

A Comparative Study of Students' Perception and Challenges of Online Education at Government and Private Secondary Schools

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ABSTRACT:

This study investigates the perceptions and challenges associated with online education among secondary school students, emphasizing a comparative analysis between government and private institutions. A total of 300 students split between government and private schools in Patiala district, Punjab, took part in the study by filling out a self-structured questionnaire. The questionnaire assessed five key dimensions: Technical Challenges, Health and Psychological Issues, Support Services and Communication, Cost-Related Issues, and the Quality of Teaching and Learning. The data was examined using descriptive statistics and independent samples t-tests. While no significant differences were found in other areas, government school students reported far more trouble with support services and their overall experience. These results show that online learning problems are common, but they also show that there are big differences based on the type of school. The study calls for specific policy actions to eliminate these institutional disparities and make digital education fairer in all types of schools.

Keywords: Online Learning, Student Perceptions, Digital Education, Secondary Schools, Institutional Disparities, Educational Equity.

INTRODUCTION

The pedagogical landscape especially at the secondary level, has changed because of the incorporation of digital education into traditional schooling. Although the temporary closure of physical schools in the early 2020s accelerated the shift to online education, it has since developed into a consistent practice that is still changing how education is delivered. This change in India brought to light several pedagogical and structural issues that still exist after the initial emergency has passed. Understanding how students experience online learning in various institutional contexts is crucial as it becomes

more integrated into the academic ecosystem. One of the biggest educational systems in the world, India's system consists of a variety of establishments, from government schools with inadequate funding to private schools with ample resources. This discrepancy has exacerbated the digital divide, where students' online learning experiences are frequently influenced by the type of school they attend. Students attending government schools, especially those in rural and semi-urban areas, encounter significant obstacles like poor connectivity, limited access to digital devices, and insufficient teacher preparation (Dadhe & Kuthe, 2021; Mahanta & Sharma,

2022). On the other hand, private schools are thought to provide a more structured online learning environment with better technology, specialised support, and qualified teachers (Gul et al., 2023). The popularity of online education has spurred a lot of scholarly research. Research has looked at several topics, such as student satisfaction (Garcia et al., 2018), pedagogical innovation (Kim, 2020), and platform accessibility (Makruf et al., 2022). Other studies have looked at students' mental health and cognitive engagement in digital settings, particularly when there is little opportunity for direct teacher-student interaction (Watson et al., 2023; Tzankova et al., 2023). In higher education, the efficacy of e-learning platforms like Moodle and Google Classroom has been demonstrated (Sathyan & Prasad, 2021; Syakur et al., 2020). However, little is known about their relevance and influence at the school level, especially for teenagers going through transitional periods. Additionally, the majority of the literature currently in publication tends to concentrate on broad trends in online learning or the experiences of college and university students, leaving a knowledge gap regarding how school children, particularly those in secondary school, view online learning (Mishra et al., 2020; Bhat et al., 2021). A comparative framework that assesses institutional differences between public and private schools is rarely used in studies. Given that institutional type can affect student engagement, instruction quality, and access to support services, this is a significant omission (Gupta & Sharma, 2020; Maatuk et al., 2021).

The current research aims to exhibit the perception and challenges of students regarding online education to identify future lessons to minimize thin points concerning the same secondary level private and government schools. The inquiry is structured around five critical dimensions: technical challenges, health and psychological impacts, support services and communication, cost-related barriers, and quality of teaching and learning. By employing a comparative approach, this research seeks to illuminate the shared difficulties as well as the

institutional disparities that shape students' digital learning experiences. The findings are intended to inform more equitable educational policies and practices in an increasingly technology-driven academic landscape. The objectives of the study are:

- (1) To examine the perceptions and challenges of students regarding online education at the secondary school level.
- (2) To compare the perceptions and challenges faced by government and private school students.
- (3) To determine if there exists any significant difference between the two groups across key dimensions: technical challenges, health and psychological issues, support services, cost-related issues, and quality of teaching and learning.

