# The Benefits and Challenges of Flipped Learning: A Study on Students' Perception

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## Abstract

This study investigates students' perception regarding the advantages and challenges of flipped learning in senior secondary education. A popular pedagogical strategy flipped learning aims to foster active engagement and prioritize student-centered learning. The study examines the perceived benefits and challenges associated with flipped learning by using the data obtained from the sample of sixty students at Senior Secondary School in Delhi through both questionnaires and open-ended questions. The results indicate that students generally view flipped learning positively, highlighting benefits such as enhanced understanding, increased ownership of their educational journey, and improved interactions with peers and educators. Nonetheless, students also identified several challenges, including unreliable internet access, time limitations, and technological obstacles. This study emphasizes the need for addressing these issues to maximize the effectiveness of flipped learning and improve educational outcomes. The finding' recommendations to facilitate the successful adoption of flipped learning methodologies in senior secondary settings.

**Keywords**: Flipped Learning; NEP-2020; Challenges; Benefits; School

## INTRODUCTION:

The advancement of technology has significantly transformed education, particularly through the integration of educational technology. The innovations in technology have redefined traditional teaching approaches, enhancing accessibility and engagement for students. Tools such as interactive whiteboards, online learning platforms, and educational applications facilitate personal and interactive learning experiences, promoting deeper understanding and active participation in the learning process. Additionally, technology has made it easier for educators to track students' progress and provide tailored feedback, leading to better academic outcomes. This shift has engendered a pedagogical approach known as flipped learning, whereby traditional learning paradigms are inverted to prioritize active engagement and student-centered learning outside the confines of physical classrooms. Flipped learning is a teaching method that involves students learning outside class and engaging in hands-on activities during class, gaining recognition in education research and practice.

According to Aljaraideh (2019), flipped learning is a pedagogical approach in which teachers arrange material for students before class. This method enables both teachers and students to concentrate on developing higher-order cognitive skills during in-class interactions. Karabulut-Ilgu et al. (2018) propose an educational technique that entails a reversal of the conventional roles of homework and classroom activities. Instead of adopting a passive approach to acquiring knowledge during lectures, students actively interact with pre-class video materials on their own, thereby promoting active learning

within the classroom environment (Chuang et al., 2018). This innovative approach to teaching has been embraced by educators across various disciplines to enhance student engagement, promote deeper understanding of concepts, and foster critical thinking skills. However, like any instructional strategy, the implementation of flipped learning presents both challenges and benefits, which are crucial to examine from the perspective of the primary stakeholders: the students.

Significant research supports the various benefits of implementing the flipped learning approach. Instructional videos play a crucial role in this approach, allowing students to pause, rewind, and replay content as needed (Hsieh et al., 2017). Additionally, the integration of technology in education has been shown to positively influence multiple facets of students' learning experiences. Etemadfar et al. (2020) and Taşpolat et al. (2021) studies show that integrating technology not only improves academic performance but also increases students' self-efficacy. Moreover, Abdullah et al. (2021) demonstrated that incorporating technology into the learning environment can help reduce students' anxiety. Similarly, a study by Zarinfard et al. (2021) found that technology has the potential to mitigate students' apprehension, contributing to a more comfortable learning experience. However, several studies have highlighted the difficulties associated with flipped learning. Kim et al. (2014) emphasized the lack of substantial evidence supporting the claim that a particular approach improves students' grades. They identified several constraints and emphasized the necessity for additional research in areas, including technology integration, achievement scores, and the intricacies of pedagogical approaches. Chen et al. (2014) echoed this sentiment and emphasized the difficulties that students encountered when attempting to adjust to the novel flipped classroom model, especially part-timers who perceived the burden as excessive.

