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About the Journal

The Primary Teacher is a quarterly journal brought out by the National Council of Educational Research and Training (NCERT), New Delhi. It carries articles and research papers on educational policies and practices, and valuable material that is useful for practitioners in contemporary times. The journal also provides a forum to teachers to share their experiences and concerns about the schooling processes, curriculum, textbooks, teaching-learning and assessment practices. The papers for publication are selected on the basis of comments received from two referees. The views expressed by individual authors are their own and do not necessarily reflect the policies of the NCERT, or the views of the editor.

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Hello Children!

If you feel uneasy about someone touching you inappropriately, you should not keep quiet. You must

1. Not blame yourself
2. Tell someone whom you trust
3. You can also inform National Commission for Protection of Child Rights through the **POCSO e-box**.

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CHILDLINE 1098 - a national 24 hours toll free emergency phone service for children in distress is an initiative of CHILDLINE India Foundation supported by Ministry of Women & Child Development



नए समाज की ओर
Towards a new dawn



Ek Kadam Swachchhta ki or

EDITORIAL

The well-known educationist John Dewey said, “Education is not preparation for life; education is life itself.” The articles in this issue reiterate what teachers already know—that education is lifelong, and that teaching a child to want to know is more important than any single lesson.

The first article titled ‘Facilitating Basic Computer Education for Primary School Students: Developing Vocabulary’ by G. Renuka Devi elaborates on how computer-based programmes function as efficient tools to aid vocabulary acquisition. The article focuses on effective strategies, collaborative learning methods, gaming-based instructions, and teacher involvement to facilitate an increase in vocabulary.

The second article ‘A Study of the Pedagogical Practices in ECCE Centres of District Dhanbad, Jharkhand’, by Dhanya Krishnan analyses the challenges faced by teachers in Jharkhand, through an exploration of a variety of pedagogical practices being followed in select ECCE centres in two blocks.

The third article ‘Developing Life Skills in Children at the Foundational and Preparatory Stages Through Environmental Education’ by Sandeep Kumar underscores the collaborative roles of the educators, parents, and policymakers in achieving the curricular goals established by NEP 2020, NCF-FS 2022, and NCF-SE 2023. The study explores the life skill development in children during the foundational and preparatory stages of education.

The fourth article titled ‘Introducing Mahatma Gandhi to Children through Narratives’ by Satya Bhushan is an overview of selected titles from children’s literature across the world, each of which provides unique insights into the life of Mahatma Gandhi and his message to humanity, particularly the ideas, of non-violence, truth, and peace, which would shape the perceptions of young readers.

The next article ‘Promoting Inclusion at the Elementary Level of Education’ by Lovely Sarkar and Surendra Yadav traces the transformations in education regarding inclusion from the Education Commission 1964–66 to the National Education Policy 2020. The article suggests measures for improvement in the implementation of equitable learning practices at the elementary level of education, addressing the varied needs of the learners.

The sixth article ‘Fostering Environmental Awareness in a Primary Grade Mathematics Classroom: A Critical Mathematics Education (CME) Approach’ by Manya Sharma and Varish aims to promote sensitivity to climate change by closing the distance between mathematics taught at schools and the environment, through developing tasks on the principles of CME. The study

further explores the role of mathematics in promoting sustainability and critical thinking. The study involves pre-task interviews, a week-long family survey of plastic use, and a statistical evidence.

The seventh article 'Parental Attitude Towards Private Pre-primary Education in Thoubal District, Manipur' by Akoijam Pete Meitei, Kh. Kesho Singh, Premlata Maisnam, and Naorem Ingochouba Singh examines parental attitudes across dimensions, such as emotional support, academic involvement, and perceived importance of early education. The research aims to provide actionable insights for policymakers and educators, guiding interventions to foster positive parental engagement in the early childhood education in private Pre-primary schools.

The journal also includes its regular features—'My Page', 'Book Review', and 'From the States'.

'Indelible Ink' is an interesting take on children's curiosity about elections. The feature focuses on the importance of explaining concepts at an age-appropriate level with a relatable vocabulary.

Fu-Ku: An Alien is the title of the book reviewed by Geyin Boli. The story focuses on the adventures of Fu-Ku, an alien who visits the planet Earth for a short while. The narratives underline the fact that if unchecked, human activities may cause the destruction of the planet.

The feature 'From the States' elaborates on the efforts of Telangana to overcome the challenges faced by young learners. During the pandemic, the Telangana state SCERT collaborated with SIET to bring out a series of digital lessons, which helped to keep up educational momentum to a great extent, and facilitated academic support to teachers.

—*Academic Editors*

CHILDREN'S BILL OF RIGHTS

A child is every person under the age of 18 years. Parents have the primary responsibility for the upbringing and development of the child. The State shall respect and ensure the rights of the child.

