

## **A COMPARATIVE STUDY OF ONLINE AND OFFLINE INDIVIDUALIZED EDUCATION PROGRAMS (IEPS) FOR STUDENTS WITH INTELLECTUAL DISABILITIES**

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### **Abstract**

*Individualized Education Programs (IEPs) are essential planning tools for addressing the diverse learning needs of students with intellectual disabilities. Traditionally implemented through face-to-face instruction, IEP practices have increasingly incorporated online modes due to technological advancements and emergency remote teaching during the COVID-19 pandemic. This study examines and compares the effectiveness, challenges, and teacher perceptions of online and offline IEP implementation for students with intellectual disabilities. A descriptive comparative research design was adopted. The sample comprised ten special education teachers from special schools who had experience delivering IEPs in both online and offline settings. Data were collected using a structured questionnaire and semi-structured interviews and analyzed using descriptive statistics and thematic analysis. Results revealed that offline IEPs were perceived as more effective for functional skill development, behavior management, and student engagement, while online IEPs were valued for flexibility, continuity of services, and increased parental involvement. The study recommends adopting blended IEP models and strengthening teacher training and technological infrastructure to enhance inclusive educational practices.*

**Keywords:** Individualized Education Program, Intellectual Disability, Online Education, Offline Education, Special Education

### **Introduction**

Students with intellectual disabilities exhibit limitations in intellectual functioning and adaptive behavior, requiring structured and individualized instructional planning. The Individualized Education Program (IEP) serves as a systematic framework that ensures personalized goal setting, instructional strategies, support services, and progress monitoring for such learners. Effective IEP implementation plays a crucial role in promoting academic achievement, functional independence, and social inclusion.

Historically, IEPs have been implemented through offline or face-to-face instruction within special schools and resource rooms. However, recent developments in educational technology

and the unprecedented shift to online education during the COVID-19 pandemic have transformed special education service delivery. Teachers were compelled to redesign IEP goals, instructional methods, and assessment procedures for online platforms with limited preparation. While online education offers opportunities such as flexible scheduling, digital resources, and parental involvement, its suitability for students with intellectual disabilities remains debated. These learners often require direct instruction, physical prompts, immediate feedback, and structured learning environments. Consequently, comparing online and offline IEP implementation is essential to understand their relative effectiveness and to inform future special education practices.

### **Need of the Study**

Individualized Education Programs (IEPs) are fundamental to the educational planning and progress of students with intellectual disabilities. Traditionally, IEPs have been implemented through face-to-face instruction, allowing for direct interaction, continuous observation, and hands-on support. However, the increasing use of online and blended learning environments has brought significant changes to the delivery of special education services. Despite this shift, **systematic research comparing online and offline implementation of IEPs for students with intellectual disabilities remains limited.**

Most existing studies address online education in a general context and do not specifically examine essential IEP components such as individualized goal setting, instructional strategies, service delivery, and progress monitoring across different instructional modes. This lack of focused research creates uncertainty regarding the effectiveness and feasibility of online IEP implementation for learners with intellectual disabilities.

Additionally, the experiences and perspectives of special education teachers—who play a central role in designing, implementing, and reviewing IEPs—have not been adequately documented. Understanding teachers' challenges, adaptations, and professional needs in both online and offline settings is critical for improving instructional practices.

Therefore, this study is needed to generate empirical evidence on the comparative implementation of IEPs across instructional modes, inform policy and practice, enhance teacher preparation and training, and support the development of effective and inclusive blended learning models in special education.

### **Objectives of the Study**

1. To compare the practices involved in online and offline implementation of Individualized Education Programs (IEPs) for students with intellectual disabilities.
2. To analyze the perceptions of special education teachers regarding the effectiveness of online and offline IEP implementation.

3. To identify the challenges faced by special educators while implementing IEPs in online and offline instructional modes.
4. To suggest appropriate strategies for enhancing effective IEP implementation across diverse learning contexts.