Milman (2012) illuminated the pervasive problem of inadequate video quality, highlighting its capacity to diminish students' engagement with pre-class learning. Enfield (2013) emphasized the significance of a visually enticing content design, stating that students might lose interest in unappealing video lectures. Additional difficulties that were recognised encompassed the lengthy process of reorganising courses (Jdaitawi, 2019; Schlairet et al., 2014), the inadequate self-regulated learning behaviours exhibited by students (Sun et al., 2017; Yoon et al., 2021), and their difficulties in understanding pre-class learning materials (Lai & Hwang, 2016; Wang et al., 2022). The students' discontent regarding their inability to promptly seek clarification during pre-class activities underscored the criticality of prompt assistance. Song et al. (2020) emphasizes the critical importance of efficient homework administration and technology integration in the flipped learning approach.

## NEED FOR THE STUDY:

The advancement of digital technology is reshaping education by offering students a wide array of online learning resources and opportunities. This quick adoption of collaborative tools has made it easier for new ways of teaching and learning to take hold at universities, encouraging group work and research in online settings (Ferrer & Martínez, 2021). Flipped learning offers several potential benefits for students. Firstly, it allows for personalized learning experiences that cater to individual learning techniques and preferences (Bergmann et al., 2011). Additionally, the provision of pre-recorded lectures and materials for home study and class time can facilitate collaborative activities, problem-solving, and critical thinking exercises, thereby fostering a deeper understanding and application of concepts (Strayer, 2007). Furthermore, flipped learning encourages active participation, as it empowers learners to take ownership of their education, which in turn enhances motivation and engagement (Tucker, 2012). Nouri (2016) conducted research that highlighted the role of flipped learning in promoting student engagement and thereby fostering active learning in higher education settings. Similarly, McLaughlin et al. (2013) highlighted the social dimension of flipped learning, noting that it provides students with opportunities to enhance their interactions with peers both in and out of the classroom. In a flipped classroom environment, learning extends beyond traditional classroom boundaries, allowing students to engage in meaningful discussions and collaborative activities with their friends.

Despite its benefits, flipped learning also presents challenges for both educators and students. One major concern is access to technology and internet connectivity, particularly in rural or underprivileged areas

(Abeysekera & Dawson, 2015; Agung & Surtikanti, 2020). Moreover, the effectiveness of flipped learning significantly depends on students' intrinsic motivation and self-discipline to engage with before-class materials, a factor that can vary among learners (Bishop & Verleger, 2013). Furthermore, transitioning from a traditional to a flipped classroom requires significant time and effort from educators to create high-quality instructional videos and redesign lesson plans, posing a barrier to widespread adoption (Tucker, 2012).

India's recent National Education Policy (NEP) emphasises the uses of technology and innovative pedagogical approaches in education to promote a holistic learning environment (Ministry of Education, 2020). Flipped learning aligns with these objectives by using technology to enable active learning and foster critical thinking skills among students. Moreover, NEP-2020 emphasises the need for flexibility and autonomy in curriculum design, encouraging educators to adopt diverse teaching methodologies to cater to individual student needs (Ministry of Education, 2020). Flipped Learning, with its emphasis on personalized learning experiences and student-centered instruction, aligns well with these principles. The aim of NEP-2020 is to provide students with a more comprehensive and effective educational experience, and the flexibility inherent in flipped learning can further enhance this context (*NEP 2020: The Journey so Far-Times of India*, 2022).

The students' perception of flipped learning is essential for teachers and researchers seeking to enhance its effectiveness and recognise obstacles to successful implementation. The existing studies primarily concentrate on student perceptions of the flipped classroom model at the university level; however, there is a notable gap in the investigation of perception within senior secondary education. The gap highlights the necessity for academic investigation into students' perceptions in grades 11 and 12 regarding the advantages and obstacles associated with flipped learning. These insights can guide instructional practices, curriculum development, and professional development initiatives to enhance educational quality. This study was carried out in two private schools in Delhi that have adopted the flipped learning model. A comprehensive examination of the challenges and benefits of flipped learning enables educators to refine their instructional strategies, address the varied needs of learners, and maximize the effectiveness of this innovative pedagogical approach.