Dignity and Expression

- I have the right to know about my Rights. *(Article 42)*
- I have rights being a child and no matter who I am where I live, what my parents do, what language I speak, what religion I follow, whether I am a boy or a girl, what culture I belong to, whether I am disabled, whether I am rich or poor. I should not be treated unfairly on any basis. Everyone has the responsibility to know this. *(Article 2)*
- I have the Right to express my views freely which should be taken seriously, and everyone has the Responsibility to listen to others. *(Article 12,13)*
- I have the Right to make mistakes, and everyone has the Responsibility to accept we can learn from our mistakes. *(Article 28)*
- I have the Right to be included whatever my abilities, and everyone has the Responsibility to respect others for their differences. *(Article 23)*

Development

- I have the Right to a good education, and everyone has the Responsibility to encourage all children to go to school. *(Article 23, 28, 29)*
- I have the Right to good health care, and everyone has the Responsibility to help others get basic health care and safe water. *(Article 24)*
- I have the Right to be well fed, and everyone has the Responsibility to prevent people from starving. *(Article 24)*
- I have the Right to a clean environment, and everyone has the Responsibility not to pollute it. *(Article 29)*
- I have the Right to play and rest. *(Article 31)*

Care and Protection

- I have the Right to be loved and protected from harm and abuse, and everyone has the Responsibility to love and care for others. *(Article 19)*
- I have the Right to a family and a safe and comfortable home, and everyone has the Responsibility to make sure all children have a family and home. *(Article 9,27)*
- I have the Right to be proud of my heritage and beliefs, and everyone has the Responsibility to respect the culture and belief of others. *(Article 29,30)*
- I have the Right to live without violence (verbal, physical, emotional), and everyone has the Responsibility not to be violent to others. *(Article 28,37)*
- I have the Right to be protected from economic exploitation and sexual exploitation, and everyone has the Responsibility to ensure that no child is forced to work and is given a free and secure environment. *(Article 32,34)*
- I have the Right to protection from any kind of exploitation and everyone has the Responsibility to ensure that I am not being subjected to be taken advantage in any manner. *(Article 36)*

IN ALL ACTION CONCERNING CHILDREN, THE BEST INTERESTS
OF THE CHILD SHALL BE A PRIMARY CONSIDERATION

All these rights and responsibilities are enshrined in the United Nations Convention on the Rights of the Child, 1989. It contains all the rights which children have all over the world. The Government of India signed this document in 1992.

Source: National Commission for Protection of Child Rights (NCPCR), Government of India

Facilitating Basic Computer Education for Primary School Students Developing Vocabulary

G. Renuka Devi*

Abstract

Academic backgrounds affect how vocabulary grows. The advent of technology has resulted in the creation of computer-based programmes that function as efficient tools for enhancing vocabulary acquisition. This article examines the use of computational tools to enhance vocabulary among learners, concentrating on their strategy, implementation, and effectiveness.

It employs a mixed-methods approach, amalgamating both quantitative and qualitative information to evaluate the impact of the use of computers on vocabulary learning. Studies show that using computer systems in the classroom greatly improves vocabulary retention and use. The article concludes with recommendations for educators and scholars on dealing with technology to facilitate vocabulary enhancement. In the digital age, it has become more important for Primary schools to teach students how to use computers. This research investigates effective strategies to improve computer learning for young students, focusing on collaborative learning methods, gaming-based instructions, and teacher involvement. The study underscores the importance of suitable age, knowledge, digital competence, and interaction technologies in facilitating children's cognitive development.

INTRODUCTION

Computers have become an indispensable component of modern education, especially in introducing digital skills at the Primary level. However, young learners often face difficulties due to abstract interfaces

and complex operations associated with traditional computer-based instructions. Hence, it becomes imperative to develop and employ engaging and age-appropriate strategies that simplify digital learning for children (Papadakis, 2021).

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The proliferation of digital technologies has transformed educational paradigms worldwide, particularly in Primary education, which now serves as a foundational stage for digital literacy. In a document titled 'ICT in Primary Education', the United Nations Educational Scientific and Cultural Organization (2011) emphasises the significance of digital competence in preparing students for a technology-driven society. The Organisation for Economic Co-operation and Development (OECD) Report (2015) highlights the importance of supporting students' navigation through digital texts. While traditional Primary education relied heavily on teacher-centred instruction and analogue resources, contemporary frameworks emphasise collaborative, student-centred learning facilitated by digital tools (Prensky, 2001; Selwyn, 2016).

Vocabulary acquisition is the cornerstone of language proficiency, directly impacting learners' reading, writing, and communicative competence. Advances in educational technology have introduced innovative computer-based tools that provide interactive and personalised vocabulary learning experiences. This study examines the potential of digital tools, including software and digital platforms, to enhance vocabulary development, particularly through visual data analysis using tools like Excel and Statistical Package for the Social Sciences (SPSS).

Traditional vocabulary teaching methods, for example, rote memorisation and flashcards, often fail to maintain learners' engagement or foster long-term retention. In contrast, computer-assisted tools offer interactive, multimedia-rich learning environments tailored to individual learner's needs. Extensive research underscores the importance of vocabulary in academic success, particularly during early schooling and in bilingual contexts, where learners must build vocabulary in both their first and second languages. Given these considerations, with an emphasis on improving student autonomy, engagement, and retention, this study examines the effectiveness of digital tools in vocabulary learning.

STATEMENT OF THE PROBLEM

The present study involves a comprehensive analysis of the impact of computer-based learning tools on vocabulary development within Primary education for both monolingual and bilingual learners. By analysing scholarly literature and theoretical frameworks that underpin technology-assisted vocabulary learning, the study identifies effective practices and tools—both online and offline—that facilitate this process.