LITERATURE REVIEW

The emergence of the COVID-19 pandemic profoundly reshaped the global educational landscape, forcing institutions at every level to adopt online teaching as an emergency response (Dhawan, 2020; Gupta & Sharma, 2020; Kim, 2020). This sudden change sparked a surge of curiosity in the academic world, especially concerning how students experienced and dealt with this unforeseen change. However, a significant body of this work has remained concentrated in the realm of higher education, thereby neglecting the more nuanced, often fragile experiences of secondary school students, particularly when comparing government and private school contexts (Mahanta & Sharma, 2022; Gul et al., 2023; Dadhe & Kuthe, 2021). Students' perceptions of online learning have varied widely, shaped by technological access, pedagogical quality, and emotional well-being (Watson et al., 2023; Maatuk et al., 2021; Mishra et al., 2020). While many appreciated the flexibility and reduced commuting time that online platforms offered (Syakur et al., 2020; Garcia et al., 2018), others reported significant disengagement, a loss of peer interaction, and dissatisfaction with instructional quality (Zboun

& Farrah, 2021; Jubran et al., 2023; Tzankova et al., 2023). Cramarencu et al. (2023), in their systematic review of 154 studies conducted between March 2020 and September 2022, documented a wide range of attitudes—positive, negative, and ambivalent—further demonstrating that student experiences were highly context-specific and influenced by a complex interplay of variables. Nevertheless, the focus of this examination was mainly on those attending universities, leaving out younger students in educational environments, specifically those from several types of learning centers such as public and independent schools.

Technological access remains one of the most critical and recurring challenges. Dadhe and Kuthe (2021) found that students in rural Indian colleges often lacked stable internet access and functional devices issues that became more pronounced in lower-income, government-run schools. Similarly, Gul et al. (2023) revealed that secondary school students in Balochistan faced frequent power outages, low bandwidth, and untrained teachers challenges that severely hampered online engagement. Mahanta and Sharma (2022) reported similar inequities in Assam, where digital divides disproportionately impacted government school students, reinforcing the infrastructural gaps between private and public institutions (Korkmaz & Toraman, 2020; Mishra et al., 2020). The issue of institutional preparedness, particularly teacher training, is another factor influencing student perception. Jubran et al. (2023) found that teachers especially in public institutions struggled with delivering mathematics in English due to both language and technological barriers. This finding is echoed by Putri and Sari (2021), who noted that inadequate teacher preparation and lack of clear instructional strategies often led to fragmented and confusing learning experiences. Korkmaz and Toraman (2020), in a study of over 1,000 educators, highlighted widespread unfamiliarity with digital pedagogies, especially in public sector schools where professional development opportunities were

scarce. Consequently, student dissatisfaction often stemmed from instructors' inability to deliver engaging and organized content (Juraboyev, 2021; Makruf et al., 2022; Garcia et al., 2018). From a psychological standpoint, the consequences of prolonged online learning were equally concerning. Mahanta and Sharma (2022) revealed that secondary school students experienced heightened levels of anxiety, screen fatigue, and lack of motivation, especially in government institutions where counselling and mental health support were largely absent. Mishra et al. (2020) also found that students across multiple departments felt isolated and disengaged, reinforcing the emotional toll of online learning without peer and teacher connection. Dampson et al. (2020) and Kim (2020) further argued that emotional well-being is intricately tied to digital preparedness and support services, both of which were inconsistently available across different school types. Issues related to instructional quality also surfaced in multiple studies. Makruf et al. (2022), while studying Moodle-based virtual learning in Indonesia, discovered that although institutions excelled at planning online classes, the execution and evaluation stages lacked depth and feedback mechanisms. This shortcoming was similarly noted by Gul et al. (2023) and Dadhe and Kuthe (2021), particularly in underfunded government schools where infrastructure was weak and monitoring was minimal. Paul and Jefferson (2019) compared learning outcomes across online and traditional teaching and concluded that while both could be effective, outcomes depend heavily on instructional quality—something less guaranteed in government institutions (Sathyan & Prasad, 2021; Maatuk et al., 2021). Moreover, many studies in this field—despite their valuable insights—are limited in scope. For example, Tzankova et al. (2023) conducted an exploratory study on just 64 Italian secondary students during the first lockdown, while Garcia et al. (2018) restricted their quasi-experimental study to flipped learning in virtual classrooms. Similarly, Palvia et al. (2018) took a macro view of online business education in five global regions but did not delve into student-level

perceptions or school-type comparisons. These sampling limitations and lack of school-level focus make it difficult to generalize findings to the secondary school population in India or assess meaningful differences between private and government institutions (Dhawan, 2020; Syakur et al., 2020).