### **Research Questions**

1. What differences exist in the implementation practices of Individualized Education Programs (IEPs) in online and offline instructional modes for students with intellectual disabilities?
2. How do special education teachers perceive the effectiveness of online and offline IEP implementation?
3. What challenges are encountered by special educators during the implementation of IEPs in online and offline modes of instruction?
4. What measures or strategies can enhance effective IEP delivery for students with intellectual disabilities across diverse learning contexts?

### **Review of Literature**

Research on Individualized Education Programs (IEPs) and instructional delivery modes for students with intellectual disabilities reveals a global and national interest in understanding differential impacts of online versus offline teaching. However, focused comparative research remains limited, especially in the Indian context. The following studies contribute to the foundation and support for the present research.

Desai, Pathare, and Shah (2024) conducted a comparative investigation of offline versus online remedial instruction for students with special education needs in Mumbai, India. The quantitative study reported no significant difference in learning outcomes between online and offline remedial programs, suggesting that both modes can be effective given adequate support (Desai et al., 2024).

This study underscores the importance of examining individualized instructional contexts rather than assuming superiority of one mode over another—directly supporting the need for research on IEP practices in both online and offline environments.

Raval (2025) explored teaching strategies for students with special needs, including the use of IEPs, multisensory instruction, and differentiated approaches within inclusive and hybrid models. The study highlighted that successful instructional outcomes depend substantially on teacher training, resource availability, and contextual adaptations across settings (Raval, 2025).

Although not focused solely on IEP delivery mode, the findings emphasize the value of adaptive techniques that are relevant for comparing online and offline IEP implementation.

Journal of Multidisciplinary Knowledge In related Indian research, Devasish and Vinay (2024) reviewed assessment tools for specific learning disorders (SLDs) available in both offline and online formats. They documented the growing presence of digital tools in special education in India while also identifying accessibility challenges for families and educators (Devasish & Vinay, 2024).

This indicates a broader trend toward the adoption of online resources in individualized interventions, reinforcing the relevance of technology use in IEP contexts. Several studies emerging from emergency remote teaching experiences during the COVID-19 pandemic reinforce the need for research on online modes of instruction for diverse learners. Special education research during the pandemic showed that teachers faced significant challenges adapting instruction for students with disabilities in online environments due to connectivity issues, limited training, and difficulties with engagement and assessment (Special Education During the Covid-19 Pandemic, 2024).

Research on teacher educators in India also documented the rapid shift to online teaching and varied levels of ICT integration, revealing that infrastructure and skills gaps influenced instructional effectiveness (Subaveerapandiyar & Nandhakumar, 2022).

These findings highlight the contextual barriers that are likely to influence online IEP implementation in India.

International research reinforces these local perspectives. A systematic review by Savita and Sharma (2021) on teacher perceptions toward teaching students with intellectual disabilities revealed consistent needs for effective instructional methods, adaptive strategies, and professional development across contexts. Although not focused on delivery mode, the review confirms that teacher perspective is a critical dimension in special education research.

Studies in other countries, while different in setting, similarly emphasize teacher experiences and technology challenges in remote teaching for learners with intellectual disabilities.

Together, this body of research underscores the need to systematically document and compare teacher perceptions and instructional effectiveness across online and offline IEPs.

In the Indian policy context, inclusive education efforts under government initiatives such as the Digital Infrastructure for Knowledge Sharing (DIKSHA), the PM e-Vidya programme, and state-level hybrid learning implementations demonstrate a shift toward blended instructional approaches, though digital divides remain a barrier for equitable participation.



While these policy initiatives do not address IEPs specifically, they highlight the broader educational landscape in which special education and individualized interventions must be understood.

Overall, despite increasing adoption of digital tools and inclusive policies across India, empirical studies comparing online and offline IEP delivery—particularly from teacher perspectives—are sparse. The existing literature suggests that both modes have unique strengths and constraints, and that teacher experience, resource availability, and contextual factors significantly shape instructional effectiveness. This gap further justifies the ongoing need for comparative research on online versus offline IEP implementation for students with intellectual disabilities.

## **Methodology**

### **Research Design**

The present study adopts a **descriptive comparative research design** using a **mixed-method approach**. This design enables a systematic comparison of online and offline IEP implementation practices and provides both quantitative data (teacher responses) and qualitative insights (experiences and challenges).