The main aim of this research is to assess the efficacy of digital tools in enhancing vocabulary learning among young learners. The study aims to investigate the comparative superiority of digital tools relative to

traditional approaches, identify the most impactful technological features that support vocabulary acquisition and understand how teachers can seamlessly integrate these tools into their instructional practises to maximise student outcomes.

OBJECTIVES OF THE STUDY

The objective of this study is to investigate the role and effectiveness of computer-based learning programmes in the vocabulary development of the students of Primary schools. The research aims to examine the functioning of digital tools in enhancing vocabulary acquisition and assess their pedagogical impact on both students and teachers. It also explores the challenges encountered during implementation, and evaluates the relative merits of online versus offline vocabulary teaching applications. The present study aims to propose suggestions for enhancing the integration and usefulness of such tools in Primary education settings.

METHODOLOGY

The study draws on multiple vocabulary learning theories and pedagogical frameworks to understand how computer-based resources support language development. A mixed-methods approach was employed, combining quantitative data from standardised tests with qualitative responses from structured questionnaires. Data were collected from 25 students and teachers

respectively in various Primary schools.

Structured questionnaires assessed participants' experiences with vocabulary learning, focusing on listening, speaking, reading, and writing. Standardised language proficiency tests were used to measure actual learning outcomes. These assessments evaluated vocabulary recall, sentence construction, reading comprehension, listening skills, and oral interaction. The integration of multiple data sources allowed for a comprehensive understanding of both learner perceptions and measurable performance.

SPSS was used to process and analyse quantitative data. The software enabled effective organisation, statistical testing, and data visualisation, contributing to accurate and reliable conclusions.

Research Design

A study design which blended several methodologies was adopted to explore vocabulary learning theories and their application in classroom settings. The research involved 25 students and teachers respectively, focusing on their experiences and progress with digital tools used for vocabulary development. Data were analysed in five key areas: learning outcomes, student engagement, bilingual learner considerations, implementation strategies, and the challenges encountered. This design provided a holistic view of how technology influences vocabulary acquisition.

Participants

The study involved 50 participants from diverse Primary school settings, including a range of age groups, genders, and prior language learning experiences. This diversity helped to ensure that the findings reflect a variety of perspectives and learning contexts.

Sampling Method

A random sampling method was used to select the participants from multiple schools. This approach minimised selection bias and increased the generalisability of the results.

Data Collection Methods

Participants' vocabulary skills were assessed through structured questionnaires and standardised tests. The questionnaires included multiple-choice and Likert-scale questions to capture learners' experiences and preferences. The standardised assessments evaluated vocabulary recall, sentence construction, reading and listening comprehension, and oral interaction using new vocabulary.

This combination of self-reported and performance-based data provided a multi-dimensional view of vocabulary learning. The structured design ensured consistency and reliability in the results.

Data Analysis

Quantitative data were analysed using SPSS, which facilitated data entry,

cleaning and correlation analysis. The performance of the participants was analysed using descriptive statistics, including means, counts, and percentages.

Descriptive Statistics

The analysis began with a statistical overview of vocabulary learning methods and proficiency scores. To evaluate the progress made in vocabulary learning, average scores on both the pretest and the post-test were computed.

Correlation Analysis

It was used to explore the relationship between teaching methods, exposure to digital tools, learner motivation, and vocabulary performance. The analysis demonstrated how these variables influenced vocabulary acquisition.

Table 1
Vocabulary Development Scores

Participant ID	Pretest Score	Post-test Score
1	45	60
2	56	70
3	35	55
4	49	64
5	64	88
6	58	78
7	60	82
8	44	64

Figure 1 supports the hypothesis that educational intervention improved the post-test performance. A steady rise suggests good instruction, training, or support. Every person shows a noticeable

