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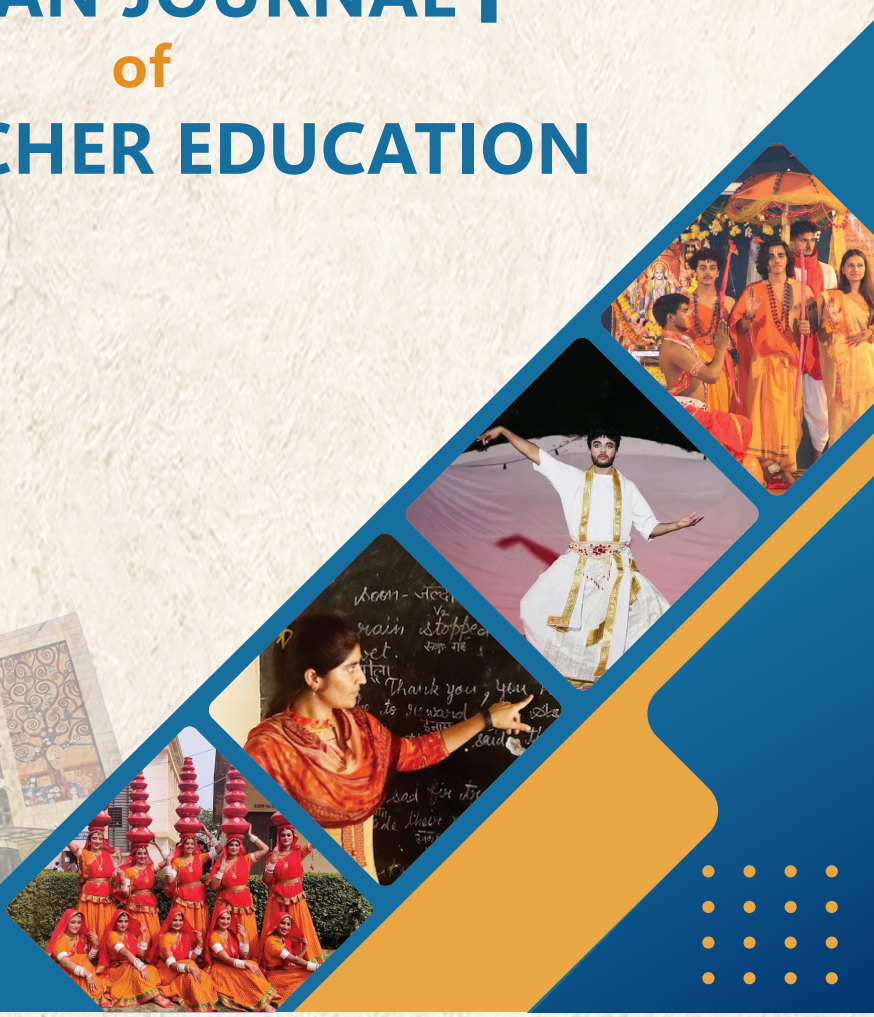
NCTE

INDIAN JOURNAL of TEACHER EDUCATION



National Council for Teacher Education
New Delhi

INDIAN JOURNAL OF TEACHER EDUCATION (IJTE)

[ISSN 2349-6355]

AIMS AND SCOPE

The Indian Journal of Teacher Education (IJTE) is a peer reviewed International Journal published by the National Council for Teacher Education (NCTE), New Delhi (a statutory body of Government of India) three times a year, i.e. in April, August and December. It aims at engaging with policy, theory, research and practice in teacher education and their interface at different levels of education. It also intends to create a forum for academic discussions, debates and other forms of exchange of ideas in teacher education among different stakeholders. It encourages multi-disciplinary, comparative and praxis based analysis in the domain of teacher education regionally and globally.

To realize these aims, the journal invites reflective articles, research papers, critical reviews, philosophical analysis of concepts and theories of education, book reviews and commentaries on both historical and contemporary issues and concerns in a variety of areas involving professional development of teachers and teacher educators, experiential accounts of educational practitioners, and ethical and quality concerns in teacher education. Views expressed by authors belong to them, and not to NCTE.

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IJTE
INDIAN JOURNAL OF TEACHER EDUCATION

NATIONAL COUNCIL FOR TEACHER EDUCATION
NEW DELHI - 110075

Message

धर्मेन्द्र प्रधान
ଧର୍ମେନ୍ଦ୍ର ପ୍ରଧାନ
Dharmendra Pradhan

शिक्षा मंत्री
भारत सरकार
Minister of Education
Government of India

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

MESSAGE

I am happy to know that the Indian Journal of Teacher Education (IJTE) is being revived by the National Council for Teacher Education (NCTE) after a hiatus of nearly a decade. The resumption of publication of this prestigious journal is not only timely but also deeply symbolic of the Government's renewed commitment to teacher education in alignment with the transformative vision of the National Education Policy (NEP) 2020.

Rapid technological advancement, pedagogical innovation, and growing emphasis on inclusivity and holistic development, have redefined the role of research in shaping the future of education. IJTE, in its revived form, I am sure, will serve as a vibrant platform for scholars, practitioners, and policymakers to engage in critical dialogue, share evidence-based insights and collectively chart the future of teacher education in India.

I commend the NCTE for this laudable initiative and hope that the journal will catalyse knowledge creation in the vital domain of teacher education.

(Dharmendra Pradhan)

सबको शिक्षा, अच्छी शिक्षा

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Message

जयन्त चौधरी
JAYANT CHAUDHARY

सत्यमेव जयते

कौशल विकास और उद्यमशीलता
राज्य मंत्री (स्वतंत्र प्रभार) एवं
शिक्षा राज्य मंत्री
भारत सरकार
Minister of State (Independent Charge) for
Skill Development and Entrepreneurship
and Minister of State for Education
Government of India

I extend my warm greetings and congratulations to the editorial team of the **Indian Journal of Teacher Education (IJTE)** on its revival, coinciding with the **31st Foundation Day** of the **National Council for Teacher Education (NCTE)**.

The resurgence of IJTE comes at a pivotal moment for Indian education. The **National Education Policy (NEP) 2020** has laid out a transformative vision to reimagine education in India, with a strong emphasis on **teacher preparation, continuous professional development**, and **research-based practice**. High-quality teacher education is the cornerstone of this vision.

As India works toward an inclusive, future-ready education system, we must strengthen the symbiotic relationship between **general education and skill development**. Teachers will play a pivotal role in enabling this integration—ensuring that learners not only gain knowledge but also acquire practical, employable skills from an early stage.

IJTE, as a peer-reviewed international journal, offers a crucial platform to advance research and dialogue on this evolving role of educators. It can play a key role in shaping discourse around **pedagogical innovation**, **competency-based education**, and the incorporation of **21st-century skills** into mainstream curricula.

I am confident that IJTE will contribute meaningfully to India's educational transformation and the realisation of NEP 2020's vision.

My best wishes for the success of this important initiative.

(Jayant Chaudhary)

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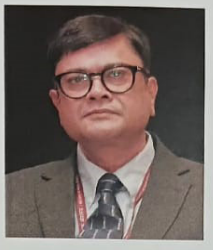
Message

संजय कुमार, भा.प्र.से
सचिव

Sanjay Kumar, IAS
Secretary

सत्यमेव जयते

स्कूल शिक्षा और साक्षरता विभाग
शिक्षा मंत्रालय
भारत सरकार
Department of School Education & Literacy
Ministry of Education
Government of India



It is deeply heartening to see that the Indian Journal of Teacher Education (IJTE) has been revived by the National Council for Teacher Education after nearly a decade. This effort reflects a reaffirmation of our collective commitment to nurturing thoughtful, well-prepared, and inspired educators who are central to the future of our education system.

Teachers lie at the heart of every child's learning journey. Strengthening teacher education is not just a professional necessity—it is a national priority. A vibrant academic journal like IJTE plays an important role in enabling research-based insights, capturing classroom experiences, and promoting fresh thinking in pedagogy and teacher development.

In the spirit of the National Education Policy 2020, which envisions teachers as lifelong learners and change agents, IJTE can become a platform for deep inquiry into pedagogy and meaningful dialogue amongst the teachers fraternity. I commend the editorial team, contributors, and the wider academic community for their commitment to excellence. As IJTE returns to the academic landscape, may it continue to bridge research and practice and support the continuous evolution of teacher education in India.

(Sanjay Kumar)

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Foreword

It gives me immense pride and satisfaction to present to you this revived issue of the Indian Journal of Teacher Education (IJTE), a significant initiative of the National Council for Teacher Education (NCTE). This publication marks a moment of renewal and resurgence, as we bring the journal back to life after nearly a decade, with its last issue having been published in 2015.

In the intervening years, the world has changed in ways we could scarcely have imagined. The realm of education, and particularly the teaching-learning process, has undergone a dramatic transformation. The global pandemic served as a defining moment for education systems everywhere, compelling educators and institutions to rethink how we teach, how students learn, and how knowledge is shared. This experience has only reaffirmed the importance of continuous research and inquiry in the field of teacher education.

Today, more than ever, we need to explore new ideas, uncover fresh perspectives, and identify emerging challenges in education. Our teachers must be equipped not only with subject knowledge and pedagogy but also with the ability to adapt, innovate, and respond to the changing needs of learners in a dynamic world.

As we relaunch this journal, the selected contributions reflect the shifting priorities and emerging domains in teacher education today. The role of digital technology in teaching and learning is explored through studies on Digital India initiatives and the digital literacy skills of students, pointing to the urgent need for digital equity and preparedness in education. The inclusion of Indian Knowledge Systems in teacher education highlights a growing recognition of culturally rooted pedagogies that align with national values and educational identity. Equally significant is the focus on innovative pedagogical strategies, with one study examining how movies can serve as powerful educational tools in higher education. Issues of social inclusion and mental health support are addressed through case-based insights into autism support in early education and an evaluation of the counselling roles that teachers are increasingly expected to take on, as seen in the NISHTHA programme.

Together, these articles capture a cross-section of challenges and opportunities in teacher education, from bridging digital divides to reimagining pedagogical practices, and from honouring indigenous knowledge to supporting diverse learner needs. This

collection serves as a timely reflection of how teacher education must evolve to meet the vision of the National Education Policy 2020 and the transformative goals outlined in National Curriculum Framework 2023.

In this context, IJTE must emerge not just as a journal but as a vibrant platform that captures the voices, ideas, research, and innovations shaping teacher education in India and beyond. It should provide space for both established scholars and young practitioners to share their work, debate ideas, and contribute to the collective wisdom of our teaching community.

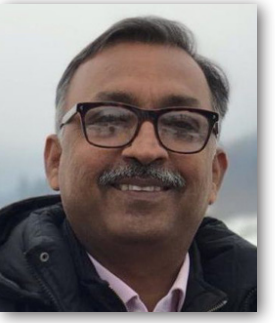
As our ancient wisdom from the Chandogya Upanishad beautifully reminds us: "आचार्यवान् पुरुषो वेद।" — One who has a teacher truly knows. This profound truth holds greater relevance today than ever before. It reminds us that behind every learner's growth stands an insightful teacher, and behind every transformative classroom lies thoughtful, research-driven teacher education. The revival of this journal is a reaffirmation of that belief - a humble effort to support the community of educators, scholars, and policymakers in their pursuit of knowledge, inquiry, and excellence.

I extend my heartfelt appreciation to all the contributors, reviewers, editorial members, and the academic community for their enthusiastic participation in this revived edition. Let us continue to work together to keep the spirit of inquiry alive and to build a teaching profession that is future-ready, resilient, and rooted in our shared values.

With best wishes for this new beginning.

Professor Pankaj Arora
Chairperson
National Council for Teacher Education (NCTE)
New Delhi

From the Editor's Desk



It gives me immense pleasure to introduce the inaugural issue of the Indian Journal of Teacher Education (IJTE)—a significant step in the journey toward reimagining teacher education in India and beyond. As a peer-reviewed international journal published under the aegis of the National Council for Teacher Education (NCTE), New Delhi, IJTE aspires to serve as a vital platform for thought leadership, policy dialogue, research dissemination, and professional exchange among educators, researchers, policymakers, and practitioners.

We are launching this journal at a pivotal time in India's educational landscape. With the roll-out of the National Education Policy 2020 (NEP 2020), teacher education has been placed at the core of systemic transformation. The policy envisions teachers not merely as facilitators of learning but as active change agents in the creation of a just, inclusive, and knowledge-rich society. In alignment with this vision, IJTE seeks to foreground critical and interdisciplinary that engages deeply with policy, theory, and practice in teacher education.

The journal is committed to capturing a diversity of perspectives—be it reflective narratives from classrooms, theoretical analyses of educational philosophies, or empirical research on teacher preparation. It encourages conversations that bridge disciplinary boundaries and speak to the lived realities of teachers and learners alike. Special emphasis is placed on pedagogical renewal, inclusive practices, technological integration, and the ethical dimensions of teacher development.

I am delighted to share that we have received an overwhelming response from scholars across the country—over 700 manuscripts have been submitted so far, reflecting a strong and vibrant interest in addressing the complex challenges and possibilities within teacher education. Each contribution reaffirms our belief that there is a growing collective will to question, reflect, and innovate in this critical domain. This first issue of IJTE is a humble yet determined step toward fostering academic dialogue, policy reflection, and grassroots experiences that resonate with the spirit of NEP 2020. It aims to address both foundational and emerging issues in teacher education, opening up space for nuanced debates and collaborative exploration.

As we embark on this journey, I extend heartfelt gratitude to all contributors, reviewers, editorial board members, and the NCTE leadership for their vision and support. I invite our readers to engage with the ideas presented in this issue and to contribute actively to future volumes.

Let this journal be more than a repository of knowledge—let it be a space of inspiration, inquiry, and transformation.

Warm regards,

Professor Amit Kauts
Head, Department of Education,
Guru Nanak Dev University, Amritsar, Punjab

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Harnessing the Pedagogical Potential of Movies: A Systematic Literature Review

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Abstract: This study systematically reviews the literature on the role of movies in education, examining their effectiveness in enhancing student engagement, comprehension, and learning outcomes. While traditional teaching methods often struggle to capture students' attention and simplify complex concepts, cinematic narratives provide an innovative approach to bridging this gap. Using a systematic literature review methodology, the study combines findings from 32 research papers, focusing on various educational levels and disciplines. The analysis explores key themes such as character education, language learning, medical training, pedagogical innovation, and affective education, demonstrating how movies contribute to interdisciplinary learning. Findings indicate that movies facilitate active learning, improve retention, and foster critical thinking, while also presenting challenges such as content selection and assessment of learning outcomes. The study highlights the growing academic interest in cinematic pedagogy, as evidenced by publication trends over the past two decades. This research underscores the untapped potential of movies in education and calls for further empirical studies to develop structured frameworks for their effective integration into curricula.

Keywords: Movies in Education, Pedagogical Strategies, Instructional Media, Systematic Literature Review

Introduction

"Tell me and I forget. Teach me and I remember. Involve me and I learn." This timeless wisdom resonates deeply with the power of cinema in the classroom. Over the decades, movies have not only entertained us but have also taught life lessons, sparked revolutions, and challenged our worldviews. Think of Dead Poets Society, where Mr. Keating urges students to "make your lives extraordinary," or Taare Zameen Par, which sensitively brings attention to learning disabilities and the need for empathy in education. Such films do more than tell stories—they inspire change and reflection. In today's rapidly evolving educational landscape, where attention spans are shrinking and students crave relevance, cinema offers a bridge between theory and life.

Imagine a classroom where students don't just read about resilience but feel it through The Pursuit of Happiness, where they don't just study leadership but observe it in Chak De! India. As society becomes increasingly visual and emotion-driven, traditional pedagogies often fail to connect with learners on a deeper level. Educators are now turning toward storytelling mediums that resonate with learners' realities, and movies are emerging as one of the most powerful tools in this transformation. Films, with their emotional arcs and immersive narratives, serve not only as cultural artefacts but also as mirrors to society, ethics, science, and the human condition.

Nothing beats the unparalleled impact of a movie on a human mind. The powerful storytelling takes us to an entirely different world. The story, the characters the message, coupled with the sound effect, leave an indelible mark on the viewers. In a world where innovative practices are regularly being explored to capture the attention of students, movies can be beneficial. The blue ocean of the movie can be a critical element of an impactful teaching pedagogy. In the era where the boundaries are blurred, it requires developing a wider view of the world, in which movie-based pedagogy can play a crucial role. The mass media play an essential role in this aspect. Mass media serve three purposes: to inform, to teach, and to entertain (Folkerts, 2006). By disseminating information, facilitating dialogue, imparting skills, and encouraging agreement on the need to maintain state stability, the media serves an essential social function (Sharma & Uniyal, 2016). An uncharted arena of the movies can be used to simplify a complex idea. As they spark imagination in students, they help to break down hard ideas and make them easier for students to understand. "Visuals and stories can be used together to explain abstract ideas, historical events, scientific facts, and literary themes". Movies can be used to improve learning and keep students interested in the classroom. It can lead to active and immersive learning as they stay with us for a long time.

Movies possess a unique ability to captivate the human mind through powerful storytelling, immersive visuals, and emotive soundscapes. As an art form, it has long influenced perception, emotion, and cognition (Allen, 2011; Dudai, 2012; Lindsay, 2023).

Within the educational domain, these attributes present untapped pedagogical potential, particularly in an era where traditional teaching methodologies often fall short in engaging digital-native learners. The increasing demand for innovative, student-centric learning strategies has prompted educators to explore alternative instructional tools, among which movies are emerging as a compelling medium for enhancing comprehension and critical thinking (Kataria, 2024; Utaminingsih & Kassymova, 2024). Movies, by nature, blend narrative, emotion, and imagery to simulate real-world experiences. These attributes make them particularly effective in breaking down complex concepts, fostering empathy, and reinforcing abstract ideas through contextualized learning (Pavithra & Gandhimathi, 2024). As such, cinematic pedagogy can facilitate active and immersive learning, making knowledge more relatable and memorable. In this context, the use of films aligns well with principles of affective and experiential education—particularly when leveraged to teach historical events, ethical dilemmas, scientific theories, or cultural narratives (Omran *et al.*, 2025).

There is a well-documented impact that films have had on human cognition (Allen, 2011; Dudai, 2012; Lindsay, 2023) and their potential as a potent pedagogical instrument, but still, cinematic narratives have not yet been completely incorporated into conventional teaching methodologies. Traditional ways of teaching don't always work to keep students' attention and explain difficult ideas clearly. Especially in an era where innovative practices are crucial for engaging students, the use of movies presents a unique opportunity to enhance learning outcomes (Kataria, 2024; Utaminingsih & Kassymova,2024; Zolkapli, *et al.*, 2024; Omran, *et al.*, 2025). Using story, characters, and audio-visual effects in a dynamic way can help make difficult ideas easier to understand and make learning more engaging and powerful (Pavithra & Gandhimathi, 2024).

Research Gap

Despite the increasing academic interest in the pedagogical use of movies, the existing literature remains fragmented across disciplines, with limited synthesis of cross-domain evidence. Most studies have focused on context-specific applications—such as language learning, medical training, or character education—without offering a unified theoretical or practical framework for integrating films across diverse educational settings (López & Quesada, 2021; Pavithra & Gandhimathi, 2024). Furthermore, while individual papers report positive outcomes regarding engagement and comprehension, few explore longitudinal effects on learning retention or provide scalable models for curriculum integration (Omran *et al.*, 2025). The methodological rigor in some studies is inconsistent, with variations in how learning outcomes are assessed, leading to a lack of generalizability. This review identifies a critical need for empirical studies that not only examine domain-specific effectiveness but also develop and test comprehensive frameworks for the intentional and systematic use of cinematic content in pedagogy. Additionally, the gap between the cognitive potential of cinematic narratives and their

structured incorporation into mainstream education remains underexplored, especially in the context of outcome-based education and digital transformation in classrooms (Kataria, 2024; Utaminingsih & Kassymova, 2024). This research analyses the untapped potential of movies in education. It investigates how movies can be used to help students understand abstract ideas, historical events, scientific principles, and literary themes better. The purpose of this systematic literature study was to synthesise how movies can be used as a pedagogical tool to improve student learning and outcomes.

Methodology

This study employed a systematic literature review to explore the effectiveness of movies as pedagogical tools within the context of higher education. The primary objective was to critically examine how films contribute to enhancing student engagement, comprehension of complex concepts, and overall academic achievement. Specifically, the review aimed to address the following research questions: (1) What are the prevailing practices and theoretical frameworks underpinning the use of movies in educational settings? (2) In what ways do movies influence student engagement and understanding? (3) What measurable learning outcomes have been associated with film-based instruction? and (4) What challenges and limitations have been documented in prior research?

To ensure comprehensive coverage, an extensive search strategy was adopted across multiple academic databases, including Scopus, Google Scholar, ERIC, and Web of Science. A combination of controlled vocabulary and free-text terms were used, including: "education and movies," "cinematic pedagogy," "films in teaching," "student engagement and films," "visual learning," and "film-based instruction." The search was limited to peer-reviewed publications in English from the last two decades (2004–2024) to ensure contemporary relevance.

Inclusion criteria encompassed empirical studies published in peer-reviewed journals, academic books, and conference proceedings that explicitly addressed the use of movies in formal educational settings, particularly within elementary, secondary, or higher education. Studies were selected if they provided evidence of pedagogical application and assessed learning-related outcomes. Exclusion criteria involved opinion pieces, editorials, non-English publications, inaccessible full-text documents, and research not directly relevant to the integration of movies in educational contexts.

The study selection process adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure methodological rigor and transparency. An initial pool of 138 studies was identified through database searches. After the removal of duplicates and initial screening based on titles and abstracts, 56 studies were shortlisted for full-text review. Following a comprehensive evaluation against the inclusion criteria, 32 studies were deemed eligible and included in the final synthesis.

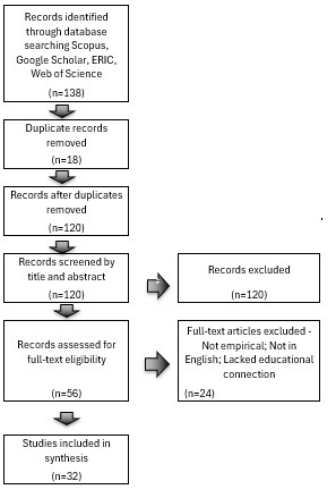

Figure 1: *PRISMA Flow Diagram*

The PRISMA flow diagram above outlines the systematic process used to identify, screen, and select studies for inclusion in the literature review. A total of 138 records were initially retrieved through searches in databases such as Scopus, Google Scholar, ERIC, and Web of Science using predefined keywords related to cinematic pedagogy and educational outcomes. After removing 18 duplicate records, 120 unique records remained for screening. These were evaluated based on their titles and abstracts, resulting in the exclusion of 64 studies that were irrelevant or did not meet the inclusion criteria. The remaining 56 studies underwent full-text review. Following a detailed eligibility assessment, 24 studies were excluded due to reasons such as being non-empirical, not published in English, or lacking a direct connection to the use of movies in education. Ultimately, 32 studies met all the inclusion criteria and were incorporated into the final synthesis. This transparent and systematic selection process ensured the review's rigor, minimized bias, and allowed for a focused examination of how movies are used as pedagogical tools in various educational settings.

Data extraction was conducted using a structured Excel template to ensure consistency. Extracted variables included study design, sample size, educational level, disciplinary context, specific films used, instructional strategies employed, reported benefits, observed challenges, and overall learning outcomes. While a formal risk of bias or quality assessment tool was not employed, studies were appraised for methodological clarity, alignment of research objectives and outcomes, and the robustness of their analytical frameworks.

Thematic analysis was undertaken to identify and categorize recurring patterns, themes, and gaps across the included studies. The analysis focused on the pedagogical impact

of movies in relation to student motivation, cognitive engagement, content mastery, and critical thinking development. Findings were synthesized narratively to offer a coherent interpretation of the existing literature, highlighting dominant trends, theoretical insights, and areas requiring further empirical exploration. This approach enabled the development of a nuanced understanding of the pedagogical potential and limitations of cinematic media within educational environments.

Analysis and Discussion

The analysis is based on the systematic literature review and the findings drawn therein.

Keyword Analysis

Figure 2: ***Keyword analysis***

Source: Made for the purpose of the study

The keyword analysis (Figure 2) reveals diverse themes and approaches that are linking movies to educational contexts. Recurring keywords included "character education," "English movies," and "academic motivation," showcasing the use of films to enhance values-based learning, language skills, and teacher preparation. Several studies emphasize the pedagogical benefits of integrating movies, such as "Teaching English through movies" and "Learning through emotions," highlighting their potential to foster empathy, critical thinking, and affective education. The focus on "medical education," "cinema and education," underlines the interdisciplinary application of movies, particularly in professional and emotional training. Additionally, terms like "animation movie," "student-generated animation," and "science learning" illustrate innovative uses of animation in promoting active learning. Keywords like "systematic literature review," "bibliometric analysis," and "ICT" indicate a growing interest in evaluating the effectiveness and perceptions of movies in teaching.