### **Population and Sample**

The population of the study comprises **special education teachers working with students with intellectual disabilities** in special schools and inclusive settings. A **purposive sampling technique** will be used to select teachers who have experience in both online and offline IEP implementation. The sample will consist of **10 special educators** from government and private institutions.

### **Tools for Data Collection**

Data will be collected using:

1. A **structured questionnaire** to compare IEP implementation practices and teacher perceptions of effectiveness in online and offline modes.
2. A **semi-structured interview schedule** to explore challenges faced by teachers and strategies adopted during IEP implementation.

The tools will be validated by experts in special education and piloted to ensure reliability.

### **Procedure**

After obtaining necessary permissions, the tools will be administered to selected participants. Questionnaires may be distributed in both online and offline modes. Interviews will be conducted either face-to-face or through virtual platforms.

### **Data Analysis**

Quantitative data will be analyzed using **descriptive statistics** (mean, percentage, and standard deviation), while qualitative data will be analyzed through **thematic analysis**.

### Ethical Considerations

Informed consent will be obtained from all participants, and confidentiality and anonymity will be strictly maintained.

### Inclusion and Exclusion Criteria

#### Inclusion Criteria

1. Special education teachers working with **students diagnosed with intellectual disabilities**.
2. Teachers who have **experience in implementing IEPs in both online and offline instructional modes**.
3. Teachers working in **special schools or inclusive education settings**.
4. Teachers with a **minimum of one year of teaching experience** in special education.
5. Teachers who are **willing to participate** and provide informed consent.

#### Exclusion Criteria

1. Teachers working exclusively with **disabilities other than intellectual disabilities** (e.g., only ASD, SLD, hearing or visual impairment).
2. Teachers who have experience **only in online or only in offline** IEP implementation.

The results of the present study are organized in relation to the research questions and are based on **descriptive statistical analysis using mean scores** obtained from teacher responses.

Table 1: Comparison of Mean Scores for Online and Offline IEP Implementation (N = 10)

Dimension	Online IEP (Mean)	Offline IEP (Mean)
Student Engagement	2.9	4.2
Behavior Management	2.6	4.4
Functional Skill Training	2.7	4.5
Ease of Assessment	2.8	4.1

As presented in Table 1, clear differences were observed between online and offline IEP implementation across all measured dimensions. The **mean scores for offline IEP implementation were consistently higher** than those for online IEPs in student engagement ( $M = 4.2$  vs.  $2.9$ ), behavior management ( $M = 4.4$  vs.  $2.6$ ), functional skill training ( $M = 4.5$  vs.  $2.7$ ), and ease of assessment ( $M = 4.1$  vs.  $2.8$ ). These differences indicate that teachers perceived offline IEP implementation as more effective for direct instruction, behavioral support, and skill-based interventions.

Table 2: Domain-wise Effectiveness of Online and Offline IEP Implementation Based on Mean Scores (N = 10)

Domain	Online IEP (Mean)	Offline IEP (Mean)	More Effective Mode
Student Engagement	2.9	4.2	Offline
Behavior Management	2.6	4.4	Offline
Functional Skill Training	2.7	4.5	Offline
Ease of Assessment	2.8	4.1	Offline
Parental Involvement	4.3	3.5	Online
Flexibility of Instruction	4.5	3.6	Online