## OBJECTIVES OF THE STUDY:

1. To study the students' perception regarding the benefits of flipped learning.

2. To study the students' perception regarding the challenges associated with flipped learning.

## RESEARCH METHODOLOGY:

### Sample

A convenience sampling technique was used in this study to select sixty senior secondary students from two schools in Delhi which are private.

### Questionnaire

The researchers created questionnaires by modifying statements from the studies of Bhagat et al. (2016) and Karabulut-Ilgu et al. (2018) in this study. The questionnaire comprised two sections. **Part I** assessed students' perception of flipped learning regarding the benefits and challenges through sixteen statements based on a 5-point Likert scale, from "strongly agree" to "strongly disagree," with eight questions aligned to each research objective. **Part II** consisted of two open-ended questions aimed at collecting qualitative insights on the advantages and difficulties associated with flipped learning.

## ANALYSIS AND INTERPRETATION:

Data collection was done using Google Forms, and the subsequent analysis was performed using Excel software to compute percentages, means, and standard deviations. The open-ended questions were analyzed using a coding process. The data analysis was subsequently presented in tables and graphs.

The study's findings are presented below:

**Objective 1: To study the students' perception regarding the benefits of flipped learning.**

The objective is to gain knowledge regarding the benefits of flipped learning.

**Table 1.** Benefits of Flipped Learning

| Items | SA | A | N | D | SD | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|
| | | (In Percentage) | | | | | |
| Flipped learning improves comprehension of the subject. | 25.0 | 51.7 | 20.0 | 1.7 | 1.7 | 3.97 | 0.82 |
| Flipped learning encourages me to take responsibility for my own learning to some extent. | 28.3 | 46.7 | 23.3 | 1.7 | 0.0 | 4.02 | 0.77 |
| Flipped learning makes me an active learner. | 28.3 | 38.3 | 28.3 | 3.3 | 1.7 | 3.88 | 0.92 |
| Flipped learning helps in the best utilisation of time in learning in/ outside of the classroom. | 23.3 | 38.3 | 33.3 | 3.3 | 1.7 | 3.78 | 0.90 |
| Flipped classrooms gives more opportunity to interact with peers and teachers. | 45.0 | 30.0 | 20.0 | 1.7 | 3.3 | 4.12 | 1.01 |
| Overall, my experience with flipped learning was positive. | 40.0 | 38.3 | 18.3 | 1.7 | 1.7 | 4.13 | 0.89 |
| Flipped learning to provide me with adequate feedback to gauge my progress. | 20.0 | 48.3 | 25.0 | 1.7 | 5.0 | 3.77 | 0.96 |
| Flipped learning provides more flexibility in exploring learning materials, asking questions, and sharing ideas. | 35.0 | 36.7 | 21.7 | 3.3 | 3.3 | 3.97 | 1.01 |
| | | | | | **Overall** | **3.95** | **0.92** |

Table 1 depicts survey responses to various aspects regarding the benefits of flipped learning, indicating the level of agreement or disagreement among participants. The mean and standard deviation (SD) provide insights into the central tendency and dispersion of responses, respectively. The mean scores indicate that flipped learning is perceived to have several benefits. For example, respondents agree that flipped learning improves their comprehension of the subject (mean = 3.97) which encourages them to take responsibility for their own learning (mean = 4.02) and makes them active learners (mean = 3.88). Flipped learning is also seen as providing opportunities for interaction with peers and teachers (mean = 4.12) and offering flexibility in exploring learning materials (mean = 3.97). Moreover, the respondents generally agree that flipped learning helps in the best utilisation of time (mean = 3.78) and provides flexibility (mean = 3.97), which shows the positive overall experience of the respondent (mean = 4.13). However, there is slightly less agreement regarding whether it provides adequate feedback for gauging progress (mean = 3.77). The standard deviations of all the assertions indicate variability in responses, suggesting that while the mean scores are generally positive, there are some differences in individual perceptions. This variability observed may be attributed to factors such as prior experience with flipped learning, teaching styles, or individual preferences. Overall, participants tended to agree with most statements regarding flipped learning, as evidenced by mean scores of 3.95 with SD 0.92. This indicates a generally positive perception of flipped learning among the respondents. However, the standard deviations suggest some variability in responses, indicating that opinions were not uniformly strong across all participants.