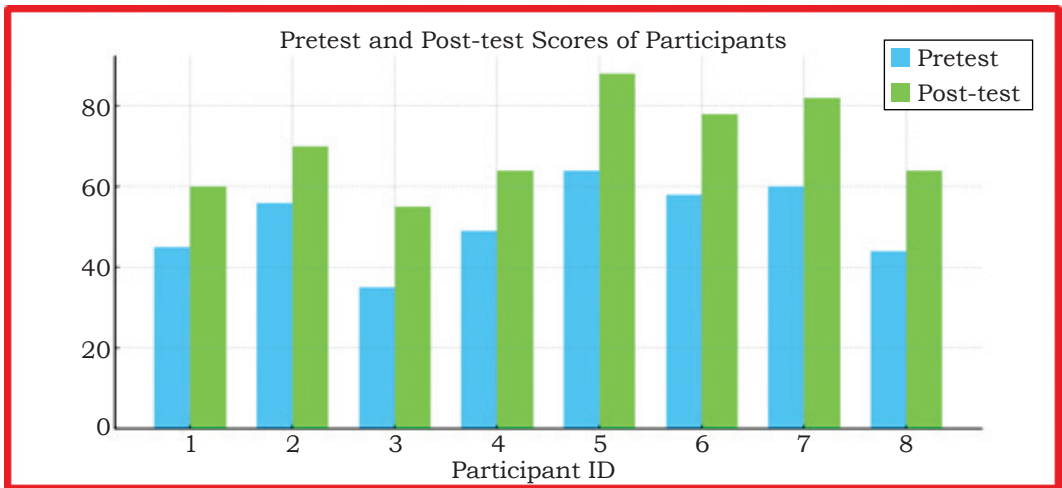


Figure 1: Vocabulary Development Scores—Pretest and Post-test

development in their post-test scores when compared to their pretest scores. This implies that the intervention resulted in an enhancement in the participants' performance. The largest improvement was seen by participant 5, who went from 64 to 88 (+24 points). The least improved is participant 1, who went from 45 to 60 (+15 points). Every participant improved by at least 15 points, showing consistent progress. Pretest scores range from 35 to 64, and post-test scores range from 55 to 88. The minimum post-test score of 55, which is greater than the minimum pretest score of 35, indicates overall uplift. The clustered bar chart format effectively highlights a comparison between the before and after.

REVIEW OF THE STUDY

Computers facilitate participatory and student-centred learning, aligning with constructivist

perspectives (Papert, 1980). Tools like educational software and gamified apps make people more likely to participate, especially when it comes to learning a language (Zheng et al., 2016). Computer-Assisted Language Learning (CALL) uses multimedia like movies and interactive stories, to help with vocabulary, grammar and pronunciation. Studies show that apps like Duolingo ABC can help Primary School students read 30 per cent faster (Vesselinov & Grego, 2016).

Investigations into CALL have demonstrated the technology's ability to enhance vocabulary learning. Stockwell (2013) showed that mobile apps that use Spaced Repetition Systems (SRS) greatly improved vocabulary recall. Chen and Li (2010) likewise underscored the importance of multimedia in facilitating improved processing of unfamiliar vocabulary. However, there

are shortcomings in understanding how to optimise these technologies for diverse learner demographics and educational contexts.

1. *Flashcard-based applications:* These apps help users memorise material using active recall and gradual repetition. Such apps let the users create, personalise, and view virtual flashcards with questions or terminology on one side and answers or explanations on the other. Flashcards are used throughout educational levels for language acquisition, exam preparation, and understanding basic topics in physics, history, and medicine. Applications like Anki, Quizlet and Brainscape frequently incorporate features, such as gamified learning, collaborative decks, multimedia support (pictures and audio), and algorithms that schedule card evaluations according to user performance.
2. *Multimedia platforms:* These platforms in academia signify digital instruments that amalgamate diverse information types, such as text, audio, video, graphics, and animations to augment the educational experiences. Platforms, such as YouTube, Google Classroom, Microsoft Teams and Moodle facilitate interactive and adaptable learning by accommodating various learning styles. For example, websites like FluentU, Duolingo, Storyjumper, Lingopie, Beelungua, Drops, Falou, Tandem, and Babbel combine audio, video, and interactive exercises.
3. *Adaptive learning systems:* Technology-based adaptive learning systems tailor learning to students' performance and needs. These systems use data analytics and AI to adjust material, tempo, and complexity in real time to help students learn. Adjustive learning, widely used in education, enhances student engagement and performance by addressing individual strengths and weaknesses, making education more efficient and student-centred. For example, Knewton, DreamBox, Smart Sparrow, Rosetta Stone and Memrise are five examples of system platforms that change the way people learn based on how well they do.
4. *Gamified learning:* It uses game elements like points, levels, badges, challenges, and prizes to motivate and engage students. Gamification makes learning better by making it more interesting and dynamic through interaction. Gamified education improves memory, problem-solving skills, and teamwork in both real and virtual classrooms. It strongly supports ongoing practice and a positive attitude towards learning in people of all ages and fields of study. Kahoot! and Wordscapes are two

examples of tools that use game mechanics to keep students interested.

5. *Online videos*: In academia, online videos have become important teaching tools that use both sound and sight to teach. They make things easier to understand, work with different learning styles, and make it easier to study on your own. Academic films and videos are used a lot in classrooms and online courses to explain difficult ideas, reinforce what students are learning, and get them more involved. Kiddle, BBC Learning, and YouTube Kids are some examples of these kinds of tools.
6. *Language learning apps*: These are digital tools that help people learn new languages by using fun and interactive methods. These apps improve learning in the classroom by giving students practice with vocabulary, grammar, pronunciation and instant feedback. These apps are made for a wide range of learners and include things like vocabulary practice, grammar exercises, speaking practice, and listening activities. Lingopie, Beelinguo, Drops, Falou, Tandem, Babbel, LingQ are some examples.
7. *Starfall*: It is an educational website for students that helps them to learn the basics of reading, phonics, and maths. It is widely used in Pre-school and

Primary School to help students learn to read and write. It helps students learn basic language and maths skills via engaging, interactive games such as activities in English language, arts, mathematics, social-emotional development and anti-bullying.

8. *ABCmouse*: It is a major early learning platform which offers many interactive reading, maths, science, music, and art activities. Schools utilise ABCmouse to teach basic skills, improve lessons, and encourage self-learning. Its fun animations, songs, and tests help teach young children at home and in school. For children aged 2 to 8, it is an award-winning educational learning programme that covers a wide range of subjects.