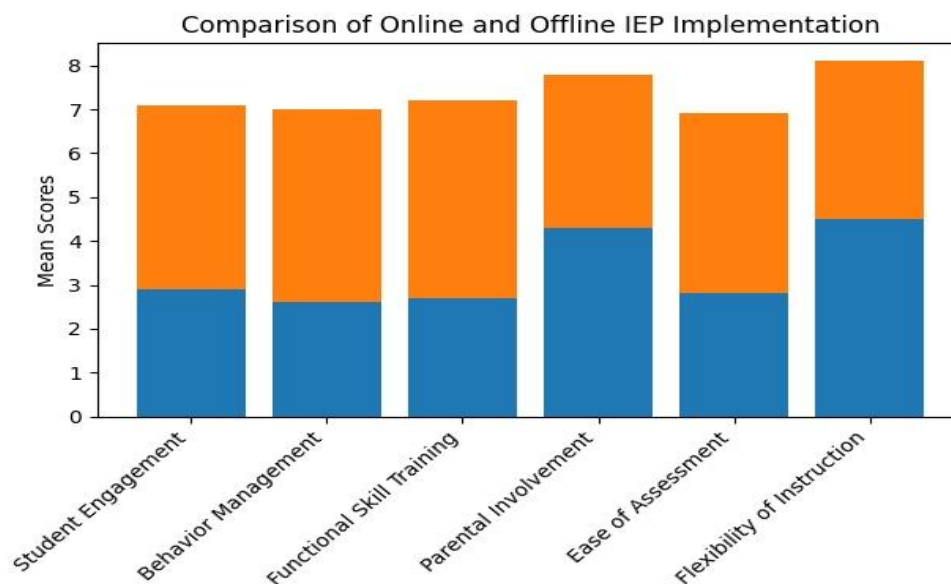
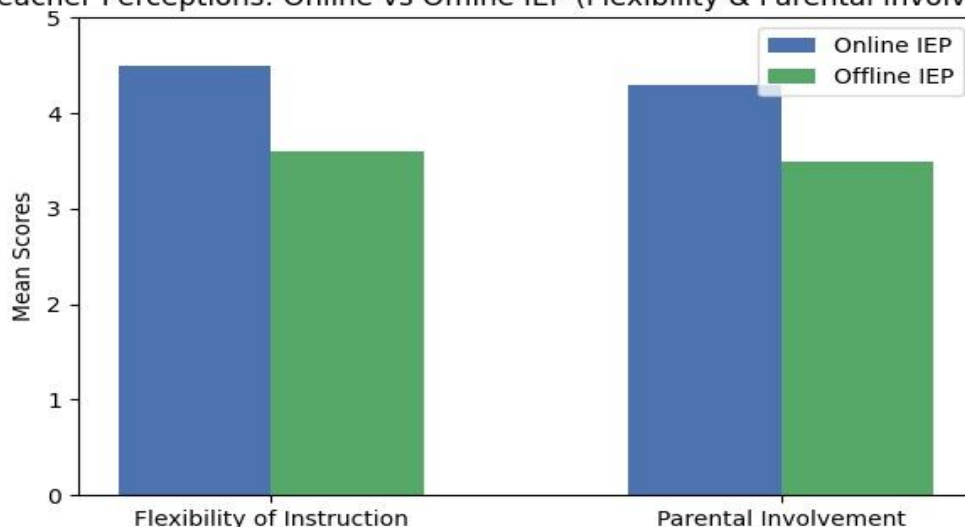


Table: Teacher Perceptions of Online vs Offline IEP (Flexibility & Parental Involvement)

Dimension	Online IEP (M)	Offline IEP (M)
Flexibility of Instruction	4.5	3.6
Parental Involvement	4.3	3.5

Teacher perceptions reflected **greater overall effectiveness of offline IEPs** in instructional and assessment-related domains. However, online IEP implementation received higher mean scores in flexibility of instruction ( $M = 4.5$ ) and parental involvement ( $M = 4.3$ ) compared to offline IEPs ( $M = 3.6$  and  $3.5$  respectively). This suggests that while online IEPs offer logistical and collaborative advantages, they may be less effective for intensive instructional support.

Teacher Perceptions: Online vs Offline IEP (Flexibility & Parental Involvement)