**Objective 2. To study the students' perception regarding the challenges associated with flipped learning.**

The objective is to acquire knowledge about the challenges of flipped learning, identify potential issues,

and provide solutions.

**Table 2.** Challenges of Flipped Learning

| Items | SA | A | N (In Percentage) | D | SD | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Instability and poor internet connection hampers Flipped learning | 21.7 | 38.3 | 30.0 | 8.3 | 1.7 | 3.70 | 0.96 |
| Flipped learning was expensive due to large amount of data required. | 11.7 | 21.7 | 51.7 | 13.3 | 1.7 | 3.28 | 0.90 |
| Flipped learning requires lot of time. | 11.7 | 26.7 | 40.0 | 13.3 | 8.3 | 3.20 | 1.09 |
| I cannot watch videos or discuss online because my phone was not compatible with the software platforms required to do so, such as Google Classroom or WhatsApp. | 16.7 | 13.3 | 38.3 | 23.3 | 8.3 | 3.07 | 1.18 |
| Flipped learning increases the workload because of pre- and post-class activities. | 16.7 | 35.0 | 35.0 | 8.3 | 5.0 | 3.50 | 1.03 |
| Flipped learning pre-class content uninteresting and irrelevant due to dislike lengthy video lessons or e-content | 18.3 | 31.7 | 33.3 | 11.7 | 5.0 | 3.47 | 1.08 |
| Difficulty grasping complicated concepts given in pre-class materials in flipped learning. | 13.3 | 25.0 | 51.7 | 6.7 | 3.3 | 3.38 | 0.92 |
| Noisy (disturbed) home environment to understand the pre-class material in Flipped Learning. | 18.3 | 28.3 | 30.0 | 18.3 | 5.0 | 3.37 | 1.13 |
| | | | | | **Overall** | **3.37** | **1.05** |

Table 2 presents survey responses regarding perceived challenges and limitations of flipped learning, with mean scores and standard deviations providing insights into the central tendency and dispersion of responses. The mean scores suggest that while some challenges are perceived to be significant, they are not universally agreed upon. The respondents generally agreed that instability and poor internet connection hamper flipped learning (mean = 3.70), which leads to increased workload due to pre- and post-class activities (mean = 3.50). Furthermore, the students generally agree regarding the irrelevance and uninterest level of pre-class content (mean = 3.47). However, respondents were neutral in the statement "I cannot watch videos or discuss online because my phone is not compatible with the software platforms required to do so, such as Google Classroom or WhatsApp" (mean=3.07). Besides this, the expense of flipped learning due to the large amount of data required (mean = 3.28) and whether noisy home environments hinder understanding of pre-class material (mean = 3.37). Additionally, the mean score suggests that respondents are neutral about the time requirements of flipped learning (mean = 3.20) and the perceived difficulty in grasping complicated concepts presented in pre-class materials (mean = 3.38). The standard deviations show that the answers were not all the same, which means that the statements about problems with flipped learning were not all the same. This variability could stem from factors such as individual experiences, access to resources, or personal preferences regarding learning styles. Overall, respondents had a range of opinions about the difficulties of flipped learning, as shown by their mean scores of 3.37 and standard deviations of 1.05; there were areas where respondents agreed more consistently and areas where opinions were more varied.