REVIEW OF LITERATURE

Recent research underscores the efficacy of technology-enhanced vocabulary instruction. Nation (2013) says that digital tools create interactive spaces that are not possible with traditional methods. CALL has increased student engagement by offering tailored learning experiences. Laufer and Hill (2000) show that learning vocabulary on a computer, especially with spaced repetition software and multimedia integration, helps you remember it for a long time.

Additional studies show that online learning platforms and mobile apps are helpful for learning new

words. Stockwell (2010) conducted a study that showed students preferred mobile-based vocabulary learning tools. This preference was due to factors like ease of access, adaptability and individualised learning experiences. Studies show that using technology to teach vocabulary is beneficial. Nation (2013) stresses that interactive digital environments work better than old-fashioned ways. Laufer and Hill (2000) showed that computerised vocabulary programmes that use multimedia and spaced repetition make it much easier to remember words for a long time. Platforms such as Memrise and Duolingo demonstrate significant efficacy due to their adaptability and interactive functionalities (Stockwell, 2010).

Language learning theories like Krashen's input hypothesis (1985), which emphasises the importance of comprehensible input, and Nation's (2001) framework for vocabulary learning, which includes noticing, retrieval and generative use, are the basis for vocabulary development. Computer tools align with these theories by providing contextualised input, enhancing retrieval practices and integrating interactive exercises that promote generative use.

Use of Digital Tools in the Development of Vocabulary in Primary Schools

An expanding field of academic research has examined the effects of

technology on the vocabulary learning of young learners. Several studies demonstrate positive outcomes when computer-assisted language learning methods are employed in the context of Primary education. A recent organised evaluation of 44 studies delivered between 2015 and 2023 on Technology-Assisted Vocabulary Learning (TAVL) found that students' overall vocabulary learning improved, their motivation increased, and they showed signs of 'flow' (deep engagement) during the learning process.

This implies that prudent integration of digital technologies can augment the efficacy and engagement of language acquisition in children. Traditional vocabulary training often does not hold children's interest, but technology can include interactive and game-like elements that do.

Theoretical Frameworks Underlying Technology-assisted Vocabulary Learning

A number of learning theories and frameworks provide insights into the ways in which computer-based resources might support vocabulary learning. These theoretical stances have influenced the creation of technology-enhanced vocabulary exercises and aid in the interpretation of practical advantages.

Dual Coding Theory and Multimedia Learning

Allan Paivio's Dual Coding Theory posits that individuals learn more effectively when they engage both verbal and visual modalities in

knowledge processing. In the context of vocabulary learning, this suggests that seeing an image (or animation) while simultaneously hearing or reading a new word may produce two cognitive representations (a visual image and a verbal logogen) that reinforce each other.

This method is widely used by computational technologies, which link word definitions to pictures, videos, or other visuals. According to research, dual coding works especially well for learning vocabulary in a second language because it provides a more complete context for understanding new words by combining text, voice, and images.

Models of Behaviourism with Feedback/Reinforcement

The behaviourist learning theories that emphasise practice, repetition, and reinforcement lay the foundation of some computer-assisted vocabulary exercises. Digital formats like quizzes, flashcards, and matching games have replaced traditional drill-and-practice exercises. These tools are based on B.F. Skinner's operant conditioning model, which gives students instant feedback on their answers (for example, 'Correct!' or 'Try again'), serving as a cue to correct mistakes as well as a form of positive reinforcement for the correct answers.

Constructivist and Learner-centred Education

According to the constructivist theory, students actively create

new knowledge via interaction and experience. Dynamic learning environments made possible by technology can encourage students to actively participate in their language learning. Instead of passively absorbing word lists, students may use a laptop or tablet to create a multimedia vocabulary diary, in which they record illustrative sentences or take pictures to represent new words. Some software programmes encourage exploration by allowing children to play games with contextually rich content, solve word puzzles, or click on terms within a story to access definitions.

Sociocultural Framework and Theory

According to Vygotsky's sociocultural theory, learning is easier when people connect with each other and use tools. Technology offers unique ways to help students acquire new words, especially those who speak more than one language. There are several ways that computer tools can help people learn new words. One way to help is to provide support in the dominant language. The review of literature shows that software can help children learn a new language by giving them translations or explanations in their first language. This makes it easier for young English Language Learners (ELL) to understand what words imply and may boost their confidence.

Frameworks for Motivation and Engagement

Learning vocabulary requires motivation. The Self-determination Theory developed by Deci & Ryan, and Flow Theory proposed by Csikszentmihalyi are commonly referenced in the discussions on educational technology. By providing points, levels, badges, and engaging challenges that meet learners' need for competence, autonomy, and relatedness, many computer-assisted vocabulary programmes are gamified to appeal to their innate motivation.

Instances of Computer-Assisted Vocabulary Tools (Online and Offline)

Learning new vocabulary facilitated by technology can manifest in several formats. This paper studies instances of both digital and traditional computer tools employed to enhance vocabulary in Primary education.