Yearly Publication Analysis

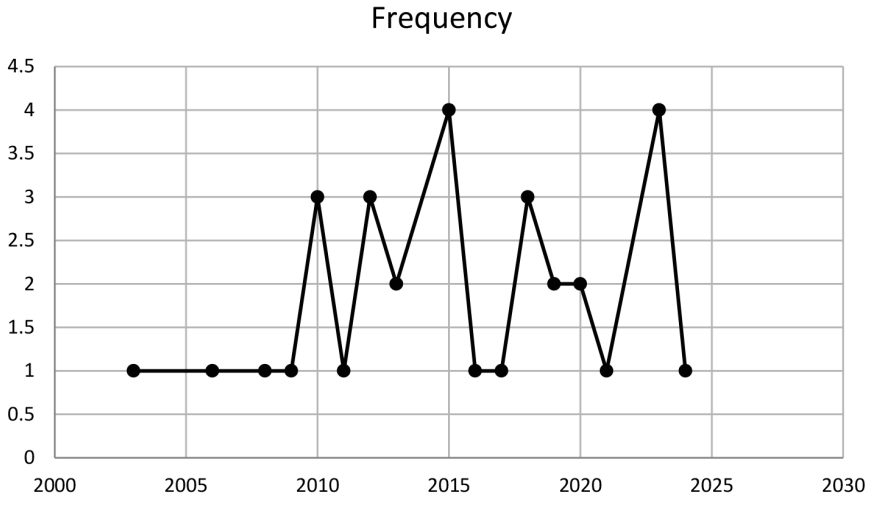

Figure 3: ***Yearly Publication Analysis***

Source: Made for the purpose of the study

The analysis of the publication frequency over the years reveals interesting trends in the research focus on using movies in education (Figure 3). The earliest publications in the dataset begin in 2003, with a single study, indicating that the use of movies as an educational tool was in its nascent stages at that time. A gradual increase is observed with sporadic publications in 2006, 2008, and 2009, each contributing one study, reflecting steady but limited interest during this period. The 2010s mark a noticeable rise in publication frequency, beginning in 2010, with three publications, suggesting growing academic interest in the subject. This momentum continues in 2012 and 2015, each with three and four publications, respectively, indicating a peak in research output. The highest frequency in 2015 reflects a period of heightened scholarly engagement with this topic. Between 2013 and 2018, the frequency shows some fluctuations, with years like 2013 (2 publications), 2018 (3 publications), and a few quieter years like 2016 and 2017, each with only one publication. This suggests a phase of steady but uneven exploration, where interest was maintained but not consistent. In the later years, 2019 and 2020 saw moderate publication frequencies of 2 each, while 2021 dropped to just one publication. However, 2023 sees a resurgence with four publications, matching the peak of 2015, possibly reflecting renewed academic focus or evolving interest in the role of movies in education, especially as digital and remote learning became more prevalent post-pandemic. Interestingly, 2024, though incomplete, already shows one publication, which might indicate continued interest in the area. The growing interest in recent years suggests the continued relevance of this research area, possibly driven by advancements in digital media and shifts in pedagogical approaches.

Thematic Analysis

Table 1: *Thematic Analysis*

Key Theme	Description	Examples from Titles
Character Education and Values	Using movies to teach moral values and character development.	"Character education values in animation movie of Nussa and Rarra," "Analysis of Educational Messages in The Lion King Movie: Perspectives on Character Education."
Language Learning and English Education	Utilizing movies to improve English language skills, vocabulary, and writing.	"What is your favorite movie?: a strategy of English Education students to improve English vocabulary," "Teaching English through English movie: Advantages and disadvantages."
Medical Education and Professionalism	Application of movies to teach empathy, professionalism, and health-related topics in medical education.	"Cinemeducation: A pilot student project using movies to help students learn medical professionalism," "The current landscape of television and movies in medical education."
Pedagogical Innovation and Reflection	Using movies as a tool to enhance teaching skills, foster reflection, and improve pedagogy.	"Education through Movies: Improving teaching skills and fostering reflection among students and teachers," "Using movie clips to promote reflective practice."
Interdisciplinary Learning	Linking movies with other disciplines such as literature, ethics, and science education.	"The Book was Better than the Movie: A study of the relationship between literature and film in education," "Context-based learning: A role for cinema in science education."
Empathy and Affective Education	Movies as a medium to teach emotional understanding and empathy.	"Using movie clips to foster learners' reflection: improving education in the affective domain," "Teaching empathy through movies: reaching Learners' affective domain."

Cultural and Societal Perspectives	Examining movies to understand cultural, political, and societal dynamics in education.	"Movie lessons: Cultural politics and the visible practices of schooling," "Critical race talk in teacher education through movie analysis: From 'Stand and Deliver' to 'Freedom Writers.'"

Source: Made for the purpose of the study

A thematic analysis of the research papers under study was undertaken. The summary of which is presented above (Table 1). The table reveals several recurring themes in the use of movies as educational tools across diverse domains. A prominent theme is character education and values, where movies are utilized to teach moral lessons and develop character traits. Another significant theme is language learning and English education, where movies are employed to enhance English language skills, vocabulary, and writing proficiency. Medical education and professionalism also emerge as key areas, with movies being used to teach empathy, professionalism, and health-related topics. Moreover, it was observed that pedagogical innovation and reflection is a recurring themes, showcasing how movies are leveraged to improve teaching skills and encourage reflective practices among educators. The interdisciplinary potential of movies is highlighted in the theme of interdisciplinary learning, where films are used to connect education with literature, science, and ethics. Movies also play a crucial role in teaching empathy and affective education, as seen in studies like "*Using movie clips to foster learners' reflection: improving education in the affective domain.*" This highlights the capacity of films to enhance emotional intelligence and understanding among learners. Lastly, the table highlights the exploration of cultural and societal perspectives through movies, examining how films address cultural politics and social issues in education.

Focus Area of Research Studies Based on Educational Level

Table 2: ***Research Focus Areas Based on Educational Level***

Focus Area	Frequency
Higher Education	11
School	5
Teachers	1
All	4

Source: Made for the purpose of the study

Table 2 highlights the frequency of research focus areas based on the educational level. Higher Education emerges as the most frequently studied area, with 11 mentions, indicating a strong research emphasis on this domain. School follows with 5 mentions, suggesting a moderate level of interest in school-level education. The category Teachers

appears only once, reflecting minimal direct focus on educators. Additionally, all, representing generalized or inclusive studies, have 4 mentions. This distribution suggests a predominant interest in higher education research compared to other focus areas, highlighting its perceived importance or relevance in the research context.

Focus Areas by Type of Movies

Table 3: ***Types of Movies Used in Research***

Focus Area	Movies/Movies in Focus	Frequency	In-Text Citations
Animation Movies	Nussa and Rarra	1	Astuti *et al.*, 2019
Education-Themed Movies	Hickhi, Life of Pi, Miracle Worker, Patch Adams, Awakenings, Lorenzo's Oil, The Death of Mr. Lazarescu, The Lion King	8	Batubara *et al.*, 2021; Suryati, 2018; Fatmawati, 2015; Lumlertgul *et al.*, 2009; Lolang *et al.*, 2023
General (No Specific Movies)	General references to multiple or unspecified movies, including advantages, critical analysis, and pedagogical innovations in various domains. Multiple unspecified movie titles cited for promoting reflection, ethics, and teaching empathy.	27	Simamora & Oktaviani, 2020; Kontas, 2016; Pimentel, 2010; Law *et al.*, 2015; Karlsson, 2010, and Sánchez-Auñón *et al.*, 2023 Blasco *et al.*, 2012, 2015; Blasco *et al.*, 2018
Popular Entertainment Movies	Endgame, Frozen Fever, Validation, Alive in Joburg	1	Sari & Sugandi, 2015

Source: Made for the purpose of the study

Table 3 that movies have emerged as versatile and impactful tools in education, offering opportunities for engagement, reflection, and skill development across various disciplines. The above table analyses the types of movies used in research. Five major focus areas have emerged from the analysis. They are Animation Movies, Education-Themed Movies, General (No Specific Movies), and Popular Entertainment Movies. Animation

movies are also frequently analyzed for their role in character education, particularly in instilling moral values and fostering emotional intelligence among younger audiences (Astuti *et al.*, 2019). These films serve as a creative medium for embedding life lessons within visually appealing narratives, making them effective for early learners.

Education-themed movies, such as Hickhi, Life of Pi, and The Lion King, have gained attention for their ability to teach critical thinking, ethics, and resilience. These movies are often integrated into teacher education programs and psychology courses to foster empathy and reflective learning among students (Batubara *et al.*, 2021; Fatmawati, 2015; Suryati, 2018). Their narratives encourage viewers to engage with complex social issues and develop emotional awareness.

It was also observed that many of the researchers have done a general analysis of movies, without a focus on specific titles. Their analysis has mainly explored how movies can support teaching in fields such as English education, medical ethics, and management. For example, studies highlight how films promote reflective practices and improve professional skills in the affective and cognitive domains (Simamora & Oktaviani, 2020; Kontas, 2016). This category emphasizes the adaptability of movies as pedagogical tools across diverse educational settings. The analysis highlights how movies, whether animated, theme-specific, or used generally, contribute to innovative teaching practices. They facilitate experiential learning, foster emotional intelligence, and offer creative ways to address complex educational goals. This can be a crucial reason for the growing recognition of movies as a transformative medium in modern pedagogy.

Key Points Mentioned in Studies

Table 4: ***Key Points of the Studies***

Astuti, R. W., Waluyo, H. J., & Rohmadi, M. (2019)	Identified five character education values: religious, curiosity, communicative, social care, and responsibility.
Blasco, P. G., Moreto, G., Roncoletta, A. F., Levites, M. R., & Janaudis, M. A. (2006)	Cinema is effective for teaching by being familiar and non-threatening. Movies evoke emotions, present issues clearly, and aid reflection.
Simamora, M. W. B., & Oktaviani, L. (2020)	Watching English movies helps students enhance their vocabulary and learn English effectively.
Kontas, H. (2016)	Education-themed movies positively impact academic motivation and attitudes toward the teaching profession.

Blasco, P. G., Moreto, G., Blasco, M. G., Levites, M. R., & Janaudis, M. A. (2015)	Movies foster innovative teaching, improve engagement, and support diverse learning styles through interdisciplinary learning.
Pimentel, C. (2010)	Encourages teacher educators to address power and equity rather than only focusing on diversity in multicultural education.
Law, M., Kwong, W., Friesen, F., Veinot, P., & Ng, S. L. (2015)	Movies in medical education enhance emotional awareness, empathy, memory retention, and discussion.
Batubara, A. K. S., *et al.* (2021)	Identified nine educational values in the movie *Hichki*: perseverance, self-confidence, politeness, love, forgiveness, optimism, responsibility, and hard work.
Suryati, S. D. (2018)	Values in *Life of Pi*: perseverance, gratitude, religiosity, peace, loyalty, diligence, respect, and selflessness.
Fatmawati, S. (2015)	Teachers should select appropriate movies containing educational values, and students should focus on the content for better learning.
Wager, J., *et al.* (2018)	Short educational movies can enhance chronic pain health literacy, suggesting long-term potential for behavior change.
Karlsson, S. G. (2010)	Explores the interplay between literature and film, emphasizing the potential of both mediums for education.
Hayes, M. T. (2003)	Integrating video production in teacher education enhances creativity and technological skills among educators.
Lumlertgul, N., *et al.* (2009)	*Cinemeducation* helped medical students learn ethical issues like informed consent, patient management, and organ transplantation.

Lolang, E., *et al.* (2023)	*The Lion King* highlights educational messages on responsibility, leadership, respect for nature, and interconnectedness of life.
Saltmarsh, D. (2011)	Movies reflect cultural politics and the visible practices of schooling, offering insights for educational frameworks.
Safitri, D., *et al.* (2023)	Movies improve students' writing skills and instill anti-drug character values.
Blasco, P. G., & Moreto, G. (2012)	Movies help teach empathy by reaching learners' affective domains, especially in medical education.
Lancaster, K. (2013)	Highlights techniques for achieving cinematic quality in education, focusing on DSLR video production.
Bosse, I. K., & Pola, A. (2017)	Discussed solutions for applying movies and multimedia in inclusive learning in Germany.
Urbano, L. D., & Urbano, L. C. (2008)	The *Movie Classroom* approach enhances learning through collaborative film production.
Sari, A., & Sugandi, B. (2015)	Teachers should use short English movies and guide students' imagination and understanding effectively.
Arroio, A. (2010)	Movies provide social contexts for science education, emphasizing socio-scientific discussions.
Blasco, P. G., Moreto, G., & Pessini, L. (2018)	Movie clips encourage reflective practice and enhance the teaching of ethics creatively.
Sánchez-Auñón, E., *et al.* (2023)	Using cinema in language teaching helps foster engagement and provides contextual language learning opportunities.

Karlsson, S. G. (2010).	"This study discusses how literature and film intersect in education, highlighting the differences between the two mediums and how literature often offers a more detailed and nuanced narrative, which movies may simplify for visual impact."
Hayes, M. T. (2003).	"This study emphasizes the importance of integrating video production in teacher education. It highlights how making movies allows students to engage with the material creatively, deepening their understanding and reflection."
Lumlertgul, N., Kijpaisalratana, N., Pityaratstian, N., & Wangsaturaka, D. (2009).	"Medical students learned key ethical issues such as doctor-patient relationships, informed consent, clinical trials, genetic disorders, and organ transplantation through movies, which enriched their understanding of medical professionalism."
Lolang, E., Rais, R., Oualeng, A., & Prayitno, M. A. (2023).	"The Lion King conveys educational messages on responsibility, leadership, respect for nature, and the interconnectedness of all living things, which can be used to enhance character education and environmental awareness in students."
Saltmarsh, D. (2011).	"This study explores how movies can serve as a tool for teaching cultural politics, discussing how educational institutions use film to address social and cultural issues and engage students in critical reflection."
Safitri, D., Rosita, N., & Arni, R. (2023).	"Using movies in EFL classes helps students improve their writing skills and also builds their character, especially fostering anti-drug attitudes."
Blasco, P. G., & Moreto, G. (2012).	"Movies can be effective tools for teaching empathy, as they engage learners emotionally and help them develop a deeper understanding of patient care and ethical decision-making in medicine."

Lancaster, K. (2013).	"This book provides insights on how to achieve a cinematic quality in video production, offering practical techniques and tips for filmmakers and educators to create professional-looking videos using DSLR cameras."
Bosse, I. K., & Pola, A. (2017).	"The study discusses how multimedia, including movies, can be used to support inclusive learning. It highlights challenges in adapting content for diverse student needs and suggests solutions for effective integration in the classroom."
Urbano, L. D., & Urbano, L. C. (2008).	"This study explores how students can learn by producing their own movies, providing a hands-on, interactive learning experience that enhances critical thinking, creativity, and teamwork in geoscience education."
Sari, A., & Sugandi, B. (2015).	"The study highlights the advantages and disadvantages of using English-language movies in teaching. Advantages include increased student engagement and vocabulary expansion, while disadvantages involve potential distractions and the need for careful selection of films."
Arroio, A. (2010).	"Cinema can be used in science education to present social issues and engage students in discussions about socio-scientific problems. Movies create a context for learning that involves social interaction and ethical considerations."
Blasco, P. G., Moreto, G., & Pessini, L. (2018).	"The study emphasizes how movie clips can be used to foster reflection on ethical dilemmas, helping students connect theory with practice and engage critically with moral issues in various fields."
Sánchez-Auñón, E., Férez-Mora, P. A., & Monroy-Hernández, F. (2023).	"Films in EFL teaching offer multiple benefits, including improving linguistic skills, fostering intercultural understanding, and enhancing motivation to learn the language."

Source: Made for the purpose of the study

Categorization of Key Points on Using Movies as a Pedagogical Tool and Skill Development Method

Table 5: *Categorization of Key Points on Using Movies as a Pedagogical Tool and Skill Development Method*

Theme	Key Points
1. Using Movies for Skill Development	- **Creative and Critical Thinking**: Movies like "The Lion King" and "The Book was Better than the Movie" encourage critical thinking and creativity in students.
	- **Writing and Communication Skills**: Movies in EFL classes help improve writing and communication skills while building character (Safitri *et al.*, 2023).
	- **Empathy and Ethical Decision-making**: Movies help foster empathy and teach ethical decision-making (Blasco & Pola, 2012; Lumlertgul *et al.*, 2009).
2. Movies as a Pedagogical Tool	- **Engagement and Motivation**: Movies enhance student engagement and motivation, making learning more interactive (Blasco & Pessini, 2018).
	- **Multimedia and Inclusive Learning**: Movies support inclusive education and diverse learning experiences (Bosse & Pola, 2017; Urbano & Urbano, 2008).
	- **Visual Learning through Movie Production**: Video production aids students in reflecting creatively on their learning (Hayes, 2003).
3. Promoting Reflection and Ethical Awareness	- **Ethical Reflection through Movies**: Movies stimulate ethical reflection, helping students engage with complex moral issues (Blasco, Pola, & Pessini, 2012).
	- **Character Education**: Movies like "The Lion King" teach values such as responsibility, leadership, and respect (Lumlertgul *et al.*, 2009).

4. Movies in Specific Disciplines	- **Science and Social Learning**: Movies create context for learning in science education by presenting socio-scientific issues (Arroio, 2010).
	- **Medical Education**: Movies help medical students learn professionalism, empathy, and patient care (Lumlertgul *et al.*, 2009; Blasco & Pola, 2012).
5. Technological Integration in Education	- **Techniques in Video Production**: Video production techniques, like DSLR cameras, can be used to create professional videos for classroom learning (Lancaster, 2013).
	- **Innovative Learning Models**: Movies are integrated into innovative learning models like MovieClassroom (Urbano & Urbano, 2008).
6. Language and Cultural Learning	- **Learning English through Movies**: English-language movies in EFL classrooms expand vocabulary and foster language learning (Safitri *et al.*, 2015).
	- **Cultural Politics and Social Issues**: Movies teach cultural politics and allow reflection on social issues (Saltmarsh, 2011).
7. Movies in Social and Character Education	- **Character and Environmental Education**: Movies like "The Lion King" integrate environmental conservation with character education (Lumlertgul *et al.*, 2009).
	- **Teaching Through Movie Clips**: Movie clips promote reflective practices related to character education and social issues (Blasco & Pessini, 2018).

Source: Made for the purpose of the study

Table 5 categorizes key focus areas for which movies are used. The table offers insights into the diverse ways movies can enhance learning.

Using Movies for Skill Development emerged as a prominent theme. It was observed that movies like *The Lion King* and *The Book was Better than the Movie* encourage students to engage in creative and critical thinking. Their use indicates that these movies may prompt learners to analyze, critique, and create, thereby fostering essential skills that are crucial in educational settings. Moreover, movies in language classrooms contribute to improving both writing and communication skills. By engaging with dialogue, plot, and character development, students enhance their ability to express ideas effectively in both written and oral forms. Another aspect under this theme is the development of empathy and ethical decision-making. Ethical dilemmas presented in movies allow students to reflect on their personal decision-making processes, promoting self-awareness and empathy for diverse perspectives.

Movies as Case Studies for Real-Life Learning emerges as another significant theme. Movies often depict real-world scenarios, offering opportunities for case study discussions that encourage deeper learning. These films can simulate complex business, leadership, and interpersonal dynamics, making them valuable tools for understanding real-life challenges. Furthermore, movies serve as an introduction to various fields of study, allowing students to explore areas like history, psychology, and social sciences in an engaging, narrative-driven way. This aligns with the concept of active learning, where students are not only passive recipients of information but actively engage with content through the stories presented on screen.

Movies for Emotional and Social Learning also play a crucial role. Many films evoke strong emotional responses, allowing students to delve into social and emotional intelligence. By analyzing characters and their decisions, students can develop emotional awareness and empathy for others, learning to navigate complex social situations. Movies can also enhance social interaction, providing a medium through which students can connect and discuss important societal issues. This helps in building their ability to collaborate, communicate, and appreciate diverse viewpoints, crucial skills in both personal and professional settings.

Lastly, Movies for Motivation and Engagement stand out as an essential educational tool. They have the power to inspire and engage students, creating a connection to the subject matter in a way that traditional lectures might not. Films like *Dead Poets Society* and *The Pursuit of Happyness* inspire students to reflect on their own aspirations, encouraging perseverance, motivation, and resilience. These motivational narratives resonate with students, pushing them to think critically about their goals and dreams. The emotional connection to the characters' journeys can inspire similar determination in students' academic and personal lives.

Benefits of Using Movies in Education and Training

Table 6: *Benefits of Using Movies in Education and Training*

Category	Benefits	Citations
Enhancing Cognitive Skills	- Vocabulary building and language learning.	Simamora & Oktaviani (2020); Sari & Sugandi (2015); Sánchez-Auñón *et al.* (2023).
	- Science and knowledge construction through audiovisual tools.	Arroio (2010).
	- Improved listening, speaking, pronunciation, and academic motivation.	Sari & Sugandi (2015); Kontas (2016).
Fostering Emotional Engagement	- Emotional intensity and engagement through movie clips.	Blasco *et al.* (2006).
	- Promoting empathy and reflective practice.	Blasco & Moreto (2012); Blasco *et al.* (2018).
Encouraging Personal and Professional Growth	- Reflecting on beliefs, values, and experiences for professional development.	Blasco *et al.* (2015).
	- Supporting character education, values and ethical understanding.	Astuti *et al.* (2019); Lolang *et al.* (2023); Blasco *et al.* (2018).
Facilitating Learning through Entertainment	- Using movies as a medium for education, inspiration, and entertainment.	Suryati (2018); Fatmawati (2015).
	- Keeping students interested and engaged in the learning process.	Sari & Sugandi (2015).
Improving Professional Skills	- Supporting case-based learning for professionalism in medical education.	Lumlertgul *et al.* (2009); Law *et al.* (2015).

Enhancing Pedagogical Innovation	- Creating an inclusive learning environment through multimedia tools.	Bosse & Pola (2017).
	- Integrating paradigms with pedagogy for better management education.	Kankal *et al.* (2023).
Promoting Critical Thinking	- Encouraging critical race talk and cultural understanding through movie analysis.	Pimentel (2010); Saltmarsh (2011).
Fostering Creativity	- Promoting creativity and active learning through movie production.	Hayes (2003); Urbano & Urbano (2008).
Increasing Health Literacy	- Promoting health literacy and awareness through educational movies.	Wager *et al.* (2018).

Source: Made for the purpose of the study

Table 6 shows that the integration of movies into education and training provides a multifaceted approach to enhance learning experiences across various domains. It was observed that movies play an important role in cognitive development by improving vocabulary, language skills, and academic motivation. Additionally, they promote emotional engagement, which allows learners to connect on a deeper level through empathy and reflective practice. As such, by leveraging the entertainment value of movies, educators can maintain learner interest, making the process enjoyable and inspiring. Movies can also contribute significantly to professional growth, supporting character education and instilling values that are critical for professional and ethical development. Furthermore, their inclusion in teaching strategies reflects pedagogical innovation, creating inclusive learning environments and promoting active participation through multimedia tools. The analytical nature of movies encourages critical thinking, particularly when exploring cultural, ethical, and social issues, while also stimulating creativity through activities like film production and interpretation. In professional training contexts, movies aid in the development of specialized skills, such as professionalism in medical education and management training. They also serve as effective tools for promoting health literacy, enhancing awareness of complex health-related issues through engaging narratives. Overall, the use of movies in education bridges the gap between traditional and modern pedagogical methods, catering to diverse learning needs while fostering a holistic development of cognitive, emotional, and professional competencies.

Challenges of Integrating Movies as a Teaching Pedagogy

Table 7: ***Challenges of Integrating Movies as a Teaching Pedagogy***

Citation	Challenge
Astuti, *et al.* (2019)	Ensuring that the movies chosen align with research objectives, educational context, and are appropriate for the target audience
Blasco, *et al.* (2006), Lumlertgul, *et al.* (2009)	The integration of movies requires meticulous planning, collaboration among educators and stakeholders, and ongoing professional development to ensure maximum benefits. Also, as a tool for learning, it demands extensive preparation and innovative approaches to maintain educational efficacy.
Blasco, P. G., & Moreto, G. (2012)	Teaching empathy through movies, especially in medical education, is challenging due to difficulties in teaching and measuring empathy.
Sari, A., & Sugandi, B. (2015)	While movies have advantages and drawbacks, they include potential over-reliance on entertainment rather than focused learning outcomes.
Sánchez-Auñón, *et al.*. (2023)	Selecting appropriate movies for teaching a foreign language involves ensuring cultural relevance and alignment with pedagogical goals.
Kankal, *et al.* (2023)	Integrating films in management education requires innovative pedagogical frameworks and adapting them to the dynamic learning environment of higher education.
Maratou, V. *et al.* (2023)	Designing inclusive learning experiences using movies necessitates balancing content engagement with learning objectives, which can be time-consuming and resource-intensive.
Billingsley, *et al.* (2019)	Challenges include aligning immersive movie experiences with educational outcomes while ensuring accessibility for all learners.
Hayes, M. T. (2003)	Incorporating video production technologies into curricula demands significant technical skills, financial resources, and time investment for educators and students alike.
Oh, *et al.* (2013)	Using movies in nursing education requires integrating film effectively into pre-licensure programs while addressing potential limitations in reflective practice.