**Findings from open-ended questions**

Students were also asked two open-ended questions. The first question was: What *kinds of benefits do you face from flipping learning? Give suggestions.*

**Figure 1**

*Responses to the open-ended question about the benefit of flipped learning.*
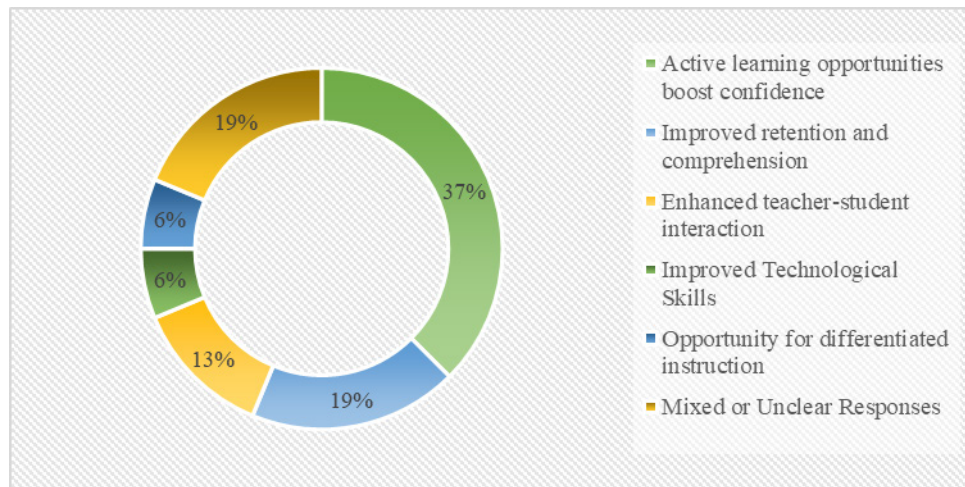


Flipped learning, characterized by the inversion of traditional classroom instruction, offers several potential benefits to both students and teachers. The most frequently cited benefit, comprising about 37% of responses, is the enhancement of active learning opportunities, which in turn bolster students' confidence levels. One respondent stated that "*it helps me to answer questions more confidently and correctly.*" By engaging with instructional materials outside of class and using class time for application and discussion, students may feel more empowered in their learning journey. Furthermore, experts praise the approach for its potential to enhance retention and comprehension by approximately 19%, allowing students to absorb and contemplate the content at their own pace. One respondent stated that "*it has made it more interactive and enjoyable. We get to learn concepts in a visual and auditory format, making the learning of concepts easier.*"

The opportunity for improved teacher-student interaction is another significant benefit, as about 13% of respondents noted. One respondent stated, "*Before flipped learning, I did not like participating in class activities and discussions, and I also didn't like interacting with my fellow mate or the teacher. Now, after the flipped learning, I even love to participate in class activities and discussions, and I also love to interact with my fellow students and the teachers.*" Educators can allocate more attention to addressing individual students' needs, providing personalized guidance, and fostering a deeper understanding of the material. A proportion of the student population, about 6%, has reported that they have experienced enhanced technological competencies, time efficiency, and facilitation of discourse as positive outcomes of engaging in flipped learning. The respondent stated, "*Save time and ease of discussion*" and "*I am now more technologically advanced to do anything.*" However, it's crucial to acknowledge the limitations highlighted by about 19% of respondents, who expressed mixed or unclear perceptions. These may indicate benefits or areas where flipped learning approaches may not be universally beneficial or well-implemented. To fully leverage the potential benefits of flipped learning, educators must consider factors such as access to technology, student readiness for self-directed learning, and ongoing support structures to address any disparities or uncertainties that may arise.