Offline Multimedia Vocabulary Software

One such software is the Primary i-Dictionary from Cambridge English, which is a CD-ROM-based resource that uses games, music, and animated stories to teach vocabulary. For every target word, it offers interactive exercises, spoken pronunciations, and illustrations, making learning engaging and enjoyable even when done offline. These apps frequently function as self-paced word study guides or digital pictorial dictionaries.

Teachers can install the software on classroom PCs and allow pupils to practise new vocabulary through interesting exercises, which makes them particularly helpful in classes with spotty internet connectivity.

Instructional video games played on the computer, laptop, or tablet that don't require internet connectivity are examples of additional offline resources. For instance, while working at learning centres, children can play word-definition or matching activities on a laptop or tablet that has all the content pre-downloaded by the school. Even in situations where the online resources are unavailable, these offline solutions guarantee that vocabulary practice is always accessible.

Platforms for Online Vocabulary Learning

Numerous web-based platforms and applications allow students to practise vocabulary interactively. Quizlet is a popular online flashcard system that many elementary school teachers use to assist their students in learning vocabulary. With Quizlet, teachers or students can provide a list of words to the platform and then choose from a number of study modes, such as digital flashcards, matching games, spelling tests, and even live team competitions. Studies show that Quizlet's features like game-like quizzes and instant feedback on answers, make vocabulary learning engaging, enjoyable, and approachable for young students. In a similar vein,

online tools like Vocabulary.com and Freckle offer adaptive vocabulary tests that adjust to the student's level, creating a personalised learning environment.

High-frequency or weekly vocabulary terms are commonly taught in English language arts schools using these platforms. The built-in rewards (points, progress bars) encourage students to keep practising.

Mobile Applications for Vocabulary Enhancement (Offline/Online)

Many word-learning applications are available for laptops and tablets, which are commonly used in elementary schools. Examples of apps that can function offline after they have been downloaded are Word Wizard and Endless Alphabet. They use lively images and sound to teach new words and their spellings. Others, like Lingokids or Duolingo Kids, are designed for language learning and include vocabulary modules. These programmes usually need internet access to download new lessons or sync progress. Device features can be exploited by mobile applications. A vocabulary app might, for example, use a touchscreen drag-and-drop to match words with images or record students pronouncing new words (for pronunciation practice). This tactile connection adds another learning modality. Researchers have also created experimental apps like Vocab+, a smartphone app that helps Primary students to learn vocabulary independently through practise and reflection. Mobile apps enable

vocabulary learning outside the classroom and are useful for at-home practice.

Digital Narratives and Electronic Readers

Another tool for vocabulary development is electronic storybooks with built-in dictionaries. The feature that lets students choose an unknown word in a story, hear it pronounced, see a simple definition, or illustration, is commonly found in digital libraries and e-reading apps (such as Epic! and Raz-Kids). Children's incidental vocabulary acquisition during reading activities is facilitated by this timely assistance. Both pre-reading and post-reading vocabulary exercises are offered by some storybook applications. If the content is interactive, offline e-books on laptops or PCs might have similar features. Research on oral storytelling and e-books shows that children benefit from these features. They are better able to remember words when they can click on words in a story to find their meaning.

Tools for Game-based Learning

For students in the Primary school, gamified vocabulary practice works incredibly well. Simple word puzzles and immersive adventures incorporating target vocabulary are just two examples of digital game-based learning. For a fun challenge, educators could use online games like Merriam-Webster's Word Games or Free Rice, which build vocabulary

through a quiz game that donates rice for the right answers. Bilingual contexts can also include dual-language games that reinforce translation equivalents by having students solve puzzles in both languages.

According to a recent analysis of research on digital game-based English vocabulary learning, game features (points, levels, and narratives) boost student motivation and can result in vocabulary gains, as long as the games are in line with the learning objectives. Crucially, a lot of vocabulary games are adaptable because they can be played offline as well (for instance, by being installed as computer programmes or apps). The Wordwall software is a noteworthy offline example, where students use their customised vocabulary list to play a variety of mini-games like word matching, hangman, and word search.

Once the game is set up, there is no need for the internet.

Online Collaborative Digital Platforms

Online tools for social or collaborative learning can increase vocabulary. Students can create a ‘word journal’ in which they post a new word, its definition, an image, and comment on each other’s work using Padlet or Google Classroom. Without the use of a vocabulary app, this use of general digital tools encourages community word learning. Students can practise new vocabulary with peers, or game characters in virtual worlds, or simulations used in language instruction (more common in the upper grades, though there are some simplified versions for students). The idea that social interaction and context enhance learning is supported by these resources.