Source: Made for the purpose of the study

Table 7 highlights several challenges of integrating movies as a teaching pedagogy, based on insights from the studies under review. The basic challenge has been identified is in selecting movies that align with the specific educational objectives and context. For instance, as highlighted by Astuti *et al.* (2019) and Blasco *et al.* (2006), educators must carefully evaluate whether a movie is suitable for the intended audience and curriculum. Blasco *et al.* (2015) stress the need for professional development to maximize the educational potential of movies. Another challenge, as identified, lies in addressing affective and cognitive domains. Teaching abstract and emotional concepts like empathy, as noted by Blasco and Moreto (2012), can be difficult to achieve and measure through movies. Pimentel (2010) stated that promoting critical reflection on cultural and social issues through movie analysis requires skilled facilitation and careful planning. Moreover, integrating movies in a way that fosters inclusivity and accommodates diverse learning needs presents logistical challenges, as highlighted by Bosse and Pola (2017). In science and medical education, for instance, the content must also align with professional standards while engaging students effectively, as noted by Arroio (2010) and Lumlertgul *et al.* (2009). Lastly, the practical aspects of movie integration, such as selecting appropriate technology, ensuring access to resources, and balancing entertainment with education, are noted by Sari and Sugandi (2015) and Lancaster (2013). These challenges collectively emphasize the need for a well-structured, reflective, and inclusive approach to using movies in teaching, requiring continuous research and innovation in pedagogy.

Conclusion and Future Scope

It can be said that the analysis demonstrates that movies are versatile pedagogical tools capable of fostering a wide range of skills, from critical thinking to emotional intelligence. By incorporating movies into the curriculum, educators can engage students more effectively, providing a dynamic and immersive learning experience. Research studies propose diverse methods for integrating movies into teaching pedagogy, highlighting their potential to enhance learning and engagement. Many studies emphasize using movies to foster critical thinking, reflection, and emotional engagement. For instance, Blasco *et al.* (2006) and Blasco *et al.* (2015) explored the use of movie clips to encourage reflection and improve teaching and learning skills in both students and educators. Movies are also employed to instill character education values, as seen in studies by Astuti *et al.* (2019) and Lolang *et al.* (2023), where content analysis and educational theories were applied to analyze character and environmental conservation themes in films. Other studies focus on language learning, like Simamora and Oktaviani (2020), who used movies to enhance English vocabulary, and Safitri *et al.* (2023), who implemented quasi-experimental methods to improve writing skills in an English as a Foreign Language (EFL) context. Movies also serve as tools for promoting academic motivation and understanding professional values, as illustrated by Kontas (2016) and Lumlertgul *et al.* (2009), where scales and pilot projects were used to measure their impact on attitudes and professionalism. Additionally, studies like those by Suryati (2018) and Fatmawati (2015)

used qualitative approaches such as interviews and observation to analyze educational values in films. The versatility of movies in addressing diverse educational goals makes them a dynamic medium for enhancing pedagogy across disciplines.

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Social Integration and Educational Support of a Child with Autism: A Case Study

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Abstract

This exploratory single-case study examines the social integration, educational support, and environmental influences affecting a preschool child with autism (Child A) in Vadodara City. The study focuses on three key aspects: Child A's social interactions, the educational support provided by the school, and the role of the preschool environment in shaping his learning experiences. Findings indicate that, through targeted instructional methods and reinforcement strategies, Child A developed meaningful social behaviors such as greeting others, responding to gestures, using simple phrases and echolalia, and participating in peer activities like high-fives. Despite these gains, challenges persisted in peer engagement, sensory sensitivities, and behavioral regulation. The presence of a shadow teacher was instrumental in building trust and supporting academic engagement. Additionally, the coordinated efforts of educators, parents, and therapists—along with sensory and motor-based interventions—contributed significantly to Child A's progress. The study underscores the importance of individualized, inclusive teaching strategies and recommends further longitudinal research to assess intervention outcomes, teacher training effectiveness, and the role of peer influence in mainstreaming children with autism.

Keywords: Autism Spectrum Disorder, Inclusive Education, Preschool Intervention, Shadow Teacher, Sensory Integration, Social Communication, Behavioral Support, Peer Interaction

Introduction

Disabilities in social interaction and communication are symptoms of ASD, a developmental disease. But enhancing development outcomes is greatly aided by early

intervention between the ages of one and three. Albeit inclusive education, children with ASD mostly lack attention, are repetitive and have a social problem, which makes them expelled in mainstream classrooms.

Inclusive learning may improve academic and social development of children with ASD, but there are challenges associated with learning such as peer interaction and social imitation. India Sarva Shiksha Abhiyan (SSA) advances the idea of universal elementary education and the focus on inclusion is made, although its implementation is not complete. This article investigates the elements that help or hinder the integration of children with ASD in regular schools in Vadodara.

Policy Context

Although international documents on the topic of inclusive education such as the Salamanca Statement (UNESCO, 1994), the UNCRPD (UN, 2007), and General Comment No. 4 (UNCRPD, 2016) offer a solid foundation to inclusive education, the key issue is their realisation on a national level. Bills such as the National Education Policy (2020), the Rights of Persons with Disabilities Act (2016), the Right to Education Act (2009), and the Persons with Disabilities Act (1995) show that inclusion is codified at the legal level in India. However, it may be challenging to implement, and this is especially true for elementary-aged children who are on the autism spectrum.

They can take a kind of blanket disability perspective in their policies without consideration of the specific neurodevelopmental, sensory, and behavioral needs of autism. To curb this, India needs to develop an elaborate policy of education that responds to autism so as to be actionable; this is inclusive of: (a) screening and early intervention in superannuated institutions and mandatory autism-specific training of preschool educators and Anganwadi workers; (b) hire trained shadow teachers; and (c) Individualized Education Plans (IEPs) to each child with autism in normal schools.

Integrated services depend on a coordinated effort of the Ministries of Education, Women and Child Development and Health and Family Welfare. It must be made through state-level audits, sensitization of the populace and well-endowed district inclusion cells. Autism-specific inclusion policies have central significance in realizing policy commitments into efficient practice in terms of SDG 4 (UN, 2015) and Article 24 of CRPD (UN, 2007).

Review of Literature

The study is based on a review of over 20 empirical studies (1985–2021) from global and Indian contexts. The literature was thematically grouped into five key areas related to the inclusion of children with ASD in early education:

1. Peer-mediated and social skills interventions
2. Reinforcement and motivation-based strategies

3. Behavioral and communication-focused therapies
4. Inclusive classroom practices and teacher preparedness
5. Indian models and policy implementation challenges

Foundational works by Wolery *et al.* (1985) and Koegel *et al.* (1987, 1992, 1998) showed how reinforcement, natural language programming, and child-preferred themes enhanced communication and reduced maladaptive behaviors in preschoolers with ASD. Research by Goldstein *et al.* (1992, 2001) found that social and communication skills might be improved via the use of peer training, video modeling, and social tales. Structured play, visual aids, and scaffolding were emphasized as valuable in inclusive classrooms by Donaldson *et al.* (2008) and Halstadtrø *et al.* (2003). Methodologically, most studies used single-case, quasi-experimental, or repeated-measures designs, often with observational or video data. More recent research (e.g., Goodall, 2018; Hastings *et al.*, 2021) has adopted qualitative approaches to explore the sensory and emotional experiences of autistic children in mainstream settings.

In India, studies by Mukkiri *et al.* (2021) and Karanth and Chandhok (2013) identified challenges such as poor teacher training, lack of sensory-friendly infrastructure, and absence of trained shadow teachers. While early intervention models like Communication DEALL show developmental promise, few Indian studies focus specifically on inclusive preschool settings.

This literature review shaped the current study, underscoring the importance of early, structured, and individualized support. It also highlighted the need to examine how young autistic children experience inclusion in Indian classrooms—an area with limited existing research.

Identified Research Gaps

The reviewed studies reveal several research gaps. Wolery *et al.* (1985) found short-term increases in correct responses when stereotypic behavior was used as reinforcement for autistic children; however, its long-term effects remain unclear. The present study addresses this gap by examining the sustained outcomes of using stereotypic behavior as reinforcement.

Koegel *et al.* (1987) and Koegel *et al.* (1998) used obsession themes in social games to enhance interaction, but it is uncertain how well these gains generalize to unstructured settings like playgrounds or community environments. This study explores the transferability of such gains to more naturalistic contexts.

Koegel *et al.* (1988) compared two reinforcement conditions for promoting speech in nonverbal autistic children: one that shaped motor approximations of speech and

another "motivation" condition that reinforced speech attempts without shaping. To explore a broader variety of reinforcement strategies, further study is necessary. The current research investigates the long-term impact of various reinforcement techniques on speech development.

These gaps in existing literature reinforce the relevance of this study and its potential contribution to more inclusive and contextually appropriate practices for young children with autism in early education settings.

Objectives of the Study

1. To examine the social interaction of a child with autism within the preschool environment.
2. To study the influence of educational support provided by the school to a child with autism.
3. To investigate the impact of the school environment on the social integration and school experiences of a child with autism.

Context of the Study

The research took place in a pre-university setting in the culturally and educationally rich city of Vadodara, Gujarat. The school serves children aged 3 to 6 and offers a supportive environment with flexible teaching practices. Its student body reflects a mix of cultural, linguistic, and socio-economic backgrounds.

The focus of the study was a child with ASD in a mainstream classroom. It explored the child's social and academic experiences, the support provided by teachers, parents, and a shadow teacher, and identified areas to strengthen inclusive practices.

Research Questions

1. What are the social challenges faced by a child with autism?
2. What educational support does a child with autism require at school?
3. How does the school environment impact the development of a child with autism?
4. How is the emotional well-being of a child with autism affected?

Theoretical Framework

This case study draws on a multidisciplinary theoretical framework to understand the nuanced experiences of a preschool child with autism (Child A) placed in a mainstream educational setting. The primary lens applied is Bronfenbrenner's Ecological Systems Theory (1979), which views child development as the result of dynamic interactions among various environmental systems. At the microsystem level, Child A's learning

and behavior are shaped directly by his interactions with the shadow teacher, peers, and classroom environment. Broader influences from the exosystem and macrosystem—including institutional policies, community norms, and societal perceptions of autism—also play a pivotal role in shaping inclusive practices within the preschool in Vadodara.

Complementing this ecological approach is Vygotsky's Sociocultural Theory (1978), which emphasizes that cognitive development is driven by social interaction and mediated learning. The concept of the Zone of Proximal Development (ZPD) underscores the importance of adult or peer guidance in enabling children to perform tasks they could not manage independently. In this context, the shadow teacher served as a critical mediator, supporting Child A's engagement in classroom activities that would have otherwise been inaccessible to him.

Further, Bandura's Social Learning Theory (1977) highlights the role of observation, imitation, and reinforcement in behavioral development. Child A's behavioral progress—facilitated by peer modeling, verbal encouragement, and sensory-based rewards—reflects Bandura's premise that children learn not only through direct experience but also by observing others and responding to social reinforcement.

The theoretical framework is also grounded in the Social Model of Disability (Oliver, 1990), which shifts the focus from an individual's impairments to the structural and attitudinal barriers in the environment. Inclusion, therefore, extends beyond physical access and requires meaningful changes in pedagogy, classroom organization, and institutional mindset. This perspective aligns with both national policies such as the Right to Education Act (Government of India, 2009) and global frameworks like the United Nations Convention on the Rights of Persons with Disabilities (UN, 2007), advocating for equitable and inclusive educational opportunities for all learners, regardless of ability.

Social Integration of Children with ASD

Effective social integration in general classrooms encompass three factors, viz. visibility among peers (social impact), liking, or social choice (social preference) and affinity to friend group (social network affiliation) (Farmer & Farmer, 1996). Social preference reflects peer acceptance and is influenced by ability, popularity, attractiveness, and behavior (Adler *et al.*, 1992). (Coben & Zigmond, 1986; Gottlieb *et al.*, 1986; Sabornie *et al.*, 1987–1988; Stiliadis & Wiener, 1989) Disabled students, particularly those with learning or behavioral difficulties, tend to have a lower level of social preference compared to their typically developing classmates. Students with behavioral issues were less desirable in high school environments (Sabornie & Kauffman, 1985) while students with learning difficulties were ranked far lower by their classmates (Sabornie, Marshall, & Ellis, 1990).

The degree to which a student becomes famous among their peers is known as their social effect (Farmer & Farmer, 1996). Some students—especially those with extreme behaviors—may be highly visible (high impact) but not well-liked (low preference). Many students with disabilities score low in both areas, though some still have peer relationships. Families value friendships for their children (Hamre-Nietupski *et al.*, 1992), and peers can be open to these friendships (Hendrickson *et al.*, 1996).

Social network affiliation indicates peer group membership (Farmer & Farmer, 1996). Even students with low impact or preference can belong to social groups (Farmer, 1994; Pearl *et al.*, 1998). Peer groups often form among students with shared traits, such as disabilities or giftedness (Farmer & Farmer, 1996). Inclusive classrooms, especially those using cooperative strategies, support meaningful relationships for students with disabilities (Farmer & Farmer, 1996; Hall & McGregor, 2000; Pearl *et al.*, 1998; Piercy *et al.*, 2002).

To support students with autism, families and educators must understand social preference, impact, and affiliation. This awareness informs placement and helps guide strategies to support peer relationships. This research aimed to determine whether autistic kids vary from their typically developing classmates in these areas and, if so, how. It also looked at the correlation between these patterns and the autistic traits of social relatedness, stereotypic behaviors, and communication.

Educational Support for Children with ASD

Educational strategies for children with autism emphasize individualized interventions tailored to each child's strengths and needs. Mavropoulou (2003) highlights enhancing social interaction through structured settings, real-life experiences, and targeted social skills programs. Techniques such as Social Stories (Gray, 1994), the SPELL approach (Syriopoulou-Delli & Kasimos, 2013), and models like DIR/Floor Time and RDI support emotional understanding and social behavior (Papanis *et al.*, 2011; Stellatou & Mallopoulos, 2016).

In kindergartens, early intervention programs aim to include children with autism in special or regular classrooms until age seven (Pittou & Charitaki, 2019). Effective inclusion involves collaboration with parents and therapists, using visual schedules, routines, and structured activities to promote participation (Douvara, 2013). Charitaki (2015), Gena (2002), and Karayanni (2016) found that children with autism may develop their social and emotional abilities with the help of peers and appropriate support systems, particularly via the use of technology and group activities.

In conclusion, sustained support, co-education, and family collaboration are key to helping children with autism generalize social skills beyond the classroom (Karayanni, 2016).

Methodology

The research is a case study, which is an empirical investigation of a phenomena in its actual setting, often used when the lines between the two are blurry (Yin, 2017).

Research Design

In order to delve into the topic of social integration and educational assistance for a kid with autism, the research study was designed as a single-case study. The case study is about the environment provided to a preschooler of Sr. Prep G and its impact on the child. In the present study, the single case is the preschooler studying, who was termed Child A.

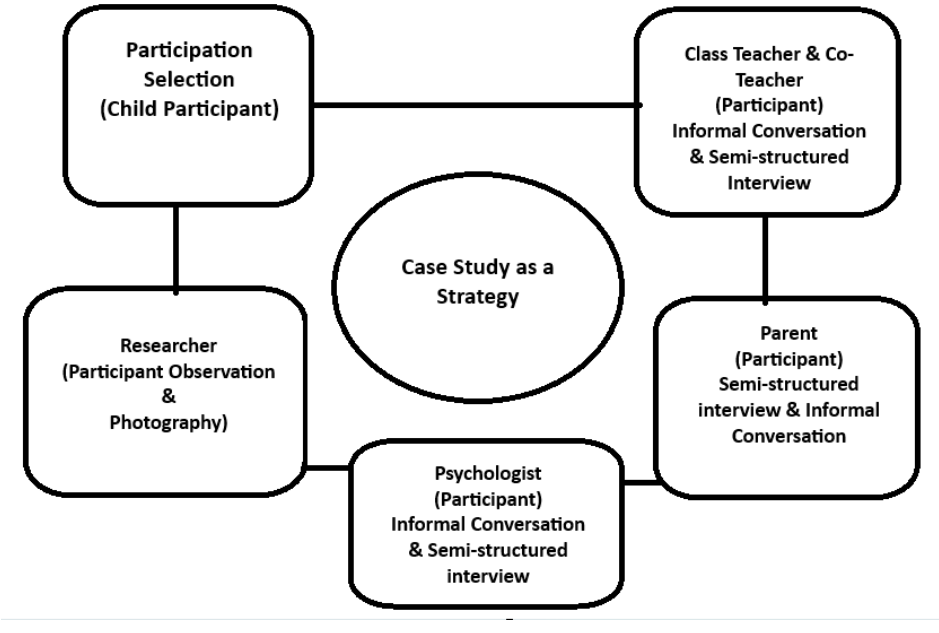

Figure 1: *Research Design used for the Single-Case Study.*

The selection of the case study was based on its convenience, chosen deliberately to take advantage of a well-regarded preschool in Vadodara known for its integrative practices. An in-depth comprehension of the support mechanisms within the settings was the primary goal of the research.

Practical factors such as proximity, accessibility, and existing connections played a role in selecting the school and fostering collaboration during the research process.

Sample for the Study

The participant in this research was a 6-year-old named "Child A" from the Senior Prep G class who was diagnosed with core autism, a moderate-level form of autism spectrum

disorder. The sample for this study stood out due to the absence of any communication skills within the preschool environment, which represents a unique case. While other children on the autism spectrum in the same setting communicated clearly.

The parent plays a crucial role by providing insights into the child's background, daily life, and family dynamics through semi-structured interviews and informal conversations. The class teacher and co-teacher contribute by sharing observations on the child's behaviour, academic performance, and social interactions within the classroom setting, participating in both informal conversations and semi-structured interviews. The psychologist provides professional assessments of the child's psychological development and needs, enriching the understanding of the child's overall profile through informal conversations and semi-structured interviews. Lastly, the researcher engages in participant observation and photography to document the child's interactions and experiences, ensuring a comprehensive perspective is captured for the case study.

Tools and Techniques

The study employed various tools and techniques to gather comprehensive data. Participant observation involved the researcher immersing herself in the study environment from April 17, 2023, recording systematic observations and reflections. Semi-structured interviews were conducted between January 27, 2024, and February 27, 2024, with key stakeholders, such as teachers, psychologists, principals, and parents, and audio-recorded to ensure authenticity and facilitate analysis. Visual documentation through photographs captured the child's learning journey, highlighting experiences, progress, and interactions. Field notes, which included daily observations and informal conversations with stakeholders like co-teachers, shadow teachers, helpers, and parents, provided qualitative depth. These methods collectively offered insights into the participants' experiences and perspectives.

Data Collection

The data collection process consisted of two main phases. In the initial phase, the researcher maintained a diary throughout, beginning with contacting potential participants or gatekeepers to introduce the study and assess interest. Participant selection followed, based on predefined criteria and ensured diverse representation through convenience sampling. The researcher then entered the field as a participant-observer, gradually gaining immersion. After building rapport, informed written consent was obtained, with participants fully briefed on the study and their rights. Observation tools such as the Shadow Teachers' Observation Book were used to record behaviors and interactions objectively.

The second phase involved deeper exploration through continued participant observation and detailed field notes capturing behaviors and reflections. Photographs were taken to supplement data, with consent and privacy considerations in place. Semi-structured

interviews provided richer insights into participants' experiences and were recorded with consent. Audio recordings were also used to preserve verbal data for analysis.

Data Analysis

The data analysis process began with a detailed review and expansion of field notes. The researcher closely examined recorded observations, reflections, and thoughts from data collection sessions to identify new insights and connections. Manual coding was then applied to organize the data, with codes assigned to specific parts of the notes based on emerging themes, concepts, or patterns.

In parallel, audio-recorded interviews were transcribed verbatim to capture all verbal details accurately. These transcripts were also manually coded, using similar methods as the field notes, to reflect the content and context of the discussions.

After coding both sets of data, the researcher grouped related codes into broader themes and sub-themes. This step helped organize the data systematically and identify recurring patterns. Special attention was given to exploring relationships between codes to deepen the analysis.

A final review was conducted to detect any emergent themes not captured earlier. These new findings were integrated into the analysis to ensure completeness.

Through the use of data triangulation, which involves evaluating information from numerous sources, the credibility and trustworthiness of the results were enhanced. Finally, the researcher interpreted the full dataset, like assembling puzzle pieces, to provide a comprehensive understanding. This analysis revealed the social interaction challenges faced by the child with autism, the role of educational support, and how the school environment influenced social integration and school experiences.

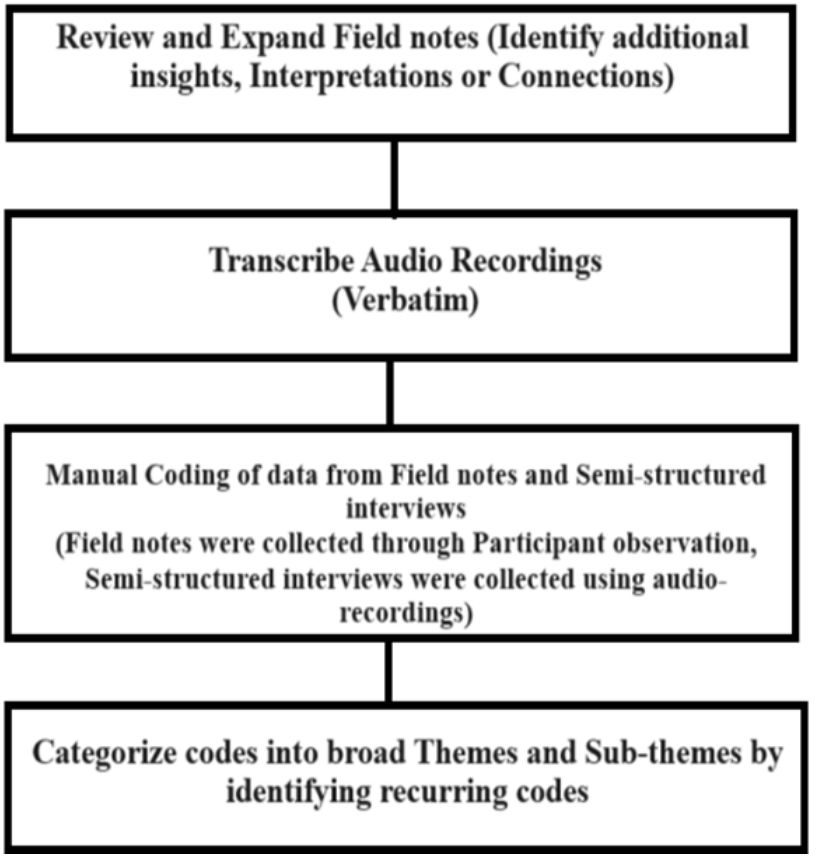

Figure 2: *Procedure followed during the Data Analysis.*

Findings

This single-case study focused on Child A, a five-year-old preschooler in Vadodara diagnosed with ASD, exploring his educational experiences. Data were collected through participant observation and semi-structured interviews with key stakeholders, including the child's father, shadow teacher, psychologist, and classroom personnel. Visual documentation and reflective field notes supplemented them. Following a thematic examination of the data, the following main conclusions were drawn:

Social Challenges

Child A faced noticeable challenges when it came to initiating and maintaining interactions with peers, especially during unstructured or group activities. Throughout the observation period, he frequently relied on prompts from the shadow teacher—whether verbal or gestural—to engage socially. As an instance, in one morning assembly, Child A was nudged into waving to his peers. The peer interactions in music and movement sessions, though, were limited to short episodes, e.g. high-five. That aside,

he tended to cooperate in play much more when provided with clear instructions and materials in well-structured activities such as guided art activities. As opposed to this, in elevation activities, he would tend to withdraw into his own sensory-seeking activities like pacing or manipulation of threads.

Dawson *et al.* (2004) found that autistic children and adolescents often struggle with social reciprocity, and these tendencies are in line with that. These observations were backed by the feedback of the various stakeholders: the class teacher confirmed them but also expressed confidence that Child A would actively engage in group work since, at home, the parent also reported negative tendencies. All these insights indicate that there is a great necessity to provide a student with frequent and properly supported chances to engage with peers: along with social scripting and guided interventions techniques (Dawson *et al.*, 2004), a student should be given a chance to communicate with peers, in order to bridge the gap in social communication.