Furthermore, while studies like those of Mishra et al. (2020), Mahanta and Sharma (2022), and Gul et al. (2023) consistently document issues of digital access, psychological distress, and pedagogical inefficiencies, few attempts to disaggregate these findings by school type. This discrepancy is especially significant in India, where schools run by the government and private entities vary substantially in areas such as monetary resources, educator credentials, level of parental engagement the quality of facilities and how well policies are adapted to meet needs. Online education has emerged as a significant mode of learning, especially in recent years, yet several limitations remain in the existing body of research. A large portion of previous studies primarily focused on students enrolled in higher education, often neglecting those at the secondary school level. However, the experiences, challenges, and learning environments of secondary students are distinct and deserve separate, focused exploration (Dhawan, 2020). Additionally, many investigations have emphasized the features and advantages of specific online learning platforms such as Byju's, Canva, and other learning management systems without paying sufficient attention to the broader academic, psychological, and logistical impacts of online education on students (Dadhe & Kuthe, 2021). Another significant shortcoming in earlier research is the frequent use of small, institution-specific samples, which makes it difficult to generalize the findings to a wider population of learners (Kumar & Chand, 2022). Most importantly, there has been very limited effort to conduct comparative studies that examine how online education is perceived and experienced by students in different types of schools specifically government versus private

institutions. Without such comparisons, it becomes challenging to understand how factors like school infrastructure, access to technology, and socio-economic background influence students' engagement with online learning. This study seeks to address these gaps by focusing specifically on secondary school students, using a broader and more balanced sample, and offering a comparative perspective that considers the diverse realities of students from both government and private schools.

MATERIALS AND METHODS

This study employed a quantitative, comparative research design to investigate the perceptions and challenges faced by secondary school students in the context of online education. The present paper focuses exclusively on the quantitative findings derived from student responses. The intention was to identify and compare how students from government and private schools experience and interpret various aspects of online learning.

Participants/Sample

The study targeted students enrolled in secondary schools within the Patiala district of Punjab, India. The purposive sampling method will be used to select twenty schools (10 government and 10 private schools). A total of 300 students constituted the final sample, equally divided between government ($n = 150$) and private ($n = 150$) schools. This stratification ensured a fair comparison between the two institutional categories. A self-designed structured questionnaire was developed to collect data from students.

The tool aimed to capture student perceptions and challenges across five core dimensions of online education:

- **Technical Challenges (TC)** such as internet connectivity, device access, and software issues
- **Health and Psychological Issues (HPI)** include stress, screen fatigue, and lack of motivation.

- **Support Services and Communication (SSC)** encompasses teacher guidance, peer interaction, and administrative support.
- **Cost-Related Issues (CRI)** including expenses for data, devices, and learning materials.
- **Quality of Teaching and Learning (QTL)** perceived effectiveness, clarity of instruction, and student engagement. The questionnaire was validated through a pilot study involving a smaller student sample. Feedback from this preliminary phase helped refine the wording, structure, and relevance of the items. The final instrument demonstrated acceptable levels of validity and reliability, ensuring its appropriateness for the target population.

Data Analysis

Data was collected in a structured format, with responses compiled and processed using SPSS (Statistical Package for the Social Sciences). The analysis was conducted in two phases: Descriptive Statistics Mean, standard deviation, skewness, and kurtosis were calculated to understand the distribution and central tendencies of the data and Inferential Statistics Independent samples t-tests were performed to assess whether statistically significant differences existed between government and private school students across the five dimensions and overall perception scores. This approach provided both a general overview and comparative insights into

students' online learning experiences based on school type.