The investigator posed another open-ended question regarding w*hat kinds of problems you face in flipping learning and how they can be resolved. Give suggestions.*

**Figure 2**

Responses to the open-ended question about the challenges of flipped learning.
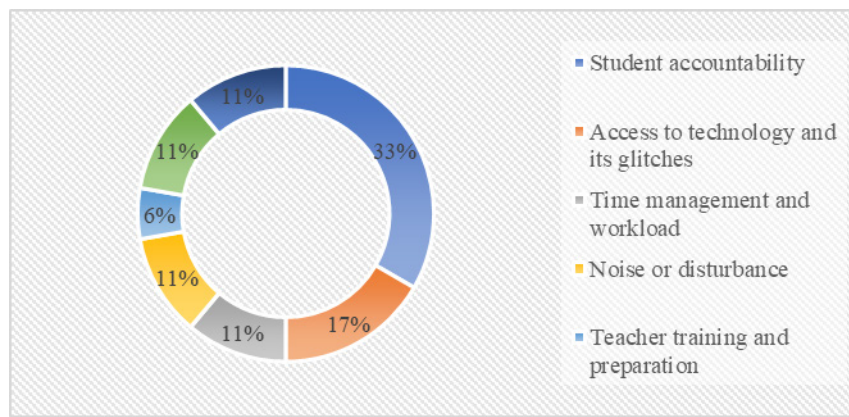
The investigator's categorization of problems faced in flipped learning provides valuable insights into the challenges educators encounter when implementing this pedagogical approach. About 33% of the responses indicated that the most prevalent issue was student accountability. As one respondent stated, "*Sometimes students are not disciplined in the class and create chaos, so it's hard to understand what the teacher was trying to say, so the teacher should take strict actions sometimes.*" To address this, instructors could employ strategies such as fostering a positive and respectful classroom culture of accountability through peer collaboration or integrating reflective activities that encourage students to evaluate their own learning progress. Engaging students in discussions about the importance of mutual respect and cooperation can also encourage them to take responsibility for their behavior and hold each other accountable.

The availability of technology presents another significant challenge, with issues such as "*internet problems, software crashes, and distractions*" affecting approximately 17% of respondents. This emphasizes the ongoing digital divide in educational settings, where students do not uniformly access essential devices or dependable internet connections. To address this issue, educators can provide alternative offline resources and ensure that pre-class materials are available in various formats, such as printable handouts. Additionally, collaborating with institutions to offer technological support to disadvantaged students can help bridge this gap and enhance the effectiveness of flipped learning. Time management and workload, comprising 11% of reported problems, underscore the importance of balancing the demands of flipped learning with other educational responsibilities. One respondent stated, "A proper timetable should be followed to provide study materials considering all subjects and daily homework." Educators may alleviate this challenge by minimizing the amount of homework assigned, leveraging existing resources, or implementing time-saving technologies. Moreover, providing clear guidelines and expectations regarding flipped learning activities can help students manage their time effectively.

Noise or disturbance and unclear or mixed responses, each representing 11% of the reported problems, highlight the importance of creating conducive learning environments both in physical and virtual spaces. Teachers can address noise and disturbance issues by establishing ground rules for classroom behavior or providing quiet spaces for students to engage with pre-class materials. Clear communication and the solicitation of feedback can help resolve uncertainties and inconsistencies in student responses, ensuring that instructors can adapt their teaching strategies accordingly. Finally, 6% of respondents emphasised the significance of teacher training and preparation; these components are essential for the effective execution of flipped learning. Educational institutions should allocate resources towards programs related to teachers' professional development, which help to develop the necessary skills and knowledge to effectively design, implement, and assess flipped learning activities. This training must include instructional design principles, technology integration, and strategies to enhance student engagement and accountability. Addressing the identified challenges necessitates a multifaceted approach that prioritizes collaboration, resource allocation, and sustained support for both teachers and learners.

**CONCLUSION:**

Flipped learning shows considerable potential as a pedagogical method that improves active learning

and student engagement. Successful implementation requires careful consideration of the varied needs and challenges faced by students. A critical assessment of the benefits and obstacles of flipped learning enables researchers and practitioners to formulate more effective and inclusive instructional strategies, thereby facilitating meaningful learning experiences for all students. Future research may examine the long-term academic outcomes of students who have participated in flipped learning versus those teaching through conventional methods. Furthermore, investigating the effects of flipped learning across different subjects and student demographics may provide significant insights for educators and policymakers.

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