Educational Challenges

Child A was very responsive to direct and individualized teaching that involved the use of multiple senses and also visual aids. Principles like flashcards, visual memory, the pointer finger approach to reading, and using multisensory materials like chalk, slate and thread as a method of reinforcement allowed him to remain focused and get things done. In literacy activities, for example, during literacy sessions, his attention span extending up to 10 - 12 minutes, nearly two times of the observed duration during the baseline period, was noticed when tactile aids were provided.

The factor of motivational reinforcement enhanced his engagement. Vocal praise (verbal encouragement of the child; saying good job, etc.) as well as physical reinforcers (thread happenings), and tangible reinforcers (allowing the child to eat candy when he or she cleans their room, etc) were also tried because they are simple, consistent, and effective. A flap chair and compression jacket were implemented during writing performance to help a person with the sensory regulation to help diminish the manifestation of distress.

But, in their absence, or indiscipline, Child A has shown symptoms of overwhelmed emotions, namely, crying, hitting himself up, and refusing to operate. The shadow teacher and the mother of the Child noticed that the strategies at home and the strategies implemented in the classroom were little consistent with one another. As an example, the star chart system was not necessarily followed into new environments, or sensory accommodations. These notes are consistent with the conclusion of Koegel *et al.* (1992) and the need to use consistent individual reinforcement techniques, especially where they are sensitive to the sensory profile of a child.

Environmental Impact

The interest of Child A was highly influenced by his surroundings. He normally looked distracted when sitting at the back of the classroom and he would find it difficult to initiate activities on his own independence as well as to see the teaching material clearly. A lack of a sensory corner or an opportunity to use fidgeting devices apparently increased his self-stimulating activities: tapping at windows, flapping his hands or gnawing his shirt collars.

Conversely, when predictable routines and sensory accommodations were part of his day, such as chewy tubes, oral-motor stimulation or deep pressure effects, behavioral disturbances fell noticeably and attention-span increased during academic tasks. The use of visual objects and sequencing the steps in numbering his patrons also made him carry more sequences and instructions without being prompted repeatedly.

These remarks were repeated on various sources. The psychologist wrote off the significance of sensory accommodations and the co-teacher referred to the limited resources that could be utilized in the classroom. The mother of child A revealed that the arrangement at home suited him more in regard to his sensory needs and appeared to help him behave calmer. These results corroborate with those of Baranek *et al.* (2006) who also note the capacity of well-planned physical spaces to moderate arousal levels and increase activity in the children affected by autism.

Emotional Well-Being

Daily routine and affection of adults helped Child A to regulate his emotions which was strongly affected by the presence of supportive adults and predictability of his daily routine. His shadow teacher was a reliable source of reassurance and solidity of a sort not unlike a fixed connection. He found a need to touch or see her through a visual confirmation like by clinging to a thread bracelet when he felt stressed. In hyper-stimulatory events, such as dance performances or spontaneous classroom reorganizations, her soothing example was very important to him.

Distress showed most frequently during non-structured or unsupported activities especially writing tasks and expressed in form of crying, echolalia, and withdrawal. He would crawl under tables or complain audibly without the avail of recognizable supports that he had such as his flap chair or visual: schedule. But on being given scaffolding and positive feedback, he would be able to present the idea of self-recognition and pride, such as applause, after himself or repeating positive phrases, showing an increased self-understanding.

The impossibility of aligning the behavioral systems at home and in school was one of the major consistently reported barriers. As an example, the star chart that was effective

in his mother home was not utilized in the classroom. This lack of continuation shows a failure to offer continuity which is propagated by Donaldson *et al.* (2008) who noted that consistency in home and in school setting plays an imperative role in developing emotional stability and development of a child with autism.

Discussion

This study explored the social integration, educational support, and environmental factors affecting a preschool child with ASD within a mainstream setting. The results indicate a nuanced trajectory of development marked by both progress and challenges. The discussion below interprets these findings in light of the research questions and the theoretical framework underpinning the study.

The first research question addressed how a child with autism interacts socially in a mainstream classroom. The data revealed that, through structured intervention and sustained support, Child A exhibited emergent social behaviors such as greeting peers, responding to adult cues, engaging in reciprocal gestures (e.g., high-fives), and expressing simple phrases using echolalia. These behaviors reflect a growing capacity for social interaction, which aligns with Bronfenbrenner's ecological model at the microsystem level, where direct interactions significantly shape development. However, the child's limited spontaneous peer interactions and occasional behavioral challenges highlight the fragility of these gains, suggesting that while integration was initiated, it remained dependent on external mediation rather than peer-initiated inclusion.

The second research question examined the nature and effectiveness of educational support provided within the preschool. The shadow teacher emerged as a central figure in facilitating learning, emotional regulation, and classroom participation. Her role was not only supervisory but instructional and affective, providing scaffolding consistent with Vygotsky's concept of the ZPD. Child A's improved participation in academic tasks, communication, and classroom routines underscores the effectiveness of individualized support rooted in empathetic and consistent guidance. Furthermore, the use of reinforcement strategies, modeling, and verbal cues reflects Bandura's social learning theory, wherein behavior change is fostered through observation, imitation, and reward-based reinforcement.

The third research question explored the impact of environmental and contextual factors on the child's development. The findings emphasize that the physical, sensory, and emotional environment of the preschool played a crucial role in shaping Child A's experience. Predictable routines, sensory accommodations, visual supports, and coordinated engagement among educators, therapists, and parents contributed to a stable and responsive learning environment. These findings support the social model of disability, which asserts that it is not the impairment itself but the unaccommodating

environment that restricts participation. The preschool's efforts to modify its environment to meet Child A's needs underscore the importance of institutional flexibility and inclusivity.

Taken together, the findings highlight that meaningful inclusion is not merely a matter of physical placement but a complex process requiring sustained adult support, intentional social design, and environmental responsiveness. While Child A demonstrated notable progress in all domains, the results also suggest that such gains are fragile and can regress without continued structured support. The study reinforces the need for early, individualized interventions and collaborative stakeholder engagement to ensure the sustained development and inclusion of children with autism in mainstream settings.

Limitations of the Study

This study, being an exploratory single-case investigation, inherently limits the generalizability of its findings. The focus on one child within a specific preschool context restricts the applicability of the results to broader populations or diverse demographic settings. As such, the insights drawn should be interpreted with caution and viewed as indicative rather than conclusive.

A notable limitation is the absence of data from the home environment. Without observational insights into familial interactions, routines, and support systems, a holistic understanding of the child's developmental context remains incomplete. Variables such as the level of parental involvement, family awareness and knowledge of autism, and the socio-educational background of the household likely influenced the child's developmental outcomes and may differ significantly across families.

Additionally, the preschool setting in this study was relatively resource-rich, offering access to trained staff, structured routines, and sensory accommodations. This environment may not reflect the realities of under-resourced or rural educational contexts, where infrastructural and professional limitations could hinder similar intervention outcomes.

Despite efforts to maintain objectivity, the potential for researcher bias must be acknowledged, particularly given the qualitative nature of data collection involving immersive observation. Interpretative subjectivity, although minimized through methodological rigor, cannot be entirely excluded.

Finally, the study's limited duration poses a constraint on evaluating the sustainability and long-term impact of the interventions implemented. Developmental progress, especially in children with ASD, often unfolds over extended periods, and short-term observations may not capture the trajectory of behavioral, social, and academic changes over time.

Conclusion

This study investigated how social interaction, educational support, and environmental factors influence the experiences of a child with autism in an inclusive preschool setting. The findings highlight the critical role of structured, individualized, and evidence-based interventions in facilitating meaningful participation, social engagement, and learning. The presence of trained support staff, the use of reinforcement strategies, and a responsive classroom environment were instrumental in promoting developmental progress.

To build on these insights, future research should consider longitudinal designs to examine the sustained effects of interventions over time. Comparative analyses of different instructional and behavioral strategies, along with assessments of specialized teacher training and the implementation of IEPs, are essential to deepen our understanding of effective inclusive practices. Furthermore, enhancing collaboration among educators, families, and allied professionals, refining the use of reinforcers, and fostering intentional peer engagement are pivotal in advancing authentic and sustainable inclusion in early childhood education.

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Transforming Learning Through Digital India Initiatives: Assessing Higher Education Students' Awareness

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Abstract

Digital technologies are experiencing tremendous growth and are a significant source of harnessing technology connectivity elsewhere in mentionable sectors, like education, to improve digital proficiency and offer an inclusive learning environment (Government of India, 2020), for which the Indian government launched the Digital India initiative for education. Digitalization influences many aspects of social life and even working methods, besides a wide range of leisure activities. In the budget speech 2017, the Indian Government eventually called for leveraging information technology and launching several digital initiative programs. The quantitative survey method elicited students' perceptions of digital learning platforms like SWAYAM, DIKSHA, e-PG Pathshala, and the National Digital Library. An attempt was made in this study to determine the students' awareness regarding digital initiatives in higher education. The study sample consisted of 200 students from government and private higher education institutions in the Meerut district of Uttar Pradesh. The study concluded that a) Depending on their gender, students' understanding of digital activities in higher education varies significantly. (b) There is a substantial difference in students' knowledge level depending on the nature of their courses on the use of digital initiatives in higher education, and (c) Awareness was significantly different in users for the digital initiative based on the institution's location. The NEP 2020 recognizes the transformational impact of AI-enabled pedagogies, online learning platforms, and 21st-century skills in higher education.

Keywords: Awareness, Technology, Digital India Initiatives, Higher Education.

Introduction

The Indian government launched the Digital India Program in 2015 to transform India into a knowledge economy and a digitally empowered society (Government of India, 2015). A key objective of this ambitious initiative is to modernize education by integrating technology through online learning, digital literacy, and the use of ICT tools in pedagogy. In higher education, digital learning platforms, artificial intelligence applications, and virtual classrooms have significantly transformed conventional teaching, creating more flexible and inclusive learning environments. However, the effectiveness of these initiatives depends largely on the awareness, accessibility, and digital literacy of the intended users.

To better understand how such technological innovations, gain traction among students, this study draws on Rogers' Diffusion of Innovations Theory (2003). According to Rogers, the spread of any innovation including digital learning platforms relies on how potential adopters progress through stages of awareness, interest, evaluation, trial, and eventual adoption. In this context, awareness serves as the critical first stage that determines whether students even recognize and subsequently engage with digital tools such as SWAYAM, DIKSHA, e-PG Pathshala, and the National Digital Library. Despite the availability of these platforms, various studies indicate that many students remain unaware of these resources or are unable to use them effectively due to technological barriers, lack of institutional support, and limited digital skills. The persistent digital divide between urban and rural learners further exacerbates this gap in access and engagement.

Digital reforms have undeniably reshaped India's social and educational landscapes, drawing considerable attention from educators and researchers alike. Developing academic proficiency and practical skills must go hand in hand with cultivating awareness and readiness to embrace technology. Recognizing this, the Indian government, in its 2017 budget speech, emphasized leveraging information technology to launch a range of digital initiatives aimed at enhancing the quality of higher education. Yet, the success of these efforts depends fundamentally on how well students and teachers understand and adopt these innovations. As Rogers' framework highlights, a lack of awareness remains a major barrier to adoption, underlining the need for systematic training and continuous professional development for both teachers and students. Such efforts can foster balanced digital capabilities, bridge the urban-rural gap, and advance the equitable delivery of quality education through Digital India initiatives.

Review of Literature

The rise of Digital India initiatives has significantly reshaped India's higher education landscape (see Figure 1), aiming to bridge the digital divide and foster a knowledge-

based society (Biswas, 2021). Platforms such as SWAYAM and e-PG Pathshala have been instrumental in making high-quality learning materials accessible to students across socio-economic strata, promoting inclusive education and democratizing knowledge (Aslam, 2019). The National Education Policy (NEP) 2020 further reinforces this vision by advocating for extensive integration of digital tools, blended learning, and online pedagogies to enhance the reach and flexibility of higher education (Sahro & Gulati, 2021).

Scholars widely recognize that digital literacy and technological competencies are critical enablers for the effective adoption of these initiatives. For instance, Doiraghusoha (2022) and Scheel *et al.* (2022) emphasize that digital literacy enhances student engagement, facilitates self-directed learning, and increases research capabilities. Similarly, Chaurasia (2022) notes that while MOOCs and online learning environments are increasingly incorporated into higher education curricula, disparities in access especially between urban and rural areas continue to hinder equitable participation.

Research has also highlighted that although students today demonstrate growing familiarity with digital tools, gaps persist in their awareness and utilization of government-supported platforms like SWAYAM and the National Digital Library (Singh & Chauhan, 2015; Fareen, 2022). These gaps are often exacerbated by infrastructural limitations, lack of institutional support, and insufficient faculty preparedness to integrate digital technologies effectively (Fernández *et al.*, 2023). Addressing these challenges is vital to realizing the full potential of the Digital India mission in transforming higher education.

The existing body of literature frequently maps key themes such as MOOCs, ICT integration, blended learning, and digital literacy as central to India's digital education discourse. These themes are often interlinked, reflecting a shared emphasis on the importance of technological readiness for both students and educators (Scheel *et al.*, 2022). Studies underline that government initiatives and policies are crucial drivers of digital transformation but must be matched with targeted awareness programs and capacity-building measures to ensure successful implementation.

Despite this expanding discourse, few empirical studies comprehensively assess higher education students' actual awareness levels of specific Digital India initiatives and the factors influencing their engagement. While the Diffusion of Innovations Theory (Rogers, 2003) provides a valuable lens to interpret how new technologies spread through awareness and adoption, its application in the Indian higher education context remains limited. Consequently, there is a clear need to investigate not only students' general digital literacy but also their specific awareness, readiness, and perceived barriers to using government-backed digital learning platforms.

This study addresses this gap by assessing higher education students' awareness of Digital India initiatives, drawing on Rogers' framework to examine how awareness shapes the adoption and use of digital tools in the Indian context.

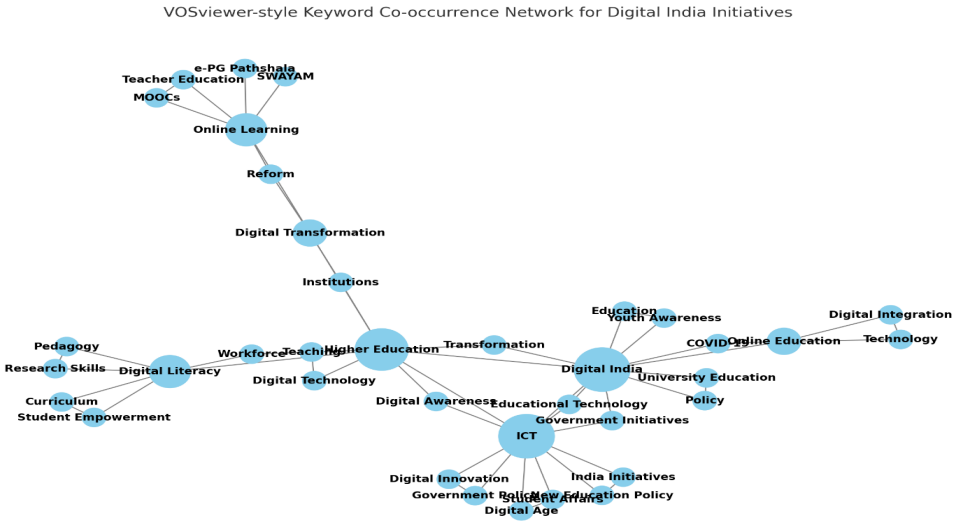

Figure 1: *VOS Viewer Style Keyword Co-occurrence Network for Digital India Initiatives*

Objectives of the Study

1. To study awareness of Digital Initiatives in Higher Education.
2. To compare the awareness of the students about Digital Initiatives in Higher Education based on gender
3. To compare the awareness of the students about Digital Initiatives in Higher Education based on the nature of the course
4. To compare the students' awareness of Digital Initiatives in Higher Education based on the locality of the institution.

Hypotheses

Ho1: There is no significant difference between students' awareness of Digital Initiatives in Higher education based on gender

Ho2: There is no significant difference between students' awareness of Digital Initiatives in Higher Education based on the nature of the course

Ho3: There is no significant difference between students about Digital initiatives in Higher Education based on the locality of the institution

Methodology

This study employs quantitative surveys to understand students' awareness of digital learning platforms. The researcher used a descriptive research design to investigate students' awareness of Digital India's schemes in higher education in the Meerut and Hapur districts.

Sample

The target group was higher education students engaged in undergraduate and postgraduate courses in urban and rural institutions affiliated with Chaudhary Charan Singh University, Meerut. A random sampling technique represents a sample among higher education students. The sample for the study comprised 200 randomly selected higher education students in equal numbers representing urban and rural areas: 100 each from area, with 50 male and 50 female from each institution; the students were from professional and traditional courses (30 and 20 males, 20 and 30 females respectively) from the urban area, and rural areas (26 and 24 males, 22 and 28 females respectively).

Tools Used

The researcher administered the self-constructed test to collect data to ensure the respondents' awareness of the initiatives introduced by the government of India to lead the people toward digital technology. The Digital Initiatives Awareness Test was administered after the pilot testing of the tool, and the experts reviewed the face validity. Four options are available to the respondent, of which only one option is correct; one mark for each correct response, and zero for an incorrect response.

Statistical Techniques Used

The researcher applied a quantitative analysis technique to conduct the statistical test for an appropriate investigation. The researcher used a parametric 't' test after fulfilling the set parametric test assumptions for analysis and interpretation.

Delimitations of the Study

1. The study is limited to affiliated institutions of Chaudhary Charan Singh University only.
2. The study is limited to Meerut and Hapur districts only.
3. The study focuses only on Higher Education students.
4. The study explores six specific digital Initiatives in Higher Education.

Results

The hypotheses-wise results of the analysis are shared below of the digital initiative awareness test.

Hypothesis 1

Ho1: There is no significant difference between students' awareness of Digital Initiatives in Higher education based on gender

Table 1 presents the comparison of mean scores on the Digital Initiative Awareness Test (DIAT) between male and female students. The mean awareness score for male students was 17.58 (SD = 5.26), while female students recorded a higher mean score of 19.11 (SD = 4.66). The independent samples t-test yielded a calculated t-value of 2.29 with 198 degrees of freedom, which is statistically significant at the 0.05 level ($p < 0.05$).

Table 1: ***Mean difference of DIAT scores between male and female students.***

Gender	Number	Mean	S. D	Calculated (t) value	Degree of freedom (df)	Significance
Male	100	17.58	5.26	2.29	198	Significant at 0.05 level
Female	100	19.11	4.66			

These findings indicate that the difference in mean awareness scores between male and female students is statistically significant and unlikely to have occurred by chance. Consequently, the null hypothesis (Ho1) which posited no significant gender-based difference in awareness is rejected. As illustrated in Figure 2, female students demonstrated consistently higher awareness scores compared to their male counterparts, further reinforcing the statistical outcome shown in Table 1. The lower standard deviation for female students (SD = 4.66) suggests greater consistency in their levels of awareness, whereas male students' awareness scores were more dispersed (SD = 5.26).

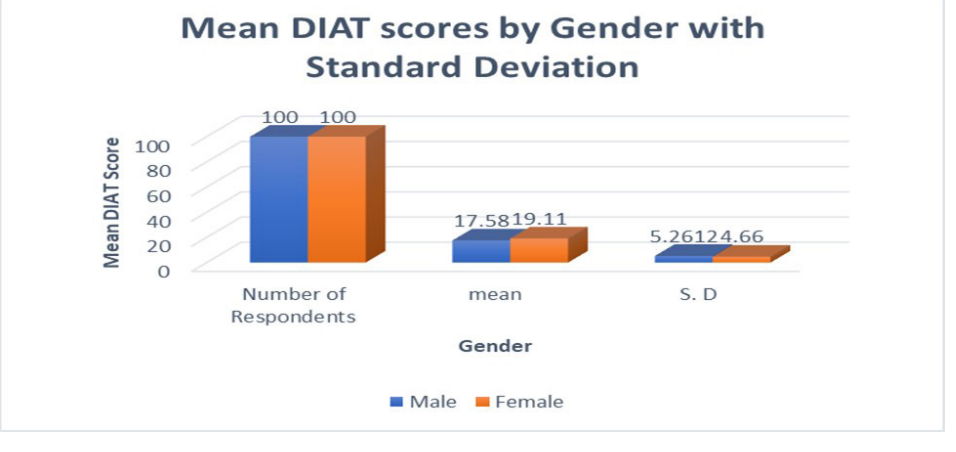

Figure 2: ***Comparison of awareness scores between male and female students.***

This result suggests that female students may be more actively engaged with or better exposed to the digital learning platforms promoted under the Digital India initiative. From a policy perspective, this finding aligns with the National Education Policy (NEP) 2020, which emphasizes Equitable and Inclusive Education (Chapter 8, p. 24) and Equity and Inclusion in Higher Education (Chapter 14, p. 41), ensuring that no learner is left behind irrespective of gender (NEP, 2020). However, the observed gender gap also highlights the need for targeted interventions to enhance digital awareness among male students. Initiatives such as male-focused peer mentoring, co-curricular digital literacy modules, or periodic digital awareness audits could help institutions uphold the NEP's commitment to equitable digital access. Engaging student focus groups to identify barriers such as platform relevance, time constraints, or usability challenges may also guide faculty in redesigning curricula to incentivize the use of platforms like SWAYAM and the National Digital Library through micro-credits and integrated assignments. The null hypothesis (H_{01}) is rejected. Female students exhibit significantly higher awareness of Digital India initiatives in higher education compared to male students.

Hypothesis 2

Ho2: There is no significant difference between students' awareness of Digital Initiatives in Higher Education based on the nature of the course

Table 2 presents the comparison of mean awareness scores on the Digital Initiative Awareness Test (DIAT) between students enrolled in traditional courses and those enrolled in professional courses. The mean score for professional course students was 19.11 (SD = 4.66), whereas students in traditional courses recorded a lower mean score of 17.54 (SD = 4.69). The independent samples t-test resulted in a calculated t-value of 2.39 with 198 degrees of freedom, which is statistically significant at the 0.05 level ($p < 0.05$). This indicates that the observed difference in mean awareness scores is statistically significant and not due to random variation. Therefore, the null hypothesis (H_{01}) which proposed no significant difference based on course type is rejected.

Table 2: *Mean difference of DIAT scores between students of traditional* ***and professional courses.***

Course	Number	Mean	S. D	Calculated (t) value	Degree of freedom	Significance
Traditional	102	17.54	4.69	2.39	198	Significant at 0.05 value
Professional	98	19.11	4.66			

As shown in Figure 3, students pursuing professional courses demonstrate consistently higher awareness of Digital India initiatives compared to those in traditional academic streams. This difference may be attributed to greater exposure to technology-intensive curricula, practical applications, and structured integration of digital learning platforms

within professional programs. In contrast, students enrolled in traditional courses may have fewer opportunities to engage with digital resources, leading to relatively lower awareness levels.

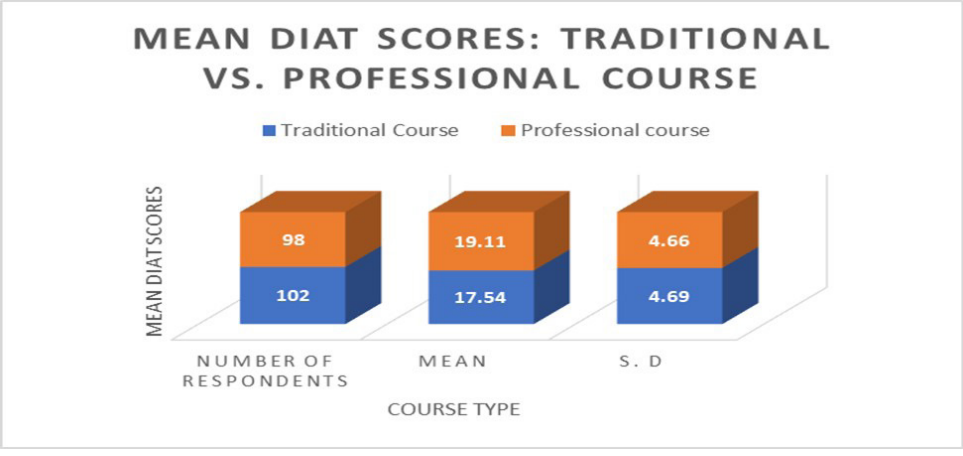

Figure 3: *Comparison of awareness scores between students of traditional and professional courses.*

This finding underscores the need for targeted measures to enhance digital literacy and awareness among students pursuing traditional courses. As highlighted in the National Education Policy (NEP) 2020, professional education programs including engineering, medical, legal, and teacher training disciplines are to be revitalized through multidisciplinary approaches and innovative pedagogies (Chapter 11, p. 36; Chapter 20, p. 50). The relatively higher DIAT scores among professional course students suggest that these disciplines may already be leveraging platforms such as SWAYAM and DIKSHA more systematically to enrich their curricula.