RESULTS

The quantitative data collected from 300 secondary school students (150 from government schools and 150 from private schools) was analysed using descriptive and inferential statistical methods. The descriptive statistics provided insights into the central tendencies and distribution of student responses across five key dimensions of online education, while independent samples t-tests were conducted to determine if there were statistically significant differences between the two school types.

Descriptive Statistics

This section presents the descriptive statistical analysis of students' perceptions and challenges regarding online education at the secondary school level. The data were analysed across different dimensions including Technical Challenges, Health and Psychological Issues, Support Services and Communication, Cost Related Issues, and Quality of Teaching and Learning. Statistical measures such as mean, median, mode, standard deviation, skewness, and kurtosis was used to examine the distribution and consistency of students' responses. The analysis offers a clear understanding of the major trends, variations, and overall experiences of students in the context of online learning.

Table1: Descriptive analysis of Perception and Challenges (Dimension wise and overall) of Students (Total sample, N= 300).

								Skewness		Kurtosis	
	N	Mean	Median	Mode	SD	Minimum	Maximum	Skewness	SE	Kurtosis	SE
TC-TOTAL	300	21.1	21	19	5.03	8	35	0.038	0.141	-0.318	0.281
HPI-TOTAL	300	21.2	21	24	4.91	9	33	0.0119	0.141	-0.466	0.281
SSC-TOTAL	300	24	24	23	5.99	9	40	0.0393	0.141	-0.234	0.281

CRI-TOTAL	300	12	12	12	3.04	4	20	0.0254	0.141	-0.205	0.281
QTL-TOTAL	300	26.8	27	26	6.55	11	45	-0.0487	0.141	-0.502	0.281
SCALE – STUDENTS	300	105.1	104	102	11.63	79	135	0.1974	0.141	-0.392	0.281

The overall above descriptive analysis highlights that even though cost-related concerns were relatively minimal, students reported challenges on the dimensions of technical readiness, health and psychological well-being, institutional support and communication, and especially the quality of teaching and learning. The mean scores for SSC and QTL show that inadequate support mechanisms and reduced pedagogical quality were the most critical issues shaping students' online learning experiences. Overall, the descriptive analysis reflects that students faced a multi-dimensional set of barriers which suggest that the effectiveness of online education and learning was a difficult task for students not only by technological limitations but also by psychosocial and pedagogical factors.

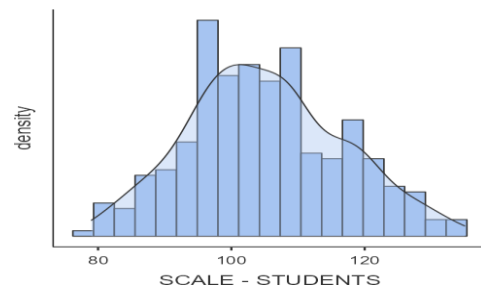


Figure 1. Histogram of Students' Overall Scale Scores (N = 300)

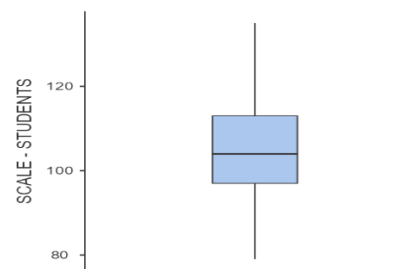


Figure 2. Boxplot of Students' Overall Scale Scores (N = 300)

Table 2: Descriptive analysis of Perception and Challenges (Dimension wise and overall) of students as per type of school.