Table 2
Vocabulary Learning Tools
(Offline and Online)

Participant ID	Offline Tools	Online Tools
1	2	5
2	1	3
3	3	6
4	0	3
5	4	7
6	3	5
7	2	3
8	4	6

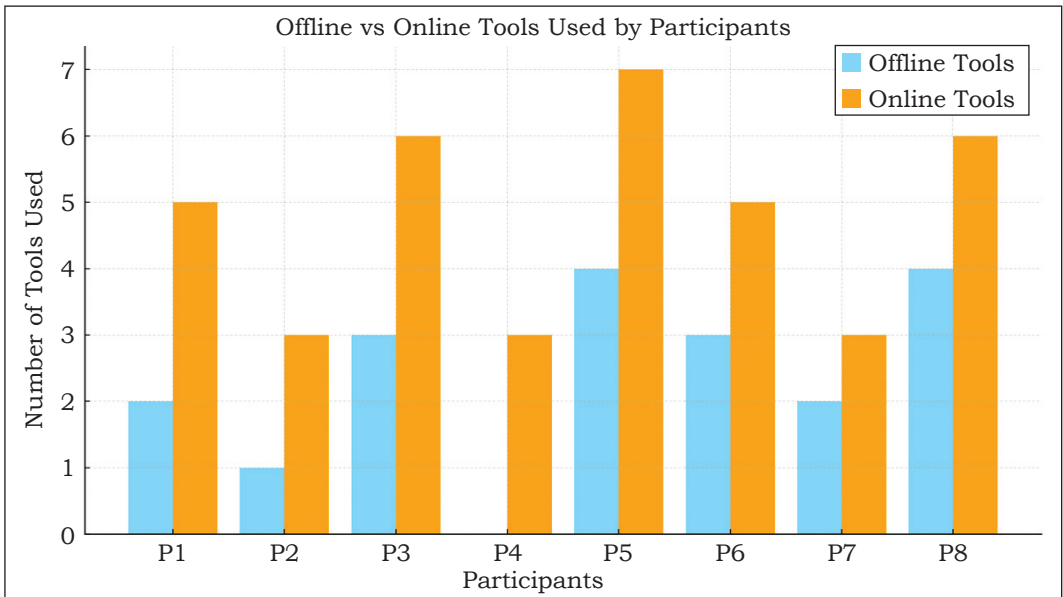


Figure 2: Vocabulary Learning Tools (Offline and Online)

Table 3
Statistical Analysis

Measure	Offline Tools	Online Tools
Mean	2.375	4.75
Standard Deviation	1.407	1.165
Minimum	0	3
Maximum	4	7

Interpretation: Participants utilised twice as many online tools (4.75) as offline tools (2.375) on an average. Compared to offline tools (SD=1.407), online tools exhibit somewhat less variation (SD=1.165), indicating greater consistency in online tool usage. The fact that participant 4 didn't use any offline tools suggests that they may be entirely dependent on digital resources. In both categories, participant 5 was the most active user.

Results of Enhanced Vocabulary Learning

Several studies show that using computer-assisted tools greatly improves young students' vocabulary knowledge. Technology-enhanced learning and conventional teaching techniques have been compared in a number of experimental studies. In vocabulary tests, the results consistently showed that the students who used digital tools performed better than their peers who did not.

For eight weeks, Asikcan (2023) gave fourth-grade students digital vocabulary exercises that included Listening, Speaking, Reading, Writing (LSRW) assignments, utilising a wide variety of tools. Following the use of digital tools, students' vocabulary breadth improved significantly. According to the preliminary assessment and subsequent assessment results, increased practice and multimodal exposure exerted a beneficial influence on their lexical acquisition. Computer-assisted vocabulary instruction generally produced a medium to large effect on vocabulary acquisition among the language learners, including Primary School students, according to a prior meta-analysis by Chen, Lin, and colleagues. Improvements are frequently associated with technological features, such as the ability to hear pronunciations repeatedly that helps with word recognition and retention, captivating graphics that explain word meanings, and spaced repetition algorithms that review vocabulary at ideal intervals.

Technology greatly increases the number and calibre of vocabulary encounters in second-language contexts, where there is little exposure to English outside the classroom. Some studies show similar learning outcomes for the technology group and the traditional group, indicating that effective teaching is an important factor, but not all studies show a significant difference. It should be noted that almost all researches

show no adverse effects of the use of vocabulary tools; at the very least, their effectiveness is on par with conventional approaches, and at the very best, they provide a notable enhancement. In elementary schools, the effective use of computer tools can improve vocabulary acquisition.

An Increase in Motivation and Engagement

Computer-based solutions are often touted for improving student engagement. Teachers and academics have found that children are naturally drawn to digital media, and view learning games and applications as play rather than work. This greater involvement leads to more task time and vocabulary practice. A qualitative study of elementary instructors using Quizlet found that the platform's game formats and fast feedback kept pupils engaged during vocabulary courses. The learners enjoyed competing in flashcard games to improve their scores or beat the timer. They practised the words more actively through engaging activities rather than traditional pencil-and-paper tasks.

Digital narrative, interactive puzzles, and vocabulary apps may reduce rote learning monotony, according to other studies.

Advantages for Bilingual Learners

In bilingual or English as Second Language (ESL) environments, computer-assisted methods can solve second-language vocabulary

acquisition issues. As mentioned in the theoretical debate, ELL students struggle with context-based word meanings and limited experience. Technology provides context and scaffolding to reduce this. Multimedia annotations (images or translations) for digital text vocabulary can help ELL students understand it.

Effective Use of Technology in Vocabulary Teaching

Studies demonstrate that the efficacy of technology-assisted vocabulary teaching is significantly influenced by the pedagogical strategies employed. Current research utilised various methodologies, underscoring the significance of careful planning and intentional incorporation of digital technologies.