To close this awareness gap, institutions should prioritize embedding digital resources and online learning tools into traditional course structures. Faculty may consider redesigning syllabi to include mandatory SWAYAM-linked assignments, NDLI-sourced readings, and cross-disciplinary learning modules. Furthermore, organizing digital pedagogy workshops that bring together students from both traditional and professional courses can foster a collaborative, networked learning culture aligned with the NEP 2020 vision. The null hypothesis (Ho2) is rejected. There is a significant difference in the awareness of Digital India initiatives between students enrolled in traditional and professional courses, with professional course students exhibiting higher awareness levels.

Hypothesis 3

Ho3: There is no significant difference between students about Digital initiatives in Higher Education based on the locality of the institution

Table 3 presents the comparison of mean awareness scores on the Digital Initiative Awareness Test (DIAT) between students studying in urban and rural institutions. Students enrolled in rural institutions recorded a mean awareness score of 18.99 (SD = 4.67), which is notably higher than the mean score of 17.70 (SD = 4.74) obtained by students from urban institutions. The independent samples t-test yielded a calculated t-value of 2.17 with 198 degrees of freedom, which is statistically significant at the 0.05 level ($p < 0.05$). This result indicates that the observed difference in mean scores is statistically significant and unlikely to have arisen by chance. Therefore, the null hypothesis (Ho3) which proposed no significant difference based on locality is rejected.

Table 3: *Mean difference of DIAT scores between students from urban and rural institutions.*

Locality of Institution	Number	Mean	S. D	Calculated (t) value	Degree of Freedom	Significance
Urban	100	17.70	4.74	2.17	198	Significant at 0.05 value
Rural	100	18.99	4.67			

As depicted in Figure 4, students from rural institutions exhibit a slightly higher level of awareness of Digital India initiatives compared to their urban counterparts. This finding challenges the common assumption that urban students, by virtue of better infrastructure and connectivity, are inherently more digitally literate. Instead, it suggests that targeted outreach efforts in rural areas such as village-level digital literacy camps, panchayat-based awareness programs, and grassroots ICT initiatives may be effectively raising awareness among rural students.

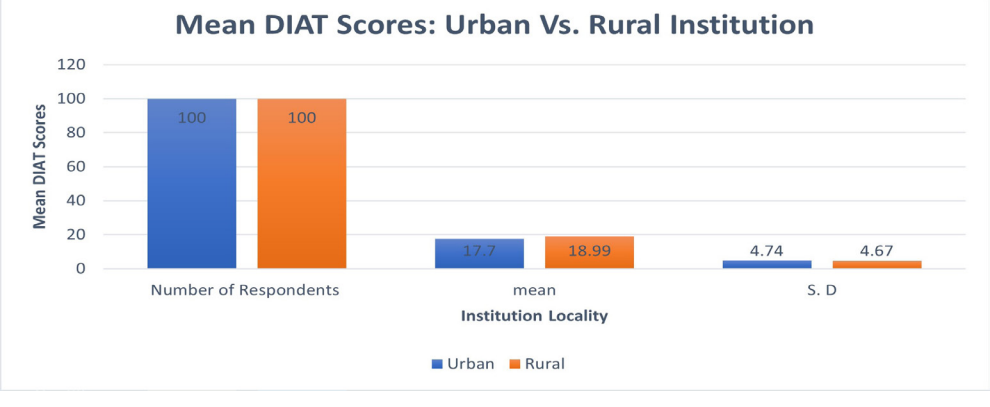

Figure 4: ***Comparison of awareness scores between urban and rural institution students.***

This result has important policy implications. While urban students typically benefit from superior internet connectivity, institutional infrastructure, and access to digital platforms, the slightly lower awareness scores may point to complacency or underutilization of available resources. Conversely, rural students may be engaging more proactively with government-led initiatives designed to bridge the digital divide. This finding aligns with the National Education Policy (NEP) 2020, which emphasizes equitable access to quality education and digital resources across all regions, including underserved and remote areas (Chapter 8, p. 24; Chapter 14, p. 41). The effectiveness of rural outreach validates the NEP's commitment to expanding digital infrastructure through initiatives such as BharatNet and community-based digital literacy drives. Urban institutions, however, may need to reassess their outreach strategies and student engagement practices to ensure that awareness of Digital India platforms including SWAYAM, DIKSHA, and the National Digital Library is maximized. Measures such as conducting periodic digital awareness audits, integrating platform-based assignments, and creating student-led "digital ambassador" programs can strengthen awareness and bridge overlooked gaps. Decision: The null hypothesis (Ho3) is rejected. There is a significant difference in awareness of Digital India initiatives between students studying in urban and rural institutions, with rural students demonstrating marginally higher awareness.

Discussion

The present study set out to assess higher education students' awareness of Digital India initiatives, situating its analysis within Rogers' Diffusion of Innovations Theory (2003). The results demonstrate that demographic factors such as gender, the nature of the course, and institutional locality significantly influence students' levels of awareness. Specifically, female students exhibited higher awareness scores than male students, professional course students outperformed those in traditional courses, and, contrary to common assumptions, students from rural institutions showed marginally greater awareness than their urban peers. These findings highlight the critical role that demographic and contextual variables play in the initial awareness stage of innovation diffusion, which determines whether students will meaningfully adopt and benefit from government-backed digital learning platforms.

These results align with earlier research emphasizing that digital literacy, equitable access, and institutional readiness are pivotal for maximizing the impact of platforms like SWAYAM, DIKSHA, and the National Digital Library (Aslam, 2019; Chaurasia, 2022; Scheel *et al.*, 2022). The gender-based differences reflect emerging trends in which female learners are engaging proactively with technology-enhanced education, consistent with NEP 2020's commitment to closing historical gender gaps in digital access and participation. Likewise, the higher awareness among professional course students suggests that curriculum design in disciplines such as engineering, medicine, or teacher training is increasingly embedding digital platforms as core instructional

resources, validating NEP 2020's emphasis on multidisciplinary and digitally driven pedagogies. The unexpected finding that rural students reported higher awareness than urban students points to the effectiveness of localized outreach programs, community digital literacy camps, and government-led rural connectivity schemes such as BharatNet.

Taken together, these insights underscore that raising awareness must remain a sustained priority if India's digital education vision is to reach its full transformative potential. Institutions must strategically bridge demographic gaps by designing gender-sensitive outreach, enriching traditional course syllabi with structured digital components, and auditing urban campuses for overlooked awareness challenges. Faculty development and peer-led initiatives, such as digital ambassadors and cross-disciplinary workshops, can strengthen awareness and encourage equitable engagement. Grounded in Diffusion of Innovations Theory, these measures can propel students from mere awareness to meaningful adoption, ensuring that Digital India initiatives fulfill the NEP 2020's promise of accessible, inclusive, and future-ready higher education.

Education Implications of the Study

1. Development of a positive teaching-learning environment initiative, such as SWAYAM, SWAYAM PRABHA, NDL NAD, etc. These initiatives benefit the teacher in supporting their teaching and making the subject more transparent to students across all disciplines conveniently and quickly.
2. SWAYAM is the flagship initiative that aims to understand digital India for educational purposes. It is an online portal that provides study materials, teaches various courses, and facilitates education and certification.
3. Enable the students and get them used to learn through any device like mobiles, laptops, computers, iPads, etc., anywhere, anytime, according to their situations and their time.
4. Teachers should guide them through many suitable courses and innovative skill development programs to lead students toward a concrete professional career.

Suggestions for Further Research

1. The present study has been conducted on a sample of students studying in higher education. This study may be replicated on a sample of teachers teaching in various institutions to examine faculty awareness, training, and readiness to adopt digital teaching methodologies.
2. The present study was conducted on a small sample. Therefore, research may be performed on a large sample for more generalized results.

3. The study may be replicated in a comparative survey of awareness about digital initiatives in different Educational Institutions and a Longitudinal Study on Digital Awareness Growth.

4. The study should be done in technical courses like medicine and engineering, along with investigating the role of sociocultural factors in shaping digital learning.

5. The study should be done at the state and national levels to address the need for a digital divide.

6. Develop a framework for enhancing digital literacy in higher education institutions.

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Bridging the Digital Divide: Analysing Students' Proficiency in Digital Literacy

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Abstract

"*New circumstances and realities require new initiatives*" (NEP, 2020, Sec 24, pp 58). The National Education Policy (NEP) 2020 emphasizes the importance of digital literacy in education for the 21st century. The pandemic has accelerated the role of technology in education. Technology is deeply embedded in our lives – much more than we realise, for instance communication (smart phones and Apps, emails and video conferencing), social media platforms (Facebook, Instagram, LinkedIn), Healthcare (Robotic Surgeries, Smart watches), transport and navigation (Google maps, Uber, Ola, Driverless cars), Smart home devices (Alexa), Online shopping, Food delivery Apps, entertainment (YouTube, Netflix), Gaming, Online banking, cloud storage, online learning platforms (Swayam). From communication to education, healthcare, and entertainment, technology is shaping every aspect of modern life, making it more efficient and interconnected. Therefore, young children should possess a wide range of digital skills called digital literacy. Is our education system preparing learners for this leap in technology? Are our teachers ready for this shift? How is the implementation of NEP 2020 focussing on bridging the digital divide? This research tried to find answer to these questions by assessing the current digital literacy levels of students and teachers from the select schools from Delhi. The digital literacy is understood across three key dimensions: Use of Technology for Learning, Internet Navigation, and Basic Computer Skills. The first dimension explores how students search for, evaluate, and utilize digital information for academic purposes. The second dimension - Internet Navigation focuses on students' ability to navigate the internet effectively and the third-dimension basic computer skills examines students' proficiency in using common software applications, navigating operating systems, and

resolving basic IT issues. The results of this research will help teachers and teacher educators to know how adept students are at the use of digital resources, and their digital literacy proficiency. Thus, it provided suggestions for improving digital literacy education in the schools.

Keywords: Digital literacy, Technology integration, Internet navigation, Proficiency, Teacher Education, NEP2020 implementation

Introduction

Today we are in the 'Fourth Industrial Revolution', popularly known as 4IR, coined by Klaus Schwab (2016), i.e., digital revolution. It started with the development of electronics, computers, internet and information technology in 1960s. The industries of communication (mobile phones), banking (Any Time Money – ATM), entertainment and education witnessed a significant global transformation. That marked the era of 'Information Age' i.e. a revolution how information is shared, stored and processed and then we moved towards automation, which enhanced productivity in various sectors. However, the 4IR, refers to "the ongoing transformation of industries and societies through the integration of digital, physical, and biological technologies and boundaries between these are becoming blur" (Schwab, 2016). The artificial intelligence, machine learning, big data algorithms, robotics and automation are products of 4IR. Now machines and software, with the help of algorithms are capable of learning, identifying patterns and making or influencing decision making. It is for the first time in the human history that machines are capable of performing tasks that typically require human intelligence. In this global scenario of digital transformation, today India is the world's third-largest digital infrastructure, according to the State of India's Digital Economy Report, 2024. Our country is ranked after the US and China, and it surpassed developed economies like the UK, Germany, and Japan. However, this impressive national achievement masks a crucial disparity. While the nation itself is highly digitalized (measuring digitalisation using the CHIPS Framework i.e. Connect, Harness, Innovate, Protect and Sustain), the average Indian user lags far behind as compared to other G-20 countries. India's is at the 12th place in the user-level digitalization ranking of G-20 countries.

In the age of digital revolution, the concept of digital literacy emerged. The UNESCO (2018) emphasized that it is beyond basic computer skills. It encompasses the ability to navigate the online world effectively. This includes finding and critically evaluating information, creating content, and communicating safely and responsibly. These skills are crucial for success in the digital society, whether it is for finding a job, starting a business, or simply staying informed. The digitalization has also influenced education in number of ways, for instance, platforms like Swayam provide courses (video and interactive format) to learners, conduct of large-scale examinations using online platforms, e-resources for learning and teaching, platforms like PARAKH for comprehensive documenting and

recording the assessment of children across years. How well are we prepared for the transition of technology in education?

Review of Literature

The genesis of digital literacy can be traced back to John Debes (1969) who coined the term 'visual literacy', which means that one does not only see on the picture but analyse and decode it with ease. 'Visual literacy' was prominent until the concept of 'technological literacy' emerged (in late 1970s) and intensified with the availability of personal computers, i.e. 'computer literacy' and later with the rise of communication-focused computer use, 'ICT literacy' (Information and Communication Technologies literacy) emerged. Paul Gilster (1997) in the book titled 'Digital Literacy', sparked significant discourse around the term digital literacy, which was defined to capture the complexities of digital communication and the internet age. In the field of education, it was debated that there's more to digital literacy than just using software or operating machines (Eshet-Alkali, 2004). According to him, digital literacy focuses on the development of broader set of skills that are necessary for effective functioning of people in the digital era.

The research conducted in the decade of 2010s were focussed on highlighting importance of technology in education and lives. Osterman (2012), Saubari and Baharuddin (2016) and Fraillon (2019) recommended that technology is increasingly influencing all areas of our lives, the skills like ability to navigate and its effectively use are becoming essential. They focussed on challenges of utilizing technologies in education and need for new skills for proficient digital literacy. The key concern of how the technological advancements have transformed literacy from static approach to a more dynamic and heterogenous, was also discussed. It was comprehended that online reading is a different type of literacy, with its own set of technical and cognitive skills. It would encourage students and teachers to be lifelong learners, as technologies are fast changing/ refining.

Another concern raised in the review was that how many people have access to digital device and gadgets. Thirdly, students and teachers should be made aware of the right way to use the technology. Fraillon (2019) advocated the need for protecting students from being hacked and recommended that digital literacies must be taught, backed by well-developed curricula and proper ICT training for educators.

The research conducted in 2020s were focussed on users' ability to perform tasks related to digital literacy, effectiveness of an intervention program for the development of digital skills, learners' performance in digital literacy in the context of educational environment. Tomczyk and Eger (2020) conducted research on a random sample of 1693 upper-secondary school students and found that the weakest area of digital literacy among students was related to copyright knowledge, while the strongest area was in online shopping and financial operations.

Masyhura and Ramadan (2021) researched on principals and teachers of schools. Based on their use of computers and cell phones, it was found that the sample possessed a good understanding of technology. But 'WhatsApp' was the primary digital platform utilised for instruction to students and staff, and the links to YouTube were used to provide additional information/ knowledge to students in the classroom. There was minimal use of other digital platforms, such as Google Apps, due to lack of information about the utility of these tools. It concluded that although the use of technology in education shows promise, the successful adoption of digital literacy in elementary schools has been hampered by a lack of appropriate training, direction, and interactive teaching strategies.

The research by Hoz *et al.* (2023) used a quasi-experimental approach with various control and experimental groups to evaluate a tailored intervention program aimed at enhancing digital abilities in high school students. A total of 204 students participated from 6 to 11 grade levels. The research indicated that digital literacy programs are beneficial to students' academic progress and future workforce, but it also emphasised the importance of collaboration among all stakeholders, such as teachers and parents, in navigating the intricacies of the digital world.

The research by Pratama *et al.* (2023) focussed on the influence of digital literacy on student learning. It explored the impact of digital literacy on student learning outcomes and examined how proficiency in digital skills affects academic performance. A questionnaire as the survey tool, (Likert scale) measured digital literacy (independent variable) and the final semester exam scores were used to evaluate the student learning outcomes (dependent variable). The research highlighted the correlation between greater digital literacy and better student learning outcomes. It suggested that it is important to create better educational experiences for enhancing digital literacy by facilitating access to information, encouraging critical thinking, and cultivating creativity and problem-solving abilities. It is important to incorporate digital literacy into educational methods to improve students' learning in today's digital age.

The research paper titled "Student digital literacy in online learning: Before and after the covid pandemic" by Amini (2023), explored that the shift to online learning during the pandemic has influenced the digital literacy of early childhood education students. About 550 respondents were surveyed. The research identified that the COVID-19 compelled students to their first online learning; their efficiency in WhatsApp, Facebook, YouTube, Instagram, and, in particular, WhatsApp and Facebook increased, but they still use email sub optimally; but even after the pandemic they favour a blend of online and face-to-face learning.

The research framework proposed by Eshet-Alkali, 2004 focussed on the five key aspects of digital literacy - photo-visual literacy (visual information like images and graphs), reproduction literacy (creation, flow, and manipulation of information), branching literacy

(modifying the digital space, using various routes/ sources for accessing the desired information), information literacy (selecting and using information sources efficiently, socio-emotional literacy (keeping in mind the social and emotional components during online interactions). Thus, adapting Eshet-Alkali's (2004) framework, in this research, the digital literacy is defined under the following three dimensions:

- *Use of Technology for Learning*: It refers to the use of technology for searching, assessing, and using digitally sourced knowledge for academic purposes and its effectiveness in the classroom.
- *Internet Navigation:* It refers to the skill of searching information on the internet in a targeted way; the ability to evaluate the credibility of online sources, and the skill of finding essential information.
- *Basic Computer Skills*: It refers to the ability to utilize commonly used software applications like MS Office or other, navigating through operating systems and solving simple IT problems.

In India, the COVID-19 pandemic has helped us in realising the potential of digital learning in education. The primary objective of this research was to assess the level of digital literacy of students at the middle and high school level (classes 6-12; age group 11- 17 years) and to build a comprehensive understanding of the same. Further, identifying strengths and weaknesses of integrating technology in the classroom and thus working towards the individual needs of the learners, focussing on digital literacy and empowerment.

Thus, this research would highlight how both learners and teachers would benefit and refine their learning and assessment in the contemporary context. Are our schools, teachers and students ready for this change? It attempts to answer this question by working with classes 6-12 students and their teachers to understand their digital literacy skills.

Objectives of the Research

The research was conducted with the following objectives:

1. To identify the digital resources utilized by students and examine the purposes for which they are used.
2. To evaluate the extent of technology integration in classrooms by teachers and its impact on students' digital literacy skills.
3. To identify the challenges faced by teachers and students in developing digital literacy skills.

Methodology

This research employs a quantitative approach. This research was conducted during the school internship programme of a teacher education course. The pre-service teacher was placed in a government school (funded by the government of NCT, Delhi) for 16-week long internship period. The pre-service teacher taught mathematics to grade 6 to 8. She taught them, simultaneously observed teaching of regular school teachers in the school. The data was collected from the three sources – observation, questionnaire and interview.

The observation was conducted for a period of five weeks. The field notes were taken during the observation. The pre-service teacher also interacted with students and interviewed teachers. The participants consented and voluntarily participated in the research.

The data was also collected using a questionnaire and interviews of school students and teachers. To find out whether students from the private school (schools funded from student fee and private management) had any different set of challenges, the questionnaire was administered to them (44 in no.). The private school was located in the same vicinity.

The questionnaire contained 28 questions, related to digital literacy. The questionnaire has different type of questions ranging from Multiple Choice Questions, statements to be marked on a 5-point Likert scale, and open-ended question. The interview was conducted for both students and teachers. This research uses descriptive statistical analysis technique. This research explored participants' self-reported experiences with digital literacy.

Sample

This sample of the research had 125 students from the grades 6-12 in the academic session 2023-2024 in a schools located in the North-west of Delhi (Urban area), India. The distribution of the sample is as follows:

S.No	Criterion	Distribution	No	Total
1	Gender Distribution	Girls	100	125
		Boys	25	
2	Level of Education	Middle	90	125
		Secondary	35	
3	Distribution of School on Basis of Funding	Government	81	125
		Private	44	

Twenty teachers teaching in the middle and secondary schools were interviewed.

Findings and Discussion

1. Accessibility of Digital Devices:

This research data showed that 98% of students have access to digital devices either a smart phone or a computer or a laptop (with internet). Out of which, 65% have access to smartphones. Students responded that they use digital devices for educational resources like finding answers to questions, watching videos and even asking bots for answers. They use several apps like WhatsApp for communication with teachers and peers and sharing tasks/ worksheets. A few students reported that they use their devices for keeping track of news and information. Students also use their devices for social media, and online games, which, they admitted are a great source of distraction. On one hand access to digital literacy is being used as a tool for learning and staying connected and on the other hand continuous notifications from different apps, cause distractions. Additionally, screen time was found to be negatively impacting their sleep, posture, and overall well-being. As shown in Table 1, although digital access appears high among students (98%), qualitative data reveal issues with device functionality and associated distractions.

Table 1: *Accessibility and Use of Digital Devices Among Students*

Aspect	**Findings**
Access to Digital Devices	98% of students reported having access to a digital device (smartphone, computer, or laptop with internet).
Type of Devices Used	65% primarily use smartphones.
Educational Uses	• Searching answers • Watching educational videos • Asking AI bots • Communication via WhatsApp Sharing worksheets and tasks
Other Uses	• Accessing news • Social media • Online games
Reported Benefits	• Staying connected with teachers and peers • Access to learning materials

Reported Challenges	• Frequent distractions from app notifications • Sleep disturbances • Poor posture • Health concerns
Device Limitations	• Outdated models • Limited memory • Incompatibility with learning apps

Though 98% of students own a device, this presents a promising picture, however a deeper analysis revealed that their devices were outdated, lesser memory space, and many times they were not able to install different apps required for learning.

2. Patterns in Students' Use of Technology

According to the survey, 28% of students use digital devices for less than 30 minutes. During an interview, a girl remarked that she hardly uses any digital device, maximum of 30 minutes spread over entire day for checking messages sent by her teachers and friends. She said that she enjoys playing with her neighbourhood friends, helps her mother and grandmother in household chores and studies from her notebooks and textbooks. Such cases are rare.

27% of students use digital devices for about 1 to 2 hours per day for studying or any school related task. They use it educational as well as entertainment purposes. They have understood the process of 'browsing the web' and have developed the exploration competences. Students were found to be very comfortable at information retrieval. They were found to participate in online quiz, and puzzles, etc.

20% of students spent more than 2 hours on digital devices. In some cases, usage of digital device was more than six hours per day. It is therefore, necessary to set screen time limitations for children by teachers and parents. It is also felt important to teach students how to use technology positively for learning and to maintain the balance between the use technology and their health.

However, 45% of students use their digital devices for leisure content such as online gaming, web cartoon, web series, YouTube etc. In the interview, students reported that during their free time they use social media platforms such as YouTube, Instagram, Snapchat, etc. for entertainment. It is recommended that media balance viz-a-viz screen time. It is important that students should be taught about how to make the internet work for them by setting goals, and not to get distracted by it. (Prothero, 2023) also recommended that the trick is to discover a healthy balance that includes both the digital

world and enough sleep and time with your friends and relatives.

It was also found that 42% of students faced language barrier while operating digital devices. During an interview, a student said that he was not able to comprehend the instructions, given in English. Thus, the role of language can't be overlooked in utilization of technology by students. Educational materials need to be multilingual for their diverse users.

It was found that 26% of students are learning Coding, Canva and Scratch for easy creation of animations, games, and interactive stories. It highlights the growing role of digital tools in education for students. However, a focus on promoting both established learning programs and fostering software skills is necessary to ensure all students are well-equipped to thrive in the digital era. As shown in Table 2, students' use of digital devices ranges widely in duration and purpose, with a significant portion engaging both educational and entertainment platforms. The use of generative AI tools, while enabling efficiency, also raises cognitive and ethical concerns."

Table 2: *Patterns and Implications of Digital Device Use Among Students*

Aspect	**Findings**
Screen Time Distribution	28%: Less than 30 minutes/day (mainly for checking messages from teachers/friends). - 27%: 1–2 hours/day (educational + entertainment; strong browsing skills). - 20%: More than 2 hours/day (some exceed 6 hours).
Leisure Use	45% of students use digital devices for leisure content (e.g., games, web series, YouTube, Instagram, Snapchat).
AI Tool Usage for Academics	60% (approx. 3 out of 5 students) use generative AI tools (e.g., ChatGPT) to complete assignments/homework.
Language Barriers	42% of students reported difficulty understanding English instructions while using devices.
Skill Development Tools	26% of students are learning tools like Coding, Canva, and Scratch for animations and interactive stories.

About half of the students use digital devices for using technology to complete their assignment/homework. Every 3 students out of 5 students are using generative AI tools such as ChatGPT, etc. for completing their assignment/homework. Coulombe (2023), showed concern that generative AI tools are impacting cognitive abilities of young children. He concluded that "using AI extensively to solve issues erodes our ability to adapt ourselves to the real nature of the problems". To quote Alfalah (2023) "the convenience of AI is what becomes a pitfall. This is not just a delightful helper; it is giving away key talents".

3. Assessing Students' Technology Proficiency

UNESCO's definition of digital literacy focuses on the development of fundamental skills (like computer operation), information literacy, and media awareness. The objective is to critically think about the online information available and acquire resistance towards malicious things, such as misinformation, hate speech, and radicalisation. Thus, digital literacy is not only about do mastering skills of proper communication but also about responsible internet behaviour and also learning how to be comfortable online. (Saubari, & Baharuddin, 2016).

It was found that only 38% of students were confident in navigating the internet to access the relevant information for their learning. The rest of the students had low confidence in navigating the web which indicates that the students should be shown through hands on learning about search engines, assessing the reliability and validity of the information, identifying fake information, and the critical thinking skills when dealing with online information.

