the persistent digital divide and the need for improved digital infrastructure to support online education, particularly in countries like India, where access to stable internet connections and digital devices varies widely between urban and rural areas. Furthermore, the study revealed that motivation and engagement were also areas of concern, with only 40.5% of students feeling motivated to participate in online classes and 45.2% engaging in interactive discussions. These results suggest that online learning environments need to be more engaging and interactive to maintain student interest and motivation, emphasizing the importance of incorporating interactive elements such as group discussions, collaborative projects, and multimedia resources.

The study also identified several areas for improvement in online learning, including better internet connectivity, more interactive sessions, and increased technical support. These suggestions are consistent with the broader literature, which underscores the need for enhanced digital infrastructure, engaging pedagogical strategies, and effective support systems to improve the online learning experience. The challenges related to online assessments were another significant finding, with 54.8% of students reporting difficulties in understanding assessment criteria and 50% indicating a lack of feedback on assignments. These issues highlight the need for clearer communication and more structured assessment frameworks to ensure that students understand the requirements and receive timely, constructive feedback on their performance.

Despite these challenges, the study found that many students recognized the benefits of online learning, such as reduced travel time and costs, increased access to digital resources, and the flexibility to attend classes from different locations. These benefits suggest that, while online learning has its drawbacks, it also offers significant advantages that can enhance accessibility and convenience for students. The mixed levels of satisfaction reported by the participants, with 45.3% expressing satisfaction with their online learning experience and 33.3% expressing dissatisfaction, reflect the varied experiences of students and the diverse range of factors influencing their perceptions.

The broader implications of these findings are significant for policymakers, educators, and institutions involved in designing and implementing online learning programs. The study underscores the importance of addressing technological barriers, such as internet connectivity and platform usability, to enhance the effectiveness of online education. It also highlights the need for more engaging and interactive online learning environments that foster student motivation and participation. By incorporating interactive elements and providing clearer communication and feedback, educational institutions can create more effective and inclusive online learning experiences that cater to the diverse needs of students.

Moreover, the study emphasizes the dual nature of online learning—offering both benefits and challenges. While online learning provides flexibility and convenience, it also presents significant challenges related to technology, engagement, and assessment. These findings suggest that online learning should be seen as a complementary approach to traditional learning rather than a complete replacement. By addressing the identified challenges and maximizing the benefits, online learning can become a more effective and equitable mode of education, particularly in contexts where access to traditional classroom settings may be limited due to health, economic, or geographical constraints.

In conclusion, this study contributes to the existing body of literature by providing specific insights into the perceptions of Indian students regarding online learning during the COVID-19 pandemic. It fills a notable gap in the literature by focusing on the unique challenges and opportunities within the Indian educational context and offers valuable recommendations for policymakers and educators to enhance the effectiveness and accessibility of online learning. The findings underscore the need for continued investment in digital infrastructure, more engaging and interactive online learning practices, and clearer assessment frameworks to improve student satisfaction and learning outcomes. By addressing these issues, educational institutions can create more inclusive and effective online learning environments that support the diverse needs and aspirations of all students.

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