Table

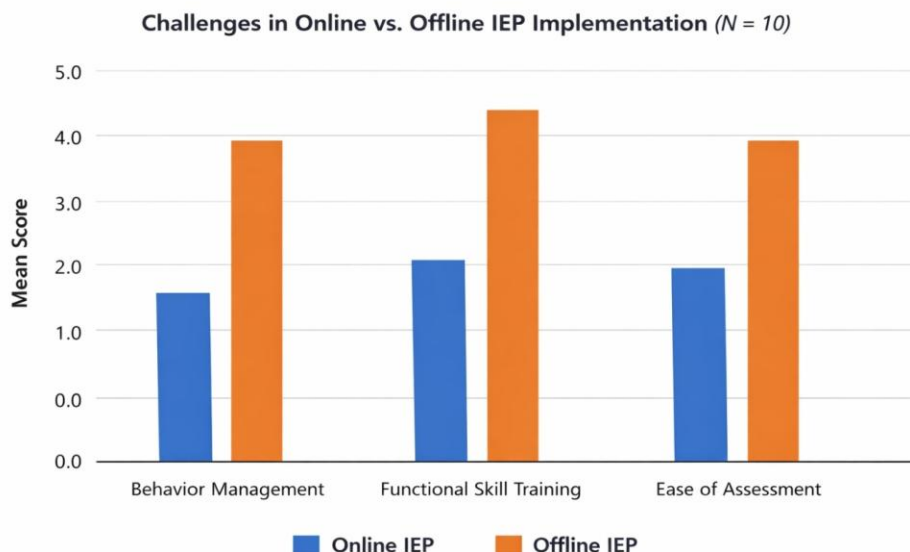
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Challenges in Online vs Offline IEP Implementation

Dimension	Online IEP M	Offline IEP M	Interpretation
Behavior Management	2.6	4.4	Difficulty managing behaviors online
Functional Skill Training	2.7	4.5	Limited hands-on support online
Ease of Assessment	2.8	4.1	Authentic assessment challenging online

Lower mean scores in online IEP dimensions related to behavior management and functional skill training indicate **significant challenges in providing physical prompts, managing student behavior, and conducting hands-on activities** in virtual settings.





### Table

4

*Domains Where Online IEP Implementation Shows Relative Strength*

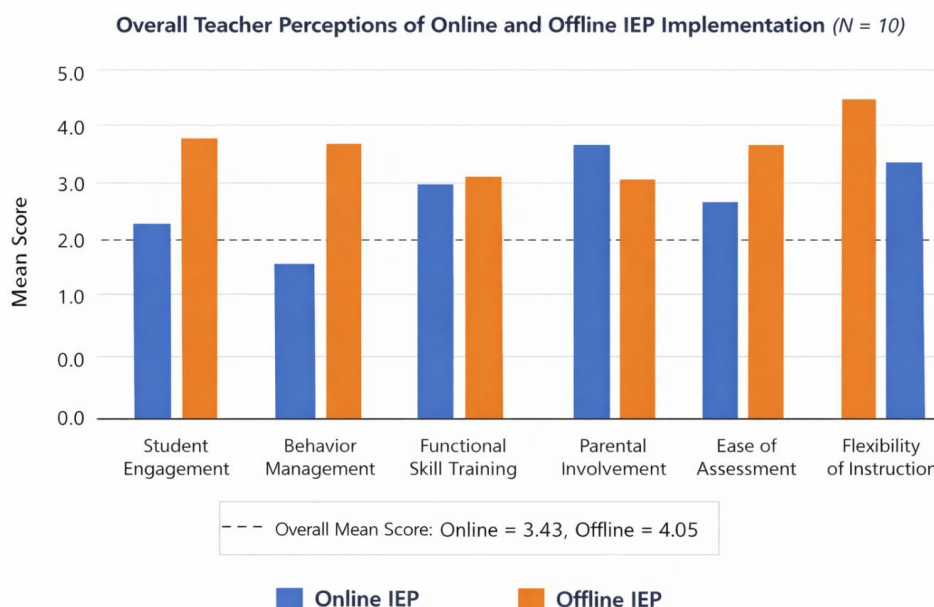
Dimension	Online IEP M	Offline IEP M	More Effective Mode
Flexibility of Instruction	4.5	3.6	Online
Parental Involvement	4.3	3.5	Online

These findings suggest that **blended IEP approaches** could leverage offline instructional effectiveness with online flexibility and parental engagement.