It was found that 37% of the students use 'Google' to resolve their issues related to digital devices. While 28% of students seek help from their peers or parents for resolution. This finding is contrary to the findings by Apte *et al.* (2023), wherein they found that parent's play an essential role in solving difficulties faced by the students in private schools, followed by friends and teachers. It is probably because of the socio-context of children in the sample of our research. Their parents still feel the digital divide. It is to be understood that there is a need to constantly learn about digital world and its effective usage. The research found that 67% of students use computer for their purposes. However, only 25% of the them admitted that they are extremely comfortable with the use of technology. As illustrated in Table 3, while students increasingly engage with digital tools, significant gaps remain in both their confidence and critical skills—suggesting an urgent need for structured digital literacy interventions.

Table 3: *Assessment of Students' Technology Proficiency and Digital Literacy*

Aspect	**Findings**
Computer Usage	67% of students reported using computers for various purposes.
Comfort with Technology	Only 25% felt "extremely comfortable" using digital tools.
Confidence in Web Navigation	Only 38% of students reported confidence in navigating the internet to find relevant academic information.
Problem-Solving Approaches	• 37% of students use Google to solve digital issues. • 28% seek help from peers or parents.
Lack of Digital Literacy Skills	• Majority of students lacked exposure to: • Evaluating online sources • Identifying fake/malicious content • Applying critical thinking while browsing • Practicing safe and responsible internet use

Today, a basic comprehension of computer work is a core requirement for the future and a gateway to the online learning networks. It facilitates appropriate communication, and collaboration. The information is probably just at a click away. Jan (2017) in his statistical research (a bivariate correlation) showed that the students' technology use and factors like home internet access and education of computer skills influence their attitude towards Information and Communication Technology (ICT). This provides for the development of an effective digital literacy which would be a compulsory skill to excel in future.

4. Assessing Teachers' Technology Readiness

According to Pool (1996) teachers can effectively apply the internet to design interesting and meaningful educational activities. However, during the interviews with the in-service teachers revealed their infrequent usage of digital devices in classrooms. The frequency of usage is as low as once or twice a month. The teachers are unable to utilize digital devices productively for teaching. The factors like inadequate trainings, lack of knowledge and hands on experience, and fear of technology in the classrooms resulted

in poor digital inclusion within the classroom environment. Such results support the necessity for a more systematic way of implementing technology in classroom learning and teaching. Eshet (2004) recommended the need to overcome these constraints through increased focus on professional development opportunities and resources for effectively implementing digital literacy education for teachers.

In the contemporary context, teachers have a huge responsibility to tailor the classroom teaching to incorporate digital literacy and awareness. The teacher must be knowledgeable enough to use digital literacy tools in the classroom. A frequent exposure could promote the growth of deeper understanding and skills for the use of technology. There is a need for a multi-software-oriented approach ranging from graphics, animation, web design, databases, and programming covering both conceptual knowledge and skills in students and teachers. The computer literacy education programs can only be highly effective when the teachers are well-trained and the correct technology resources are available (Apte *et al.*, 2023).

5. Assessing Importance of Digital Learning

About three-fourth of students responded that digital literacy is important. Some of their responses are:

'It will help us in the future because India is becoming digital'

'So, in future whenever we have to use digital tools, we can use it easily'

'Digital education is important because it allows for more accessible and flexible learning opportunities. It can reach a wider audience

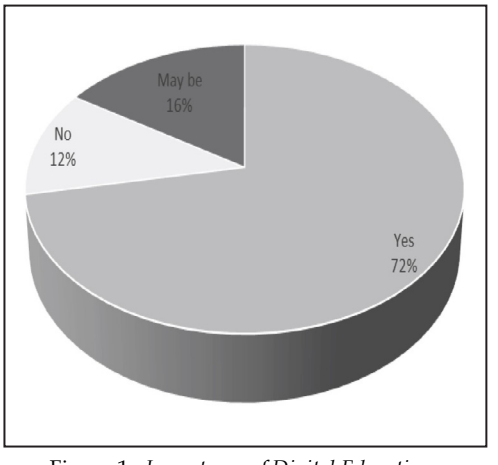

Figure 1: *Importance of Digital Education*

It provides us an interactive and engaging content. Plus, it prepares us for the digital world we live in!

A student replied negatively and commented, "*There is no need to provide the digital education because if students learn the digital things than because of curiosity they learn the things that are very dangerous to their own life and to their parents and the whole globe, like dark web. When I started using pc, I was very curious about to learn hacking and after getting the information about it I realised that it is very dangerous to my life and unethical for the country.*'

This is a valid concern. Digital education should come with lessons on responsible online behaviour and cybersecurity. Teachers can highlight the positive and productive uses

of technology alongside teaching students to identify and avoid potential dangers. At the same time, the respondent talks about curiosity which lead them to learn 'unethical hacking'. While curiosity is a great learning tool, it's important to channel it safely. Digital education can provide a safe space for students to explore technology and learn under proper guidance, minimizing risks associated with unguided exploration.

Schools and teachers can address these by explaining how digital education equips students with valuable skills and helps them navigate the digital world safely and productively. Exempting technical fields, basic digital skills are essential for most professions. By incorporating digital citizenship alongside technical skills, teachers can create a more positive and well-rounded digital learning experience for all students. Today, digital literacy is indispensable part of life. Technology and digital skills which students learn today would be resources for tomorrow that would not only help them in their education but also in their work.

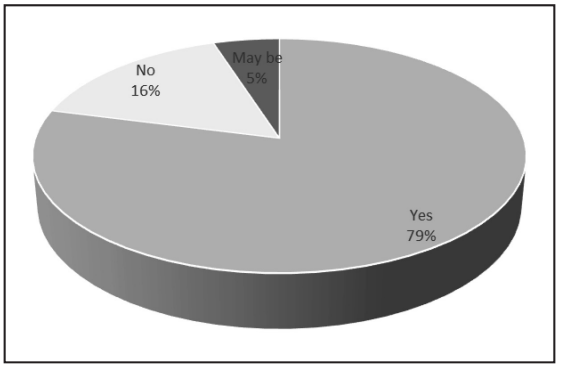

Figure 2: *Awareness about Digital India Programme*

6. Assessing Awareness about Digital India programme

Digital India is a flagship programme of the Government of India launched in 2015 with a vision to transform India into a digitally empowered society and knowledge economy with goal of promoting digital literacy programs to equip citizens with the skills to use technology effectively. 79% of students were found to be aware of this flagship programme. During interviews with the research participants, it was found that students were aware of E-governance platforms like Digi Locker, digital payment platforms like UPI, Paytm, PhonePe and initiatives like 'Make in India'. This awareness bodes well for future generations' understanding of building a self-reliant India. The Central Board of Secondary Education (CBSE) has set up a facility for students to create their Digi Locker Account for storing their marksheets and degrees. In another initiative 'Personal Education Number or PEN' assigns students a unique identification number across all the Education platforms. This Public Digital Platform for Education helps in consolidate information about a child on different isolated platforms like admission, scholarship, examination and many other. Such new age technologies would interact with the data available across entities. Thus, helping student with a consolidated view of their education journey but also making it easier for other stakeholders to gather and collate information and data.

7. Awareness of Online Safety and Digital Security

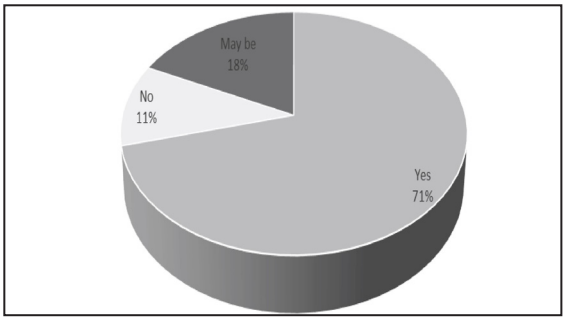

Figure 3: *Awareness of Online Safety and Digital Security*

It was found that 71% of students were aware of online safety and digital security. The concern is heightened for the 18% of students who expressed uncertainty about their own awareness of these important topics. For unsuspecting users, particularly younger or less tech-savvy individuals, the risks associated with cyberspace can be significant. These risks range from falling victim to online scams that steal personal information to unwittingly unleashing computer viruses. The consequences of navigating cyberspace unprepared can be severe. As we all know, the internet's limitless and constant flow of information presents both opportunities and dangers. Even so, much like navigating a jungle, users must exercise caution and be mindful of who they interact with to achieve positive outcomes in cyberspace (Alkalai, 2004). Those who want to master this ability should be very critical, reflective and have a great information literacy and personal literacy. Plenty of researches has been conducted to establish a socio-psychological profile of the Internet users (Amichai-Hamburger (2002); Hamburger & Ben Artzi (2000); Mundrof & Laird (2002)).

The remaining 29% of students lacked awareness of online protection highlighting the critical need of digital literacy. This would enable students in enhancing their capabilities to manoeuvre cyberspace safely in a responsible way. It is not only their protection from online dangers but also an avenue through which they would use the social and educational opportunities the internet provides.

Implementation of NEP 2020: Implications for Teacher Education

The research showed that digital literacy has already penetrated into society. It is high time that it should be systematically integrated in the school and teacher education curriculum. Students were found to be more comfortable than teachers. Thus, it important that teachers should be trained in digital literacy skills both in the pre-service teacher education curriculum and in-service teacher education.The recently launched four-year Integrated Teacher Education Programme (ITEP) by the National Council for Teacher Education (NCTE), based on the vision of the National Education Policy (NEP) 2020, includes two key courses: 'Emerging Technologies in Education' and 'ICT in Education'. These courses provide a groundwork for pre-service teachers to learn and integrate technologies in pedagogies in the classroom. It is necessary

that such courses should not remain at the theoretical level but focus on hands on training for digital pedagogy, online classroom management, digital assessment tools, and interactive learning strategies. Secondly, the teacher education programmes must redesign their curriculum to incorporate recent digital literacy advancements into pedagogies for technology enabled classroom learning environments.

The in-service teachers should have a continuous professional development or capacity building programme for practical exposure to digital teaching through workshops, ensuring they can effectively integrate technology into their teaching methods. There should be focus on developing and upskilling digital literacy skills programs through refresher courses, and / or online certification programs. Such courses should be made mandatory to help teachers stay updated with evolving technologies. The conventional lecture-based teaching needs to be supplemented with digital tools such as Learning Management Systems (LMS), AI-driven analytics, and multimedia content. Along with a pedagogical shift, a reform in assessment is highly recommended focusing on new age techniques like online quizzes, gamification, digital assessment tools and AI-assisted grading to ensure effective student assessment.

The pre-service teachers should be placed in the Ed-Tech companies during their internship. Such public-private partnerships would provide interns/ teachers with access to the latest digital tools, platforms, and best practices. The in-service teachers should have mentors for facilitating their learning. Such exposure would provide a culture of experiential and shared learning. They should be trained in adaptability, digital ethics, cybersecurity awareness, and effective online communication. The government should introduce policies to integrate digital education in pre-service and in-service teacher training programs.

The NEP 2020 (p 59) has recommended tech-equity, which could only be possible by investing in infrastructure and accessibility. The schools and colleges must be equipped with the necessary digital infrastructure, such as high-speed internet, smart classrooms, and access to digital resources, affordable devices to ensure students in rural and disadvantaged areas have access to digital learning tools. Therefore, it should be ensured that teachers are well-prepared to handle the evolving digital advancements in the educational landscape. The National Digital Library of India (NDLI), a virtual repository offering a vast collection of educational resources, including textbooks, articles, and videos, is accessible in multiple languages. Such initiatives are outcomes of the implementation of NEP 2020.

Educational Implications

Collectively, the findings reveal a layered digital divide—not just in terms of access, but in usage patterns, language, confidence, and critical engagement. Bridging this divide requires a multifaceted approach: ensuring device quality, promoting ethical technology use, embedding digital literacy in school curricula, offering multilingual content, and involving parents as co-facilitators of digital learning. Moreover, educators must be empowered with the training and resources needed to integrate ICT meaningfully into teaching-learning processes.

In conclusion, while the presence of digital tools in students' lives is undeniable, their effective and balanced integration into educational contexts remains a challenge. Bridging this gap is essential for nurturing digitally competent, critically aware, and future-ready learners.

The findings of this study yield several educational implications that underscore the need for a more equitable, skill-oriented, and ethically grounded approach to digital literacy. These implications are critical for curriculum planners, educators, and policymakers seeking to integrate technology meaningfully into the teaching-learning process.

- Expand Digital Access Quality: Ensure not just access to devices, but functionality, updated software, and reliable internet, especially for disadvantaged students.
- Integrate Digital Literacy into Curriculum: Embed skills such as safe browsing, evaluating information, and ethical internet use into regular classroom instruction.
- Educate on Responsible AI Use: Teach students to use generative AI tools critically and ethically, avoiding overdependence and promoting original thinking.
- Promote Multilingual Digital Content: Develop and distribute educational resources in regional languages to overcome language barriers in technology use.
- Strengthen ICT Training for Teachers: Provide regular, practical digital pedagogy training to enhance teacher confidence and effective classroom integration.
- Engage Families in Digital Readiness: Conduct awareness programs for parents to support children's digital habits and monitor responsible screen time at home.
- Encourage Digital Wellness and Media Balance: Educate students about healthy screen habits and encourage a balance between digital use and physical/social activity.
- Ensure Equity in Advanced Digital Skills: Broaden access to coding, design, and creative tech tools to all students, not just those with better resources.

Conclusion

The findings of the research showed that students' exposure, proficiency and awareness varied across the sample for instance, a limited exposure of digital devices to a comfortably navigating using sophisticated devices. Hence, classrooms should be designed to allow learning of digital literacy skills focusing on learning to refine their searches and identifying trustworthy sources simultaneously understanding cyber security. Digital literacy skills should be integrated into the content of the curriculum at the school and teacher preparation level. Developing digital literacy is not only about knowing how to use technology. It also involves good citizenship and issues like cyberbullying, internet privacy, and correct online behaviours, thereby, encouraging positive participation in online communities. The Common Service Centres (CSCs) established under the Digital India initiative, provide digital services to rural and remote areas, promoting digital inclusion and economic development.

The students from higher socio-economic background had easy access to internet, a computer/ laptop/ mobile and tutors at home. Thus, to ensure tech-equity, it is required that the policies focus on developing infrastructure in school, colleges and other educational institutions. For instance, the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) program aims to make six crore rural households digitally literate, educating citizens on basic computer and internet usage, and the National Educational Technology Forum (NETF) provides a platform for the free exchange of ideas on technology use in education and best practices in digital learning. The implementation of the NEP 2020 is a step further in bridging the digital divide.

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Teachers' Role As Counsellor: An Evaluative Study of NISHTHA

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Abstract

NISHTHA is a largest capacity-building programme launched by the MHRD in 2019, aimed at covering 42 lakh participants across the nation. Equipping teachers with counselling skills to support students' emotional, social, and academic development is one of its objectives. The teacher plays a fundamental role in transforming the school environment into a context of well-being and in promoting young people's mental health. A number of mental health issues among children are increasing, therefore, training of school teachers to act as a counsellor is much needed. This study was conducted to know the impact of NISHTHA 1.0 training on teacher's role as first-level counsellor in elementary schools of Mizoram. A sample of 394 trained teachers from all districts of Mizoram was taken by using proportionate random sampling technique. A self-developed questionnaire was used to collect data. The findings of the study are revealing the impact of training on elementary school teacher's role as counsellor, especially in effective communication, active listening, and enabling emotional support, students' personal growth, referral and intervention facilitation, and awareness building among students. The NISHTHA 1.0 training programme has positively contributed to the transformation of school teacher as a first-level counsellor in Mizoram.

Keywords*:* NISHTHA, NISHTHA 1.0, In-service Teacher Education, Professional Development, Counselling.

Introduction

The foundation of capable youth is laid in schools and moulded by teachers. One important goal of education is to prepare the students in such way so that they can express themselves, manage their emotions, and solve their problems effectively (Tome

et al., 2020). Every teacher in a school is responsible for supporting the growth of students in cognitive, emotional, behavioural, attitudinal, and social domains (Dumitru, 2015). Teachers are expected to foster the growth of constructive and healthy minds, making students competent and skilled. To aid in nation-building, youth must be mentally healthy and adaptable to various situations. The current scenario shows a rise in mental health and adjustment issues among students. According to Balamurugan *et al.* (2024), depression is the leading mental health concern affecting children, followed by social, behavioural, and emotional problems, anxiety, psychological distress, addiction to technology, stress, social phobia, sexual and emotional abuse, violence, and attention-deficit hyperactivity disorder in India. Many factors contribute to this trend, including both parents working, nuclear family structures, easy access to technological devices, exposure to excessive digital content, and social exclusion (Sunder & Mesalia, 2023).

Children often hesitate to express their feelings and face mental health-related issues. Furthermore, parents may remain unaware of the reasons behind their children's behaviours. The situation becomes serious if it isn't addressed promptly by a skilled person. Children need guidance and counselling at all stages of education, irrespective of their developmental level. Despite the growing demand for counselling, full-time counsellors are still limited in some government and private schools in India, while most rely on part-time or visiting professionals (NCERT, 2015). Teachers interact with students daily and are often the first to notice signs of distress, behavioural changes, or academic struggles among them (Sutton & Wheatley, 2003; Gunawardena *et al.*, 2024). Teachers have a crucial role to play in identifying and addressing mental health issues among students (Rojas-Andrade *et al.*, 2024; Nalipay *et al.*, 2024); however, they feel constrained in supporting student mental health because of a lack of effective training (Giles-Kaye *et al.*, 2023).

Counselling involves conversations with a person about their problems and providing help to address them. It supports individuals with behaviour-related issues, where their emotions and motivations are important. This process helps individuals make their own decisions and choices, resolve confusion, or cope with distress in a personally meaningful and realistic way (Nkechi *et al.*, 2016). Within the realm of education, counselling can be described as the interaction that develops between a counsellor and a student experiencing indecision, confusion, or distress. It involves more than simply giving advice; it requires active listening, empathy, and guiding students through problem-solving processes (Dumitru, 2015). Counselling can be offered in both group and individual settings. Three approaches are used in schools (NCERT, 2015).

- The Specialist Approach – A full-time, trained counsellor manages counselling activities, collaborates with stakeholders, and conducts workshops.
- The Career Teacher Approach – Teachers receive short-term training to provide

career guidance alongside teaching, mainly at the secondary level.

- The Teacher-Counsellor Approach – All teachers are trained in counselling to integrate guidance into daily interactions. This model is practical in resource-limited settings.

Teachers' Role as a Counsellor

The role of a teacher has evolved significantly beyond traditional academic instruction to provide counselling and guidance. Outside that of teaching, the teachers adopt three additional roles as the coach, counsellor, and parental figure (Soldaat, 2024). Teachers, acting as counsellors, provide emotional, social, and career-related support to students, aiding them in handling personal and academic challenges. The recognition of teachers as counsellors dates back to the early 20th century when educational institutions acknowledged the necessity for holistic student development (Gysbers & Henderson, 2001). Early models of guidance counselling, shaped by vocational theories (Parsons, 1909), gradually broadened to include emotional and psychological support. The need for teachers to promote students' mental well-being alongside academic growth has been further emphasized in the 21st century (Schulz, 2011). The essential characteristics of a counsellor include being trustworthy, an active and empathetic listener, and caring (Sunder & Mesalia, 2023), which closely resemble those of a teacher. Teachers guide students in choosing a stream (Gibson & Mitchell, 2008), help resolve conflicts with peers, and assist during personal crises (Sutton & Wheatley, 2003). Teachers serve as key facilitators in shaping student behaviour and promoting positive peer interactions (Wentzel, 2012). Additionally, they support students with learning disabilities and special needs through individualised guidance (Friend & Cook, 2003). Gunawardena *et al.* (2024) reported that teachers are the first adults to deal with mental health issues and are titled them first-responders.

Theoretical Framework

The teacher acts as a first counsellor, as elaborated in educational psychology and guidance principles, where the teacher is considered the initial source for solving students' academic, emotional, social, or behavioural problems. As per the humanistic approach of Rogers's theory (1951), teachers provide empathy, active listening, and unconditional positive regard, creating a safe space where the student expresses themselves actively. According to Bandura, people actively process information and consider how their actions affect the outcomes of those actions. This theory is widely used in educational settings, where teachers use modelling to show students the behaviours and skills that they want to learn. **(**McLeod, 2011**).** Vygotsky highlighted that emotions are socio-culturally mediated through interactions with others and act as internal controllers of thought and behaviour. As first counsellors, teachers contribute

meaningfully in shaping these emotional experiences, guiding students' actions and well-being through supportive relationships. "Every emotion evidences an urge to action or a rejection of action" (Vygotsky, 1992, as cited in Faria & Camargo, 2025). According to Gysbers and Henderson (2012), the developmental guidance model emphasises the part teachers play in supporting students' professional, academic, and personal-social growth. Teachers need to have basic counselling skills, including empathy, confidentiality, and efficient communication, since they serve as academic advisers, emotional support networks, behaviour managers, and referral agents. This highlights how important it is to have professional training and collaborate with licensed counsellors in order to improve students' overall well-being.

Indian Educational Policies and Commission Perspective on Counselling

The Secondary Education Commission (1964-66) recommended that guidance should be an integral part of education, beginning from the lowest class in the primary school level. It also suggested an in-service course of guidance for primary school teachers. Meanwhile, the National Policy of Education (NPE, 1986) and the Programme of Action (POA, 1992) linked guidance services to the vocationalisation of education. The National Curriculum Framework for School Education (NCFSE, 2000) mentioned guidance services primarily for assisting students in choosing courses and selecting suitable careers at the school leaving stage; however, the **National Curriculum Framework (NCF, 2005)** brings to light the importance of guidance and counselling in facilitating the holistic development of students across all school stages. Furthermore, the NCF (2005) advocates for the integration of guidance and counselling into **teacher education**, equipping educators with essential counselling skills to support students in academic, personal, and social matters. The National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA), launched by the Ministry of Human Resource Development (MHRD) in 2019, is intended at building the capacity of elementary school teachers. One of its key focuses is promoting **social-emotional learning**, **inclusive education**, and **health and well-being** (MHRD, 2019). Recently, the **National Education Policy (NEP) 2020** emphasises the need for **trained counsellors and teachers** to support students in their academic, emotional, and career-related challenges. The policy emphasises the importance of **teacher training programmes** in counselling skills, equipping educators with the ability to identify and support students experiencing stress, anxiety, or career confusion(Ministry of Education, 2020).

Overview of NISHTHA 1.0

NISHTHA represents the most extensive capacity-building programme undertaken in India, targeting approximately 4.2 million stakeholders in the education sector. The initiative encompasses all elementary school teachers and heads of government institutions, faculty from State Councils of Educational Research and Training (SCERTs)

and District Institutes of Education and Training (DIETs), as well as functionaries and resource personnel associated with Block Resource Centres (BRCs) and Cluster Resource Centres (CRCs) across all states and union territories (MHRD, 2019). The NISHTHA 1.0 programme represents a significant step in the professional development of elementary school teachers in India. This initiative aims to strengthen the pedagogical competencies of elementary-level teachers and school leaders, with the overarching goal of elevating the standard of education within government schools.

The primary objectives of NISHTHA 1.0 include equipping educators with effective learner-centred teaching strategies, promoting inclusive education, integrating information and communication technology (ICT) and art into the classroom, and fostering a holistic approach to student development. It also addresses generic concerns such as health and well-being, school safety, and security. By concentrating on these key areas, the programme seeks to improve students' overall learning outcomes and foster a more effective, engaging educational experience. and support their emotional, social, and psychological development (MHRD, 2019). One of its objectives is to equip teachers with counselling skills to support students' emotional, social, and academic development and to be trained as First level counsellor (FLC). The elementary school teachers were trained by the State Resource Group (SRGs) in different phases. SRGs comprise a State Resource Person (SRP) and 5 Key Resource Persons (KRP). Initially, it was given in face-to-face mode and had to switch to online mode due to COVID-19. The teachers were trained in generic and pedagogical concerns. There were a total of twelve modules in the training package for elementary school teachers: Generic Concern (7), Pedagogic Concern (5), and five modules in the Leadership package for school leadership development among school heads.

The generic concern modules comprehensively address essential domains necessary for teachers to support the all-round growth and development of students. These include areas such as curriculum planning, learner-centred pedagogy, learning outcomes, inclusive education, development of personal-social qualities to foster a safe and healthy school environment, art-integrated learning, school-based assessment, health and well-being in schools, and the integration of ICT in teaching, learning, and assessment within the broader context of school education initiatives.