									Skewness		Kurtosis	
	TYP E OF SCH OOL (1= Govt., 2= Privat e)	N	Me an	Med ian	Mo de	S D	Mini mum	Maxi mum	Skew ness	SE	Kurt osis	SE
TC- TOTA L	1	150	21.1	21	26	5.29	10	35	0.0887	0.198	-0.4326	0.394
	2	150	21.9	21	21	4.77	8	34	-0.0326	0.198	-0.1801	0.394
HPI- TOTA L	1	150	21.3	21	24	4.81	10	33	0.0571	0.198	-0.5185	0.394
	2	150	21	21.5	22	5.02	9	33	-0.0204	0.198	-0.4184	0.394
SSC- TOTA L	1	150	24.8	25	26	5.82	11	39	-0.0257	0.198	-0.3572	0.394
	2	150	23.1	23	23	6.07	9	40	0.1335	0.198	-0.0404	0.394
CRI- TOTA L	1	150	12.2	12	13	3.05	4	19	-0.2572	0.198	-0.0215	0.394
	2	150	11.9	12	11	3.04	5	20	0.3105	0.198	-0.2585	0.394
QTL- TOTA L	1	150	27	27	24	6.37	11	40	-0.2686	0.198	-0.3169	0.394
	2	150	26.6	26	20	6.73	13	45	0.1471	0.198	-0.5965	0.394

SCALE – STUD ENTS	1	1 5 0	106 .4	105. 5	102	12. 58	79	135	0.148 3	0.1 98	- 0.615 5	0.3 94
	2	1 5 0	103 .7	103	103	10. 46	80	127	0.117 7	0.1 98	- 0.253 2	0.3 94

So, it can be deduced that the above analysis shows that government school students (N = 150) reported relatively higher challenges in the domains of support services, cost-related issues, and quality of teaching and learning, on the other hand private school students (N= 150) showed slightly greater concerns in technical challenges. However, both student groups experienced health and psychological difficulties at comparable levels. The overall composite scale scores show that government school students perceived a somewhat higher level of difficulty with online education as compared to private school students. These results suggest that although during online education, all students i.e. Government school students or Private School students, faced systemic barriers i.e. the intensity of challenges varied slightly by school type, with government school students being more disadvantaged in terms of school/institutional support and quality of pedagogies used in online environment.

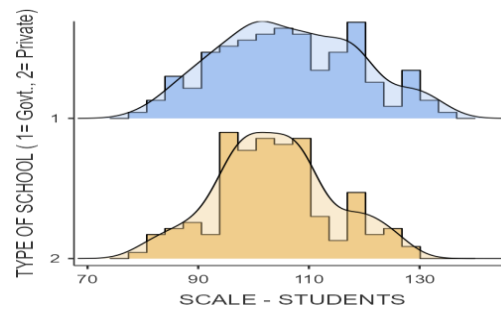


Figure 3. Histogram of students' Overall Scale Scores by Type of School (1 = Govt., n = 150; 2 = Private, n = 150)

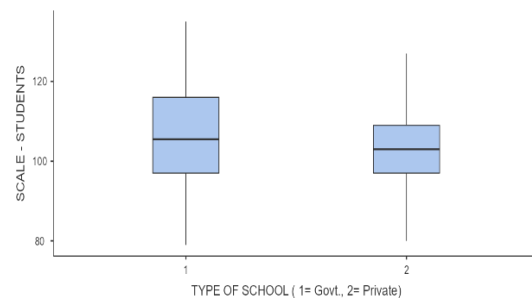


Figure 4. Boxplot of Students' Overall Scale Scores by Type of School (1 = Govt., n = 150; 2 = Private, n = 150)

Inferential Statistics and Hypothesis testing

H1 There is no significant difference between the perception & challenges of students in connection with online education at government and private secondary schools.

Table 3: Presents the descriptive statistics of students' perceptions of online education in government (N = 150) and private (N = 150) secondary schools.

	TYPE OF SCHOOL (1= Govt., 2= Private)	N	Mean	Median	SD	SE
TC-TOTAL	1	150	21.1	21	5.29	0.432
	2	150	21.9	21	4.77	0.389
HPI-TOTAL	1	150	21.3	21	4.81	0.393
	2	150	21	21.5	5.02	0.41
SSC-TOTAL	1	150	24.8	25	5.82	0.475
	2	150	23.1	23	6.07	0.496
CRI-TOTAL	1	150	12.2	12	3.05	0.249
	2	150	11.9	12	3.04	0.248
QTL-TOTAL	1	150	27	27	6.37	0.52
	2	150	26.6	26	6.73	0.55
SCALE – STUDENTS	1	150	106.4	105.5	12.58	1.027
	2	150	103.7	103	10.46	0.854

Overall Scale Score: The overall mean for government students (**106.40, SD = 12.58**) was slightly higher than that of private students

(**103.70, SD = 10.46**), pointing to greater overall challenges among government school students.