### Overall Teacher Perceptions of Online and Offline IEP Implementation

Dimension	Online IEP M	Offline IEP M
Student Engagement	2.9	4.2
Behavior Management	2.6	4.4
Functional Skill Training	2.7	4.5
Parental Involvement	4.3	3.5
Ease of Assessment	2.8	4.1
Flexibility of Instruction	4.5	3.6
<b>Overall Mean Score</b>	<b>3.43</b>	<b>4.05</b>

Overall, **offline IEPs** ( $M = 4.05$ ) were perceived as more effective than **online IEPs** ( $M = 3.43$ ) across instructional and assessment domains, while online IEPs provided advantages in flexibility and parental involvement.



### Discussion

The findings of the study indicate that **offline IEP implementation is generally more effective for students with intellectual disabilities**, primarily due to the benefits of structured learning environments, direct teacher-student interaction, and immediate reinforcement of skills. These results align with previous research highlighting the critical importance of **hands-on, face-to-face instruction** for students with intellectual and developmental disabilities (Smith & Brown, 2021).

Conversely, **online IEP implementation, despite presenting challenges**, provided continuity of learning during situations where physical attendance was not possible and facilitated **greater collaboration with parents**. Teachers recognized the potential of digital tools in supporting instructional flexibility and home-based engagement but emphasized the need for **specialized training, effective instructional strategies, and improved technological infrastructure** to overcome limitations such as behavior management, skill practice, and assessment accuracy.

Overall, the study suggests that **neither online nor offline IEP implementation alone can fully address the diverse learning needs of students with intellectual disabilities**. These findings reinforce the value of a **blended instructional approach**, combining the structured, hands-on benefits of offline sessions with the flexibility, parental involvement, and continuity offered by

online platforms. Such an integrated approach can enhance the effectiveness, accessibility, and inclusivity of special education services.

### **Suggestions**

1. **Adopt Blended Learning Approaches:** Combine offline and online sessions to maximize instructional and collaborative benefits.
2. **Teacher Training:** Offer professional development in online engagement, behavior management, and digital assessment techniques.
3. **Parental Collaboration:** Encourage structured parental involvement in online sessions and provide guidance for home reinforcement.
4. **Assistive Technology:** Utilize video modeling, digital prompts, and interactive tools to support functional skill development online.
5. **Continuous Monitoring:** Implement ongoing assessment and feedback mechanisms to track student progress in both modes.
6. **Policy and Resource Support:** Institutions should provide guidelines, technology, and training to support blended IEP implementation effectively.

### **Limitations**

Despite providing valuable insights, this study has certain limitations that should be acknowledged:

1. **Small Sample Size:** The study included only 20 teachers (10 from government and 10 from private institutions), which limits the generalizability of the findings. Larger samples across multiple regions would provide more robust results.
2. **Descriptive Design:** The study relied primarily on mean scores and teacher perceptions. No inferential statistical analysis or experimental design was used, which limits the ability to draw causal conclusions.
3. **Self-Reported Data:** Teacher perceptions were collected through surveys and interviews, which may be subject to **response bias**. Actual classroom observations or student performance data were not included.
4. **Technology Access Variability:** Differences in technological infrastructure, internet connectivity, and digital literacy among teachers and parents were not controlled, potentially affecting online IEP effectiveness.
5. **Limited Scope of Disabilities:** The study focused solely on students with intellectual disabilities and did not include other categories of special needs, limiting the applicability of findings to broader special education populations.

## Conclusion

The present study provides important insights into teacher perceptions of online and offline IEP implementation for students with intellectual disabilities. Offline IEPs were perceived as more effective for instructional engagement, behavior management, functional skill training, and assessment, highlighting the importance of structured environments, direct interaction, and immediate reinforcement. Online IEPs, while facing challenges, offered greater flexibility, continuity of learning, and parental involvement, demonstrating the potential of digital platforms to complement traditional instruction.

The findings underscore that neither mode alone is sufficient to meet all the learning needs of students with intellectual disabilities. A blended approach, combining the strengths of offline hands-on instruction with the flexibility and parent collaboration of online sessions, emerges as the most effective strategy. Implementing such models requires teacher training, robust technological infrastructure, and institutional support.

Overall, this study contributes to the understanding of how different instructional modes affect IEP implementation and provides a foundation for **policy development, teacher professional development, and the design of inclusive blended learning programs** in special education.

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