The modules 'Developing Personal-social Qualities for Creating a Safe and Healthy School Environment and Health and Well-Being in Schools focused on the required skills to address the students' emotional needs and address the related challenges. Their role as FLCs involves offering students a safe and empathetic space to share their concerns. Acting as FLCs, teachers help students manage stress, improve study habits, handle peer pressure, and navigate emotional challenges. Their accessibility and trustworthiness make them effective first responders to student needs. Teachers in the FLC role play a

crucial part in enhancing students' well-being by addressing their initial concerns and bridging the gap to professional assistance when necessary.

Review of Literature

Nkechi *et al.* (2016) mentioned that guidance and counselling help children stay on the right track in school and choose appropriate academic and career paths aligned with their interests and capabilities. Tome *et al.* (2020) analysed the impact of teacher training called ES'COOL on their skills and knowledge regarding mental health. The findings show that teachers improved most skills and knowledge after training, with the most significant increases observed in problem-solving, motivation, and leadership. Asuti (2021) also found that individual counselling services in schools support students dealing with personal, family, social, learning, and career issues. Canu and Sitinjak (2023) highlighted the advantages of school counselling programmes, which prepare students to face various challenges in their academic, career, and personal/social development. Gunawardena *et al.* (2024) explored the experiences of Australian school teachers in managing students' mental health issues and their need for specialised training.

Rationale of the Study

There are a few empirical studies (Curtis & Murgatroyd, 1978; Tome *et al.*, 2020) assessing the impact of in-service training programmes on teachers' roles as counsellors. Lai-Yeung (2014) also noted that literature regarding teachers' training needs in guidance and counselling is minimal. Whereas, the impact on teachers' professional development and the improvement of their pedagogical skills has been explored sufficiently (Junejo *et al.*, 2017; Tuncel & Cbanoglu, 2018; Nzarirwehi & Atuhumuze, 2019; Mahmood *et al.*, 2022; Honore *et al.*, 2022). It has been found that teachers view the organisation of such programmes and training positively and benefit from them. A few analytical studies (Nkechi *et al.*, 2016; Soldaat, 2019; Asuti, 2021; Canu & Sitinjak, 2023) highlighted the benefits of school counselling programmes. It is also suggested that specialised training should be organised for teacher counsellors.

Guidance and counselling services have been introduced to the school system and have advanced to some extent; still, they are far from adequate to meet the growing needs of students across the states in India (NCERT, 2015). To cater to the students' emotional needs, every teacher needed training to provide essential guidance and counselling on personal, academic, or social issues at the initial level. The MHRD initiated a capacity-building programme known as NISHTHA, aimed at training elementary school teachers as first level counsellors alongside other objectives. This study examines the impact of NISHTHA 1.0 on teachers' roles as counsellor with regard to communication, active listening, and providing emotional support, promoting student development, facilitating intervention, and building awareness about mental health and child protection.

Objectives of the Study

1. To examine the effectiveness of NISHTHA 1.0 training in enhancing teachers' communication skills for supporting student well-being.
2. To assess the development of active listening and emotional support skills among trained teachers.
3. To evaluate the extent to which trained teachers enable students' personal growth, motivation, and decision-making.
4. To determine the frequency with which teachers identify student concerns and facilitate referrals or interventions.
5. To determine how actively teachers engage in awareness-building and preventive education related to emotional safety, child rights, and mental health.

Research Questions

1. To what extent do trained elementary teachers demonstrate effective communication with students post-NISHTHA 1.0 training?
2. To what extent do teachers provide offer emotional support and actively listen to students facing challenges?
3. In what ways do teachers enable personal growth by enhancing students' self-esteem, motivation, and decision-making abilities?
4. How often do teachers facilitate referral processes and communicate with parents or school authorities regarding student needs?
5. To what extent do teachers engage in organizing awareness programs and sharing preventive strategies on mental health and child protection?

Methodology

Research Method

The present study employed a descriptive research design to evaluate the impact of the NISHTHA 1.0 teacher training programme on the counselling competencies of elementary school teachers in Mizoram. A quantitative survey method was adopted, as it allows for the systematic collection and analysis of numerical data to assess patterns in teacher responses regarding their roles as First-Level Counsellors (FLCs).

Sampling

The target population comprised 9,825 elementary school teachers across eleven districts of Mizoram who were trained under NISHTHA 1.0 during the period from October 2019

to January 2021. Among them, 6,938 teachers were trained through face-to-face mode, while 2,887 received training online due to the COVID-19 pandemic.

From this population, a proportionate simple random sampling technique was employed to select a representative sample of 394 trained teachers. The sample included 282 teachers from the face-to-face training group and 112 from the online training group, ensuring balanced representation from all districts.

Research Instrument

A self-developed structured questionnaire was used as the primary tool for data collection. The development of the instrument followed a systematic procedure:

- Item Construction**:** Questionnaire items were designed after an in-depth review of relevant literature and training content, particularly Module 2: Developing Personal-Social Qualities for Creating a Safe and Healthy Environment and Module 5: Health and Well-Being in Schools from the NISHTHA 1.0 training package.
- Content Validation: The preliminary draft was reviewed by experts from NCERT, NIEPA, and EDCIL (New Delhi), who were involved in preparing the training module and had successfully completed similar studies, to determine its content validity. All the suggestions obtained from the experts were incorporated into the instrument.
- Piloting of the instrument: To check the feasibility of the instrument and the study, interaction was made with the members of State Resource Group and other functionaries of DIET and SCERT, Aizawl, along with trained elementary school teachers from all zones (East, West and South of Aizawl District). On the basis of that piloting, it was found that teachers were having difficulty understanding the English language, and the Project Director and Co-project Director felt that there was a need to translate the questionnaire into the local language, i.e., Mizo, which would facilitate understanding the questions contained in the questionnaire.
- Translation Process: The questionnaire was translated into the Mizo language to ensure clarity and comprehensibility. The translated version was reviewed by two language experts from the Department of Education, Mizoram University, and finalized for administration.
- Final Draft: The translated version of the instrument was considered the final draft.

The final questionnaire included 15 items, each rated on a 5-point Likert scale ranging from *Always (5)* to *Never (1)*. These items were grouped under five functional roles of teachers as FLCs namely Communicator, Active Listener & Emotional Support Provider, Personal-Growth Enabler, Referral & Intervention Facilitator, Awareness Builder & Preventive Guide.

Table 1: *Teachers' Role as First level Counsellor*

Role	Actions	Item No.
Communicator	Ensures clear and effective exchange of information to support learning and well-being.	1, 7
Active Listener & Emotional Support Provider	Creates a safe space for expression, offering empathy and reassurance.	2, 3, 4
Personal-Growth Enabler	Encourages self-awareness, motivation, and skill development for overall growth.	5, 6, 8, 12
Referral & Intervention Facilitator	Identifies concerns and connects individuals with appropriate support services.	9,10, 11
Awareness Builder & Preventive Guide	Educates and equips individuals with proactive strategies for academic and emotional well-being	13,14,15

Procedure of Data Collection

Prior to data collection, formal approval was obtained from relevant educational authorities, namely Samagra Shiksha Mizoram and the Directorate of School Education, Mizoram. Informed consent was secured from all participating teachers. The questionnaire was then distributed to NISHTHA 1.0-trained elementary school teachers across all eleven districts of Mizoram, covering both urban and rural settings and both face-to-face and online training modes.

Statistical Techniques

The collected data was analyzed using descriptive statistics, specifically percentage analysis, to determine the frequency and distribution of teacher responses for each item and role category.

Results and Interpretation

The analysis of the role of trained elementary school students is determined by the practices that concentrate on effective communication, active and empathetic listening, students' growth, and awareness building. Table 2 presents the frequency of trained elementary school teachers' responses for the practices that determine their role as FLC.

Table 2: *Role of Trained Elementary School Teachers as FLC*

S. No.	Statements	Always (%)	Usually (%)	Often (%)	Some Times (%)	Never (%)
1.	I initiate conversations and encourage students to open up.	31.47	31.22	24.11	13.20	0
2.	The students contact me and share their feelings hurt by others.	14.47	24.11	24.37	35.53	1.52
3.	I help the students to express negative feelings.	20.30	25.89	24.37	28.43	1.02
4.	The students contact me when others bully them in school.	32.23	24.87	19.80	20.56	2.54
5.	I provide opportunities to boost the self-confidence of students.	37.06	29.44	21.57	11.93	0
6.	I provide opportunities to improve the low self-esteem of students.	32.49	30.71	23.10	13.45	0.25
7.	I converse with the students with lack of motivation.	20.81	29.70	24.11	23.60	1.78
8.	I assist students in making thoughtful decisions.	24.11	28.43	26.90	19.54	1.02
9.	I communicate with the head teacher about students needing a professional counsellor.	10.91	10.41	9.39	34.52	34.77

10.	I call the parents of maladjusted children to discuss their problems and suggest some remedies.	13.96	14.72	18.02	43.40	9.90
11.	If needed, I communicate with the parents to suggest professional counseling for their child.	11.17	13.20	16.24	35.28	24.11
12.	I organize activities to empower students to express their feelings.	16.75	19.29	28.43	32.49	3.05
13.	I organize activities to make the students aware of violence and abuse (physical, mental, and sexual).	15.48	23.60	19.80	33.25	7.87
14.	I invite experts to conduct workshops on physical and mental health-related issues.	3.55	9.39	6.60	35.28	45.18
15.	I equip students with information about the child helpline and POCSO.	10.66	18.53	17.77	45.18	7.87

The frequency of their responses is recorded under the categories Always, Usually, Often, Sometimes, and Never. The teachers who opted for Always, Usually, and Often are considered to play the concerned role frequently; therefore, their responses have been clubbed to interpret the data. The frequency of clubbed responses (Always, Usually, and Often), Sometimes, Never for the practices that determine the role of teachers as first-level counsellors is shown in Figure 1.

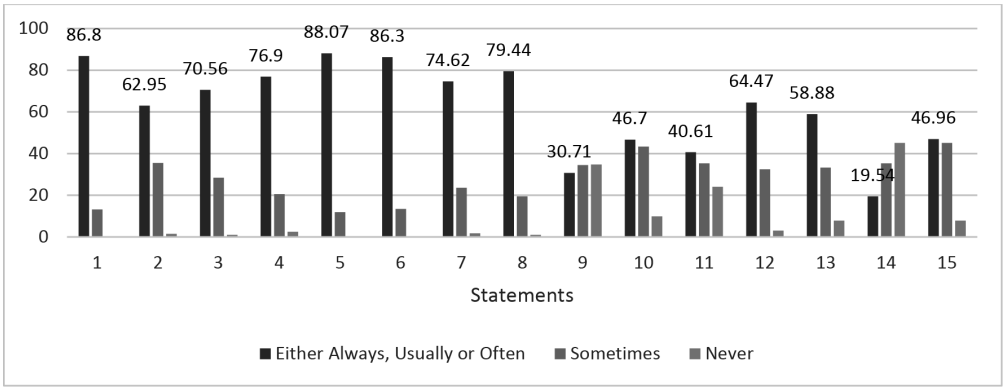

Figure 1: *Trained Elementary School Teachers as FLC*

Communication with Students (Communicator Role):

Table 2 and Figure 1 indicates that the role of communicator was assessed through items 1 and 7. The findings indicate that the vast majority of teachers actively initiate dialogue with students. Specifically, 86.8% of respondents reported that they "always," "usually," or "often" initiate conversations and encourage students to open up (Item 1). Similarly, 74.62% reported frequently conversing with unmotivated students (Item 7).

These findings reflect a high level of teacher engagement in open, supportive communication. The NISHTHA 1.0 training appears to have effectively enhanced teachers' ability to create a communicative environment conducive to student well-being.

Emotional Support and Active Listening (Active Listener & Emotional Support Provider Role):

Items 2, 3, and 4 evaluated this dimension. Around 70.56% of the teachers reported that students approach them to share emotional concerns or negative feelings. Notably, 76.9% frequently respond to bullying-related disclosures from students, and 70.56% assist students in expressing negative emotions.

These findings suggest that a significant proportion of trained teachers have developed empathetic listening skills and offer emotional reassurance. This reflects the success of the training modules in equipping teachers to serve as accessible and supportive figures for emotionally distressed students.

Personal Growth Facilitation (Personal-Growth Enabler Role):

This role was assessed through Items 5, 6, 8, and 12. Responses indicate strong performance in this area. 88.07% of teachers frequently create opportunities to boost self-confidence. 86.3% work on improving low self-esteem, 79.44% assist in decision-making and 64.47% organize activities that empower students to express themselves.

These high frequencies affirm that teachers are playing an active role in fostering students' self-awareness, confidence, and independence. The NISHTHA 1.0 training has contributed significantly to enabling teachers to nurture students' holistic growth beyond academics.

Referral and Intervention Facilitation (Referral & Intervention Facilitator Role):

Items 9, 10, and 11 relate to this dimension. Only 30.71% of teachers frequently communicate with the head teacher regarding students in need of professional counselling. 46.7% contact parents of maladjusted students and 40.61% suggest professional counselling to parents when necessary.

The findings highlight a critical gap in the referral and intervention role. While teachers are competent in emotional and communicative support, they are less likely to escalate student issues to professional support systems or involve parents actively.

Awareness Building and Preventive Guidance (Awareness Builder & Preventive Guide Role):

This dimension was assessed through Items 13, 14, and 15. 58.88% of teachers frequently organize activities to raise awareness about violence and abuse. Only 19.54% frequently invite external experts for mental health-related workshops and 46.96% provide students with information about the child helpline and POCSO. While a moderate proportion of teachers engage in awareness activities, a significant number do not regularly involve external professionals or cover legal/protective frameworks like POCSO. This indicates a partial implementation of preventive guidance roles and suggests a need for greater institutional emphasis on this area.

Discussion of Findings

The present study reveals that the NISHTHA 1.0 training programme has played a significant role in equipping elementary school teachers in Mizoram to act as First-Level Counsellors (FLCs). The findings indicate notable improvements in teachers' ability to initiate communication, provide emotional support, and foster students' personal and social growth. These outcomes align with existing literature which underscores the positive influence of in-service teacher training on professional competencies (Tome *et al.*, 2020).

A closer analysis of the role-based practices indicates that the highest frequency of engagement was observed in the domains of *communication*, *personal growth facilitation*, and *emotional support provision*. The majority of trained teachers reported frequently initiating conversations with students, boosting their confidence, and assisting in decision-making processes. These findings affirm the effectiveness of NISHTHA's modules in sensitizing teachers toward students' emotional and developmental needs.

However, the study also highlights areas of concern where teacher engagement was comparatively lower. Specifically, the roles of *Referral & Intervention Facilitator* and *Awareness Builder & Preventive Guide* showed lower frequencies of practice. Less than half of the respondents reported regularly involving school authorities or parents in referral decisions, and only a minority invited external experts for workshops on emotional well-being. These gaps suggest that while teachers have become more responsive at the interpersonal level, systemic and collaborative intervention strategies remain underdeveloped.

Furthermore, it was found that many teachers only *sometimes* shared crucial information about child protection laws, such as POCSO, with students. This raises concerns regarding students' awareness of their rights and safety, and points to the need for integrating child protection content directly into the school curriculum. These findings echo earlier research emphasizing the importance of contextualized, rights-based education (Gunawardena *et al.*, 2024; Osamwonyi, 2016).

The limited frequency of structured communication between teachers, head teachers, and parents on student mental health issues also emerged as a concern. This lack of formal discussion may impede early identification and intervention in emotional and behavioural issues among students. In light of this, the study recommends that monthly school-level meetings be institutionalized to promote collaborative support for student mental health.

Finally, while the training has succeeded in sensitizing teachers, the frequency data suggest that certain critical areas—such as referral facilitation, external collaboration, and preventive education—require focused attention through advanced, continuous professional development modules. These findings are consistent with the conclusions drawn by Curtis & Murgatroyd (1978), Osamwonyi (2016), and Honore *et al.* (2022), who emphasize the importance of ongoing capacity-building in counselling-related competencies for teachers.

Conclusion

The present study provides compelling evidence of the positive impact of the NISHTHA 1.0 training programme on enhancing the counselling competencies of elementary school teachers in Mizoram. By equipping teachers with the foundational skills of communication, emotional support, and personal development facilitation, the training has contributed significantly to preparing them for the role of First-Level Counsellors (FLCs) within the school ecosystem.

The results highlight that teachers are actively engaging in roles that involve initiating supportive conversations, helping students express emotions, boosting self-esteem, and guiding them in making thoughtful decisions. These practices reflect the effectiveness of

the NISHTHA training modules in promoting learner-centric, emotionally responsive classrooms.

However, the findings also expose areas requiring further development, particularly in referral and intervention facilitation, collaboration with external mental health experts, and awareness-building on child protection laws such as POCSO. The relatively low frequency of structured referrals and preventive initiatives indicates the need for advanced, context-specific, and regular follow-up training programmes. Moreover, the study underscores the importance of institutionalizing support structures, such as regular teacher–parent–principal meetings and school-based workshops on emotional well-being and child safety. These steps are crucial to creating a comprehensive support framework that enables early identification and timely intervention for students facing emotional or behavioural challenges.

In conclusion, while the NISHTHA 1.0 programme has laid a strong foundation for integrating counselling into the teaching profession, a multi-pronged strategy involving continuous professional development, systemic support, curriculum integration, and policy reinforcement is essential to fully realize the vision of every teacher as a proactive, first-level counsellor.

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Indian Knowledge Systems in Teacher Education Program: Perception of Prospective Teachers and Teacher Educators

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Abstract

The National Education Policy (NEP) 2020 in the Indian Teacher Education Program promotes the integration of Indian ethos and culture to cultivate holistic citizens who contribute to a progressive nation. This article seeks to explore the potential integration of the Indian Knowledge Systems (IKS) to revitalise the Teacher Education Program. This study examines how prospective teachers and teacher educators perceive the nature of IKS, its necessity, and the challenges they face regarding its integration. A mixed-methods approach was employed by using a self-constructed Likert-scale questionnaire based on IKS, which gathered insights from 113 prospective teachers of the Faculty of Education, University of Delhi, followed by two Focused Group Discussions (FGDs) with a group of 10 prospective teachers. Additionally, to triangulate the findings, in-depth individual semi-structured interviews were conducted with 11 teacher educators with their proper consent. The findings revealed that the prospective teachers and teacher educators are positive and confident about integrating IKS into the Teacher Education Program. The participants shared their concerns regarding the epistemic challenges, support system, application, reading resources, and interaction with experts that act as a barrier to fully engage with IKS. Thus, it is suggested to facilitate research in resource development to strengthen IKS in the Teacher Education Curricula. This research provides valuable insights on the major concerns that need to be catered to enhance the preparedness for teacher education.

Keywords: Perceptions of Prospective Teachers, Teacher Educators, Challenges, Integration of IKS, Teacher Education Program.

Introduction

Indian civilisation has attached a strong and enduring value to knowledge. This is particularly evident in the vast corpus of intellectual texts, which includes the largest manuscript collection in the world and covers a wide range of knowledge domains (Kapoor & Singh, 2005). It is spread across the entire spectrum, beginning with the oldest known composition of knowledge, which is *Vedic* literature, and further leading to the nation's indigenous and tribal folklore. It contributes to various fields, such as understanding the solar-centric world, planetary movements, *Panini's* universal grammar, and eighteen *Vidya Sthanas,* i.e., schools of learning (Varakhedi, 2022), including all the systematised disciplines of knowledge, customs, and practices that India has developed over the ages to a highly sophisticated degree as reported in UGC guidelines for Faculty training. Perhaps due to its distinct civilisation, India has placed a high priority on institutionalised education, exemplified by the *Gurukul* System, which has endured despite global invasions. Due to this, the vast repository of knowledge remained unexplored for several centuries. Therefore, presently, the promotion and preservation of India's rich ancient knowledge and cultural wealth must be of high priority for building the nation's identity (Singh, 2021).

The term IKS is a broad expression that encompasses almost every aspect of India. Since it has a rich cultural and archaeological heritage, literary works, and diverse social and community practices, it is a very difficult and challenging task to define what truly constitutes 'Indian knowledge'. The phrase IKS itself is composed of three key components: Indian, Knowledge, and Systems. Mahadevan *et al.* (2022), in their book 'Introduction to Indian Knowledge System: Concept and Application', elaborate on each term of IKS explicitly and provide a holistic definition. The 'Indian' refers to the undivided cultural and geographical region historically known as *Akhanda Bharata,* encompassing a shared heritage beyond modern political boundaries. 'Knowledge' in this context is both tacit and explicit, spanning spiritual, philosophical, scientific, and everyday domains. The 'System' aspect signifies a structured, codified, and interconnected body of knowledge that enables classification, understanding, and application. In this context, we can state that IKS represents a holistic, context-sensitive, and experience-driven approach to knowledge that is rooted in tradition. The Indian information system has a vast and diverse body of information, beliefs, and practices that evolved over thousands of years across the Indian subcontinent. It all began with the oral culture (Joshi, 2017). Within the context of oral culture, the tradition has created, stored, and perpetuated knowledge. The oral texts exhibit a high level of organisation, and Indian minds are considered highly taxonomic (Kapoor & Singh, 2005). The multifaceted structure of the texts reflects an organised analysis of the realm of knowledge. According to Max Müller (1883), oral traditions preserve texts in memory. Therefore, to preserve and reframe the oral culture, it consists of commentary, recension (a critical revision), reduction (a rearrangement), adaptation, translation, popular exposition, and recreation, to keep thought alive and

re-contextualised. India also constitutes the world's oldest poetry and the earliest prose *(Brahmanas),* and it has the largest body of literature, extending from lyrics to astronomy, philosophy, mathematics, and myths (Central Sanskrit University, n.d.). IKS emphasises the interdependence of every being and the universe as a fundamental element. Closer examination of IKS reveals three characteristics: completeness, compactness, and interconnectedness. Figure 1 illustrates the classification of the IKS corpus.

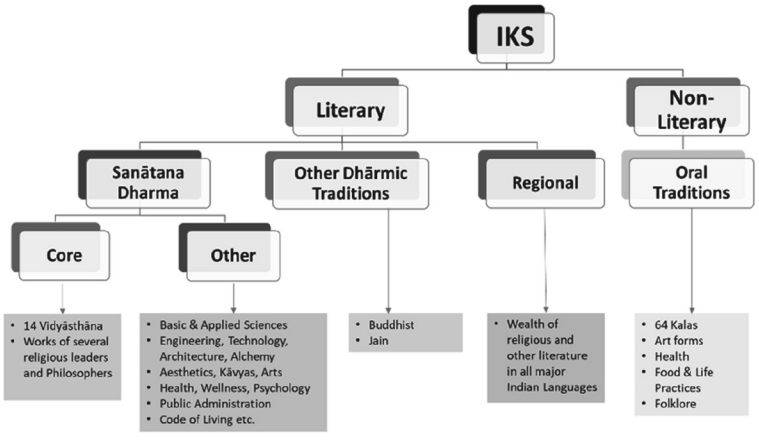

Figure 1: ***Indian Knowledge System Corpus - A classification framework***

Source: Introduction to Indian Knowledge System: Concept and Application (Book)

Over the course of time, as the knowledge developed, the ancient Indian institutions categorised knowledge of various domains into multiple disciplines, including crafts, *vidya*, and *kala*. Indian disciplinary formations constitute diverse fields such as philosophy, grammar, architecture, mathematics, astronomy, sociology *(dharma-sastra),* metrics, economy and polity *(arthasastra),* ethics, logic, geography, military science, weaponry, agriculture, trade and commerce, mining, metallurgy, shipbuilding, medicine, biology, poetics, biology and veterinary science (Kapoor & Singh, 2005). Despite a massive loss of historically documented text, each of these domains still retains a continuous and cumulative collection of texts. Prominent scholars of the ancient education system, such as *Susruta, Chakara, Bhaskaracharya, Pingala, Brahmagupta, Nagarjuna, Aryabhata, Varahamihira, Panini, Chanakya, Datta, Thiruvalluvar, Gautama, Madhava, Patanjali, Gargi, Maitreyi, Chakrapani, Sankardev,* etc., have contributed to almost all the fields of education. Numerous universities were operationalised from the period of the 6th century BCE to 1200 CE (Singh, 2019).

One such university was Nalanda in Bihar, which was an ancient centre for higher learning. It was primarily dedicated to Buddhist studies but also trained students in the fine arts, mathematics, medicine, politics, and the art of war. The university attracted students and scholars from China, Tibet, Korea, Japan, Indonesia, Turkey, and Persia. *Taxila* was

also another Buddhist centre; Scholars have been studying this knowledge since the 6th century BCE. Further centres include *Odantapuri,* in Bihar; *Jagaddala,* in Bengal; *Sharada Peeth,* in modern-day Kashmir; *Valabhi,* in Gujarat; *Pushpagiri* and *Ratnagiri,* in Odisha; and so on (Patwardhan, 2020). Over thousands of years, Indian society has developed and has passed down its centuries-old customs from one generation to the next, but in the last few centuries, this process of information transfer between generations has come to an abrupt end (UGC Guidelines, 2023). During the pre-colonial period, people portrayed Indian knowledge as superstitious, irrational, feudalistic, and devoid of a scientific temper. Due to this, modern-day society has built prejudice against traditional knowledge systems, undermining their teachings (Naik & Tari, 2003).