Table 4: T test results for each dimension and overall scale for Government and Private School Students.

Independent Samples T-Test					
	Statistic- T test	Df	P	Mean difference	SE difference
TC-TOTAL	0.0344	298	0.973	0.8	0.582
HPI-TOTAL	0.5051	298	0.614	0.2867	0.568
SSC-TOTAL	2.4175	298	0.016	1.66	0.687
CRI-TOTAL	0.7405	298	0.46	0.26	0.351
QTL-TOTAL	0.5638	298	0.573	0.4267	0.757
SCALE - STUDENTS	1.9913	298	0.047	2.66	1.336

So as the inferential analysis indicates that the null hypothesis is partially rejected because most dimensions (TC, HPI, CRI, QTL) showed no

significant differences between government and private students, significant differences were reported in Support Services and

Communication and in the overall scale score, with government school students reporting higher challenges in both cases.

DISCUSSION

The aim of this study was to examine the perceptions and challenges faced by students in government and private secondary schools with respect to online education. The findings revealed that although both groups shared similar challenges, there were notable differences in specific dimensions. The absence of significant differences in technical challenges (TC), health and psychological issues (HPI), cost-related issues (CRI), and quality of teaching and learning (QTL) suggests that students across both school types experienced these issues uniformly. These results align with the findings of Dadhe and Kuthe (2021), who reported that both government and private school students in rural and semi-urban areas faced similar issues of connectivity, device accessibility, and limited pedagogical engagement. Similarly, Bhat et al. (2021) emphasized that the transition to digital learning impacted all students regardless of school infrastructure. However, a significant difference was observed in the dimension of Support Services and Communication (SSC), with government school students reporting greater difficulties. This may stem from the varying levels of administrative support, teacher-student communication frequency, and structured digital learning environments typically found in private institutions. Gul et al., (2023) also reported similar findings in school systems in Pakistan, noting that private schools often had better support mechanisms and more responsive systems.

Furthermore, the overall perception score was significantly higher among government school students, indicating a greater cumulative burden. This supports the observations of Mahanta and Sharma (2022), who found that government school students faced more obstacles due to fewer digital tools, less institutional support, and limited teacher training. These findings underscore the need for targeted digital education policies and capacity-building initiatives to bridge

the gap between school types. There is a clear need for governments and educational bodies to focus on equity, access, and long-term integration of digital learning practices.

CONCLUSION

The present study aimed to examine and compare the perceptions and challenges encountered by secondary school students from government and private institutions in relation to online education. The analysis revealed that students from both school types experienced similar issues concerning technological limitations, psychological well-being, instructional quality, and financial constraints. However, significant disparities were observed in the areas of institutional support and communication. Government school students reported a greater degree of difficulty in accessing timely guidance, receiving feedback, and maintaining effective interaction with educators and school administrators. These findings reflect underlying structural inequalities and suggest that the quality of students' digital learning experiences continues to be shaped by institutional context. The outcomes underscore the importance of addressing these discrepancies to promote equity in educational opportunities and outcomes.

RECOMMENDATIONS

Considering the findings, several key recommendations are proposed. There is an urgent need to enhance digital infrastructure in government schools, ensuring reliable internet access, availability of devices, and functional online learning platforms. Additionally, structured professional development programs should be introduced to equip teachers with relevant digital pedagogical competencies. It is equally important to establish robust communication and feedback systems to support student engagement and learning continuity. Policymakers must focus on formulating inclusive strategies that aim to reduce the digital divide, particularly among economically disadvantaged learners. Furthermore, integrating blended learning models—combining the strengths of online and face-to-face modalities—

may offer a more flexible and holistic learning environment. As online education becomes an integral part of the contemporary educational framework, addressing institutional disparities is

essential for ensuring equitable, effective, and sustainable learning for all students, regardless of school type.

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