Despite India's independence in 1947, its ancient history, culture, and science, spanning thousands of years, were forbidden from attention. Till today, Western education has a strong hold over Indian education and has imparted the most significant influence (Varakhedi, 2022). From the abstract spiritual intuition of *Vedanta* to the complicated systems of medicine in *Ayurveda,* from the accurate calculation of time in Jyotisha to the elegance in dance and music in Indian classical arts, IKS is a multidimensional and integrated approach to viewing the universe and human life. However, colonisation of knowledge from colonial times has placed IKS outside the mainstream syllabi and curriculum (Mahesh *et al.*, 2023). Regrettably, our Indian education system lacks any connection or fails to bridge the significant knowledge contributed by Indians in various academic and cognitive domains. This prompts several questions, such as where all of this knowledge has vanished today? Have we lost this knowledge due to the lack of Indian educators who are fully rooted in Indian culture and ethos? Is it possible that studying about IKS seems no longer valuable or of interest? What has led to this? These make us ponder the role of teacher education programs, which further prepare teachers who will enable the learners to address the problems of third-world reality, where values deteriorate continuously, so that our educated people will have their roots in Indianness and will be able to become more successful global citizens by being proficient in different dimensions of knowledge to lead India in various fields. Therefore, IKS requires a heroic comeback through the harmonious introduction of contemporary education that would construct a new sphere of learning.

Locating this concern, the Indian Government took various initiatives like the establishment of the IKS division in October 2020, which has the vision that states "*to rejuvenate and mainstream Indian Knowledge Systems for the contemporary world*" and the objective is to "*completely decolonise the Indian mind by generating interest and healthy critical reverence for the unbroken knowledge traditions of Bhārata for the welfare of the world*" (IKS Division, n.d.). The government also allocated IKS' financial budget in 2023, which was approximately 20 crores (Hindustan Times, 2023). Further, the University Grants Commission (UGC) provides strict guidelines to Higher Education Institutions (HEIs) regarding the promotion of IKS-based courses, which mentions that students need to earn

5% of their total credits from the IKS domain at both undergraduate and postgraduate levels. The UGC guidelines also emphasise the need for faculty members to engage with IKS epistemologies, Sanskrit transliterations, and interdisciplinary teaching strategies.

Through these, the Government ensured the uniform readiness of the HEIs before the implementation of IKS in all spheres at all levels. Concerning Indian knowledge dissemination, the IKS division and the UGC offer courses like Vedic mathematics, Arthashastra, and Indian astronomy for Higher Education students and teachers. IKS also offers UG medicine courses in Meditation, *Yoga,* and *Ayurveda.* In 2024, the IKS division also created MoUs with various IITs and universities at the national level to promote academic and research collaboration, including promoting Indian culture and IKS and developing projects across domains. IKS has also funded several research projects for higher education faculties to facilitate and coordinate IKS-based inter and transdisciplinary work in various institutions in India and abroad, including universities and institutions of national importance (IKS Division, n.d.). UGC has provided guidelines to the Pandit Madan Mohan Malviya National Mission on Teachers Training (PMMMNMTT) to promote IKS-based orientation and training programs for faculty in Higher Education. The UGC also aims to train 1.5 million teachers in IKS by 2025 and has launched a Massive Open Online Course in IKS.

Review of Literature

Since NEP 2020 emphasised the importance of integrating IKS into the core curriculum, there has been a growing interest in research in this area recently, particularly regarding school education and higher education aimed at promoting and preserving India's rich knowledge and cultural legacy. However, the idea and plans of implementation vary across policies and disciplines. Indian knowledge is not a mere limited discipline but has also been explored in diverse domains, each with its approach. Researchers like Chandak (2024) relate to Indian psychology as a field rooted in philosophical and spiritual ideas in comparative settings with Western psychology. He had elaborated concepts such as self, ethics, and consciousness through using sources from the *Upanishads* and *Yoga Sutras.* Sobti and Arora (2025) examined a deep-rooted relationship between ancient Indian wisdom and modern architectural practice. The study discussed sacred geometry, *Vastu Shastra* and vernacular construction techniques that have long informed spatial design and sustainability.

The researchers also argue about the relevance of age-old principles to contemporary architecture, which especially deals with ecological and cultural concerns. Murtadak and Thorat (2024) explore the area of medicine, specifically *Ayurveda,* as a comprehensive health system that connects the mind, body, and spirit. The study describes traditional practices like *Tridosha* theory, pulse diagnosis, and herbal treatments, contending they

work equally and alongside modern medicine.

Integrating IKS into teacher education can provide future teachers with a perspective based on Indian culture and ethos. In the preceding paragraph, research based on IKS and disciplinary approaches was discussed, but the actual success of the integration of IKS in the education system may depend primarily on how teacher education departments prepare prospective teachers concerning the integration of IKS in their respective courses and programs. Studies have demonstrated that IKS provides a wealth of insights and practices that can revitalise different facets of teacher training (Booi & Khuzwayo, 2018). Abbasi (2024) argues that teacher education requires a shift in approach. The teachers trained with a new mindset are the ones who can reach the classroom effectively. Deivam and Joshi (2025) propose the integration of IKS directly into the domain of teacher education.

The researchers argue that IKS should not merely be viewed as content but as a value-based and philosophical framework that can transform education. Teachers must not only be trained in content but also in novel methods of teaching that incorporate local knowledge, values, and cultures. Adding to it, Sharma and Maheshwari (2024) identified significant challenges regarding the capacity building of teachers. This paper raised a key concern regarding the preparation of teachers for the successful integration of IKS. The researchers stressed the need to modify and enhance teacher training programs in terms of content knowledge and pedagogical skills to achieve positive classroom outcomes. Seminal research work states that implementing IKS in teacher education is not simply the process of glorifying indigenous knowledge, customs, and traditions; it means embracing the values of the past as a tool for promoting critical thinking, creativity, ethical practice, and an overall sense of responsibility among future educators and students (Dyer *et al.*, 2004). Indian knowledge, along with its value-based teaching pedagogies, can contribute to creating more empathic, mindful, and sustainable learning environments, which is essential.

The present study examines the perspectives of prospective teachers and teacher educators on the significance of IKS in teacher education, including its advantages and shortcomings. By capturing their experiences and concerns, the present study seeks to extend beyond theoretical discussions while providing grounded knowledge in integrating IKS in teacher education in a meaningful manner. While the reviewed research emphasizes the relevance of IKS in education, outlining its philosophical importance and policy support, there is little empirical study of how prospective teachers and teacher educators perceive its integration. As teachers are the frontline implementers of educational changes, their viewpoints are critical.

Research Question

What are the perceptions of prospective teachers and teacher educators towards IKS and the challenges faced during its integration into the Teacher Education Program post-NEP 2020?

Research Objectives

To explore the perceptions of prospective teachers and teacher educators towards the nature of IKS and the challenges faced during its integration into the Teacher Education Program post-NEP 2020.

Methodology

The researchers employed a mixed-methods approach for the study. The study was conducted with the prospective teachers and teacher educators of the Faculty of Education, University of Delhi. The study was conducted within the confines of a single university, which allowed for in-depth engagement. The variations in institutional culture, curriculum implementation, resource availability, and exposure to IKS across other universities might yield different perspectives and experiences, as well as this research work was proposed in a short duration. Since the researchers are part of this university, participants were selected using a convenience sampling technique. This allowed for an in-depth engagement and facilitated timely data collection. The study involved 113 prospective teachers who responded to the Likert-scale questionnaire, assessing their knowledge and readiness for IKS integration, along with the Focus Group Discussion (FGD) with a total of 20 participants in two slots. A multi-step procedure was followed to ensure the validity and reliability of the self-constructed five-point Likert-scale questionnaire. The content's validity was established through an expert review by three faculty members who have specialisation in teacher education and IKS from the same university.

The experts evaluated the clarity, relevance, and alignment of items with the research objectives and suggested minor revisions, such as use of simplified language and conceptual coherence, to improve the readability of the items. To assess internal consistency reliability, Cronbach's Alpha was computed using responses from the pilot sample (Taber, 2018). A pilot study was then conducted with 42 prospective teachers from the Faculty of Education within the University of Delhi. The overall reliability coefficient was found to be 0.8224, which indicates a high level of internal consistency (Gliem & Gliem, 2003) among the scale items measuring the perception of the prospective teachers regarding IKS. For further triangulation, semi-structured interviews were conducted with 11 teacher educators with their consent, seeking an in-depth exploration of their perspectives, challenges, and suggestions concerning the integration of IKS. The quantitative data obtained from a five-point Likert-scale questionnaire were analysed

using descriptive statistics. Frequencies, percentages, and mean scores were calculated using MS Excel. For Qualitative data analysis, thematic and narrative analyses were done. The transcripts from the interviews were cautiously read, followed by manual coding to identify the recurring responses. These codes were then grouped into broader descriptive themes. Thus, participants' voices were presented in the form of narratives to demonstrate the common patterns and support interpretation, thereby enhancing the depth and contextual relevance of the findings.

Result

1) Knowledge and Understanding about IKS

To see how much prospective teachers know about IKS, they were asked to share their views on its nature and their knowledge of it. Their responses are categorised in Figure 2, where the prospective teachers were asked different questions based on their knowledge about IKS: whether IKS-related content currently exists in their teacher education curricula, when they learnt about it, and whether they are familiar with the policies and guidelines that promote it in education.

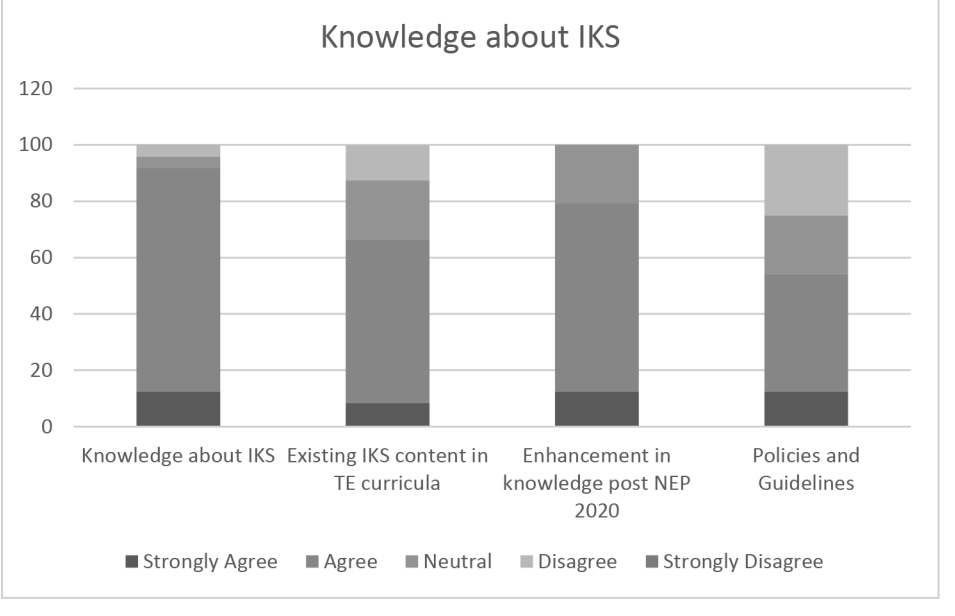

Figure 2*: Knowledge about IKS*

Source: Responses of the Participants; compiled by the researchers

The data reflect that around 91.7% of participants have basic familiarity with the term IKS, which shows that for more than three-fourths of the participants, the concept itself is not completely unknown. Only 66.6% of respondents either strongly agreed or agreed

that the existing content of IKS is included in their respective programs. A noticeable number of participants still seemed to be unclear about the presence of the IKS content in their curricula. During FGD, when the researchers tried to know about the depth of understanding of IKS, one participant (S3) responded by stating:

"I have heard about IKS, but I haven't explored it deeply…. I learned about some of the prominent Indian figures and some Indian concepts, but at a broader level… Apart from that, I don't have much knowledge about it."

In terms of the enhancement of knowledge of IKS post NEP-2020, the majority of respondents agreed that the NEP has enhanced their knowledge about IKS. Regarding the same statement of the participants during FGD, reflected on how the policy has enhanced their knowledge about IKS, S2 responded, stating that,

"I had limited awareness of IKS. After the introduction of IKS in NEP 2020, I heard discussions among my faculty and also seminars, and then I got to know about it… Currently, I just know a little bit about ancient universities like Nalanda, etc. I am also aware that ancient knowledge is present across diverse subjects. My knowledge is limited to a general overview, and I am not very familiar with its practical implications; in fact, I have not had much firsthand experience with it."

Regarding understanding about IKS from a policy perspective, only 54.2% of respondents have read the policies and guidelines related to its inclusion in education. This reveals that prospective teachers have a surface level of understanding and do not have deeper comprehension and reflective exploration.

2) Readiness for IKS

The researchers collected responses to understand how ready prospective teachers are to integrate IKS into their curricula and whether they view IKS as relevant, progressive, or outdated. Their responses are framed in Table 1, which shows their openness and acceptance of IKS. These include sections like their personal motivation for exploration and application, optimism for future benefits, and support for the reforms with regard to IKS. The verbal interpretation was done using 0.80 as the range between the two variables.

Table 1: *Mean Table of Readiness for IKS of Prospective Teachers*

Statements	**Average Mean**	**Verbal Interpretation**
Personal motivation for exploration	4.17	Agree
Support towards reforms in NEP 2020	4.08	Agree
Long-term benefit	4.17	Agree
Optimistic about the future of education through IKS integration	4.00	Agree
Practical application and integration	3.71	Agree
Open to adopting new approaches	4.00	Agree
Expectations for smooth integration in the TE program	3.83	Agree
Active engagement post NEP 2020	4.21	Strongly Agree

Source: Responses of the Participants; compiled by the researchers

The data indicates that respondents generally have a positive perception of their openness to IKS integration. The researchers found that prospective teachers had a strong sense of personal motivation for exploring IKS. They also recognised IKS would contribute meaningfully in their professional journey, and thus they stayed positive towards its long-term benefits (4.17) and about the future of education through IKS integration. The result also reflects that the participants are open to adopting the new approaches and have shown enhanced interest in attending seminars and discussions related to IKS. As a result, this aspect of active engagement (4.21) achieved the highest score among the eight indicators. Further, the responses also reflected their trust in the policy vision, and thus, they expressed support for the reforms outlined in NEP 2020. In FGD, when the prospective teachers were asked, "how do you feel about the idea of integration?" The respondent (S7) supporting NEP 2020 stated,

"I support NEP 2020, as it emphasises our traditional knowledge. I am optimistic, but still have a concern about its application… I am still open to the new approach and hope to get proper training… Currently, I believe we are only beginning to explore this topic, yet I continue to be eager and hopeful about learning more about it."

The data further reveals that their optimism is not blind; rather, they are cautious of it. The score slightly declines when it comes to practical application (3.71) and expectation of smooth integration (3.83) in the teacher education program. It shows that, despite their personal interests, prospective teachers do not feel adequately equipped and have doubts about institutional readiness. When asked about the practical applicability of IKS, S3 responded,

"I am somewhere in the middle regarding the integration of IKS… we had some discussion regarding IKS, but I'm not sure if it is enough to prepare for real-world implementation… I seek more concrete knowledge and examples to be fully confident in it."

It points out that, with increased readiness to become engaged, participants are also tempered by uncertainties as to how they would apply their engagement meaningfully in both personal and pedagogical contexts. They strive for enhanced institutional preparedness to establish a solid foundation for their learning.

3) Challenges Faced by Prospective Teachers in Integrating IKS

The researchers explored the challenges that prospective teachers face in implementing IKS in real classroom discussions within the existing curricula, focusing on their confidence, availability of reading resource materials, and institutional support. The researchers further probed deeper into their exposure and expectations for future success. Figure 3 visually represents the analysed responses, highlighting and outlining the key challenges in implementing IKS.

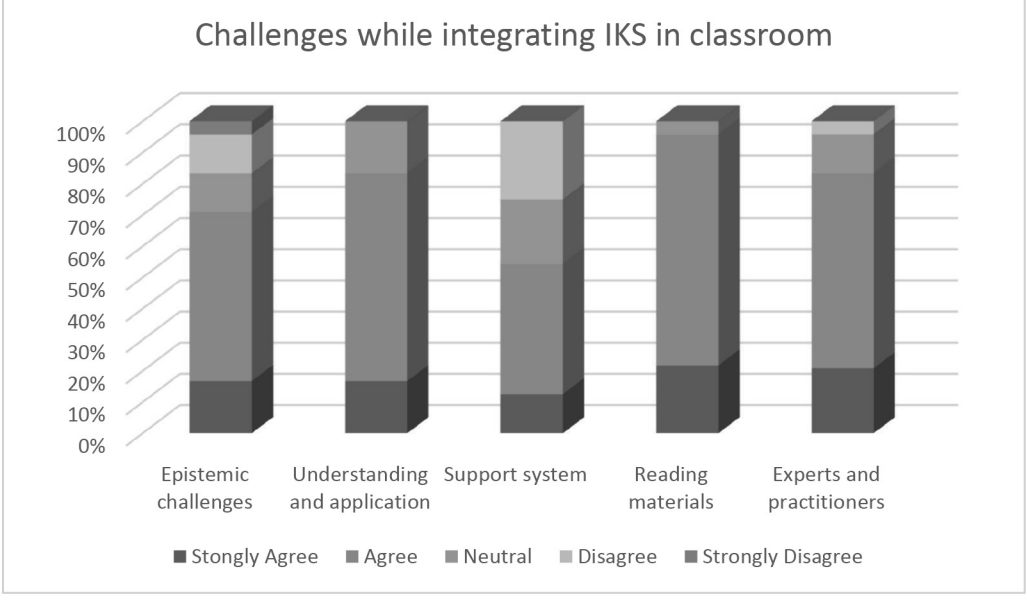

Figure 3: *Challenges While Integrating IKS*

Source: Responses of the Participants; compiled by the researchers

The findings accurately reflect the challenges that prospective teachers specifically in five key areas. A large number of respondents (70.9%) referred to epistemic challenge as a major concern, as they find it difficult to discuss Indian issues, especially when the majority of the content is based on Western knowledge. Another challenge prospective teachers encounter is the application of IKS (83.4%). This shows that prospective teachers are unsure about how to confront it or discuss it in a classroom situation, encountering a barrier between gaining theoretical knowledge and practically using it for teaching and learning. During FGD, when asked about what hinders their confidence with regard to IKS, Respondent (S5) replied:

"I am sure it will give a fresh perspective to education, but the question is how ready and confident we will be… It's not something that we are learning from childhood, so it's a question of how to blend this with what we already know… It is like shifting our mindset and accepting traditional knowledge alongside the modern approach... I hope to receive enough resources and continuous exposure to gradually learn rather than be pressured."

The issues with respect to the support system also stood out. Since prospective teachers have attended some seminars, the average response for this aspect is 54.2%, indicating that some have already begun to receive basic support, while others have not. The remaining prospective teachers are neither fully satisfied nor aware of the type of support that would be most beneficial. Reading materials were marked as a major barrier, as reported by the respondents, due to not having access to and the availability of quality reading materials on IKS. On asking about how they access the resources and what kind of challenges they face in doing so, one of the respondents (S9) replied:

"For me, finding the right resource and support is challenging… without this, it will be difficult to gain an in-depth understanding of IKS… I also think teachers will struggle to fit into subjects they already know, as most of our resources focus on modern education… It is a great initiative, but I fear that if there is no proper guidance, we may end up feeling lost… It will require a tremendous effort and willingness from both the institution and the students."

Similarly, respondents identified the lack of access to experts' and practitioners' guidance related to IKS for additional support (83.3%) as a significant challenge. Though the interest has grown, what limits the learning opportunities is the combined issue that needs to be catered to acutely.

4) Perception of Teacher Educators Towards Integration of IKS and Challenges Faced

The teacher educators were interviewed with questions focused on their understanding and the idea of the integration of IKS in education as proposed by NEP 2020. The researchers covered various aspects, such as the relevance of the content, policy direction, classroom implementation, and professional development in the context of IKS. When asked about their view regarding the current educational reforms, most of the teacher

educators acknowledged the pathways that NEP has opened to incorporate IKS into mainstream education. Supporting this, Teacher Educator No. 3 said:

"… NEP 2020 has indeed focused on the integration of IKS in education at such a large level… this will surely change the way of teaching and learning, focusing primarily on Indian knowledge…"

Also, Teacher Educator No. 7 emphasised that policy promotes cultural significance and thus said:

"In every way, the present education policy is unique as it brings the idea of integration of the knowledge of India… It is in many ways going to make us feel proud about our knowledge system…"

Their narratives reveal that they consider policy not only as a change maker of the education system, but a step towards making education more culturally rooted. Further, the teacher educators were asked about their concerns related to IKS; they noted a gap in the theoretical and practical aspects. Teacher Educator No. 6 responded:

"… Although the present curricula integrate some topics of IKS during classroom transactions, I feel that they lack in meaning-making and further the practical applications of IKS in real classroom situations…"

This reflects that the struggle of practical application is real, and even teacher educators find it difficult to make the content relevant and applicable in the classroom discussion. This was also highlighted by Teacher Educator No. 10 as she shared:

"I have been teaching for 19 years, but somewhere I lack in comprehending and transacting IKS content in the classroom… but the point of relief is that the training programs for the faculties… It is making me more aware of the integration of Indian knowledge into present curricula."

This indicates a need for more structured support and facilitation of meaningful professional development programs to confidently discuss IKS among the students and for long-term sustenance.

Discussion and Conclusion

The present study offers meticulous insights into how the prospective teachers and teacher educators perceive the idea of the integration of IKS in teacher education. While NEP 2020 has taken a significant step to restore and revive the epistemological dignity of India's intellectual tradition, its ground-level translation still remains uneven and complex. When it comes to integration, the discussion revolves around one fundamental question: how can we reorient education to represent the Indian knowledge tradition without limiting it to tokenism or symbolic inclusion? Integration requires varying levels

of preparedness on the ground. In the present study, the participants have recognized the importance of IKS and supported the changes it proposes. The participants largely agree that IKS can play a vital role in making education more holistic and sustainable. The study of Deivam and Joshi (2025) also states that IKS aptly fits to address the skills of the 21st century, as it has the potential to equip educators with ethical standards and local sensibilities. One of the observations that came out of this study is that the prospective teachers had only surface-level knowledge of IKS. Most participants were not able to articulate what it encompassed and how it could be practically implemented; this gap has also been highlighted by researchers like Bambhaniya *et al.* (2025). It is really important to have conceptual clarity; otherwise, IKS will remain like a hollow promise within the educational discourse. In the study, where many acknowledged that learning about IKS would be enriching, they also expressed hesitation towards their preparedness.

Many others also questioned the education system, whether it was really ready to equip them with guidance and resources. This ambivalence is necessary to recognise, as it does not reflect resistance but indicates institutional scaffolding. As Patwardhan (2020) has argued, the successful integration of IKS cannot be left to an individual's enthusiasm but must be structurally framed in curriculum design and textbooks. Further, we found that the concern is not just with resources or institutional, but also about a shift in mindset. It seemed challenging to the prospective teachers to blend both traditional and Eurocentric world views. This cognitive dissonance that they experience is a byproduct of the decades of policies and epistemologies that have been shaped by following the Western frameworks.

Varakhedi (2022) has also discussed that the dominance of Western education has marginalised the Indian ways of knowing. Equally important is the point of view of the teacher educators. Their narratives, though, expressed pride about IKS, but they also revealed their own struggles in incorporating IKS into classroom teachings. The teacher educators pointed out constraints such as a lack of updated curricular material, insufficient time for interdisciplinary planning, and limited institutional encouragement (Dey, 2025; Khan, 2025; Misal, 2024). This points to a deeper institutional responsibility that needs to be catered because teacher educators cannot be expected to integrate transformative curricula without them being transformed at first hand. Therefore, the teacher educators themselves need opportunities to unlearn and relearn the contextual relevance of IKS within their own discipline.

The present study suggests that the institutions should create a culture of dialogue and shared learning. A phased and pedagogically grounded approach, starting from awareness to application, should be brought into action where students are not just taught but are also given chances to practically blend the traditional and modern knowledge into their lesson plans to further share it with their peers and during school

internship sessions. In conclusion, it is not just about mere policy implementation but about rethinking how future teachers are prepared who honour the past. The policies and varied guidelines pave the way for building an education system that exclusively portrays the diverse realities of India, but it is the responsibility of all the stakeholders and individuals associated with it to consider how we define knowledge, what we take into class, and whose voices we prioritise in our classroom.

Future Directions for Research

1. The future studies should consider involving multiple universities across different geographic and socio-cultural contexts to capture a more diverse and representative range of perspectives.
2. Longitudinal studies across various teacher education institutions can help trace how perceptions evolve over time, particularly in response to curricular reforms and policy shifts.

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