Effective implementation requires alignment of curriculum objectives with online and offline activities. Prior to presenting an animal-themed narrative, a teacher may first instruct students on relevant animal vocabulary. This may be succeeded by involving students in a safari-themed online word adventure to reinforce the new terminology. To enhance learning, students may subsequently engage in an offline creative task, such as illustrating and labelling animals with a digital art programme. This integrated approach guarantees that technology is utilised not in isolation, but as an integral component of a significant learning experience.

Numerous researchers assert that vocabulary tools ought to enhance

rather than replace comprehensive language skills. The timing and integration of these tools is essential. A study involving fourth-grade students introduced vocabulary through interactive discussions and activities prior to practice on a laptop or computer. Prior exposure to the words in context, coupled with digital reinforcement, enhanced students' comprehension. Personalisation and adaptability are essential characteristics of effective vocabulary tools. Numerous computer programmes enable teachers to choose content suitable for their students' reading levels and produce vocabulary lists that correspond with ongoing lessons.

A survey finding indicates that teachers favour digital tools linking vocabulary practice to science units or weekly narratives, as relevance improves retention. Different digital applications fulfil specific educational functions. Storytelling applications facilitate the contextual use of vocabulary, spelling applications enhance orthographic skills, and quiz-based games promote memorisation. Research consistently indicates that effective vocabulary instruction requires a combination of strategies adapted to the specific needs of learners. Teachers are integral to this process by systematically organising technology-based activities, which yield optimal results when conducted under supervision. Student progress is monitored through software analytics and direct observation,

facilitating timely intervention. The careful selection, integration, and alignment of digital tools within the curriculum are crucial for optimising the advantages of technology-assisted vocabulary learning.

CHALLENGES AND VARIABLES

Using computers to learn vocabulary has benefits, but experts warn about the drawbacks. Equity and access are issues because not all students and schools have internet and access to devices. Students without a laptop or tablet or stable internet may struggle with online vocabulary practice activities. Some schools offer offline solutions (such as software printouts on paper) or enough time in class on school devices to make extra home use optional. Teachers' confidence and training are another concern. Some Primary-level teachers may be unaware of available resources or technologies. Professional development and best practices are needed to help teachers go beyond 'play a vocab game' to purposefully using technology in lessons.

Unsupervised young children may get sidetracked or utilise electronics off-task, according to a study. Teachers complained about poor monitoring and students' technology skills during the Quizlet implementation study. Without instruction, pupils might click arbitrarily or get enthusiastic and lose attention. Teachers must set goals and use lab monitoring or guided access software to keep students focused, even with the greatest tools.

Content quality also matters. Not all 'educational' apps are pedagogical. Schools must verify that the tools employ accurate and age-appropriate language that also aligns with the learning standards. If not phased out, excessive translation in multilingual environments might hinder immersion language acquisition. Support from L1 helps. Researchers like Boers et al. (2017) say that the design must prevent cognitive overload because multimedia and translation do not improve learning. According to the concept of cognitive load, sounds and animations may hurt. Choose tools with evidence-based design, clear graphics, relevant noises, and a few extras. Screen time and data privacy are modern challenges. Teachers must combine screen-based learning with offline and interpersonal learning, and ensure that the online tools comply with student data protection rules to give pupils a well-rounded education.

PROCESS OF SYNTHESIS AND ITS IMPACT

After considering all the elements, it can be said that computer resources boost elementary kids' language acquisition when used wisely. This is achieved by increasing practice, multimodal and flexible learning, and student engagement. These resources improve the practice of reading aloud and interactions, but do not replace them. The idea that technology is a 'power multiplier' for teachers enhances

vocabulary sessions by giving students a personalised and prolonged practice. Bilingual learners use technology to connect and accelerate English learning. Dual coding improves memory through imagery; motivational theory explains why children spend more time on assignments; and socio-cultural theory explains how scaffolding improves competency. That theory and actual evidence agree in this arena is noteworthy. Dual coding theory and empirical research show that the students who learn vocabulary through visual and auditory stimuli on a laptop or tablet retain more. This offers confidence to educators that the favourable impacts are not merely anecdotal, but based on actual learning.

The results showed a considerable increase in vocabulary proficiency among students who used computer-based tools. The experimental group's mean vocabulary scores increased significantly, while the control group improved somewhat. Visual data from Excel and SPSS showed that the experimental group's improvement was effective and consistent. Qualitative findings corroborated quantitative data, indicating excellent student satisfaction with digital learning tools. Students frequently expressed higher motivation and engagement due to multimedia interactivity and accessibility. However, the data also revealed initial issues associated with the pupils' diverse levels of digital literacy.

CONCLUSION

To sum up, adding computers to the Primary-level vocabulary training is a good idea because it raises test scores, makes students more interested, and helps students who are learning English. Success requires careful execution, which includes choosing high-quality tools, introducing them in a way that works, keeping an eye on how they are used, and combining them with other teaching methods. Digital platforms offer more engaging and personalised learning experiences than traditional methods. Investigating disparities in digital learning and ensuring equitable access to technology are critical areas for future research. Educators can use technology to help students learn vocabulary by giving them a large vocabulary they would need to do well in school in a multilingual, technology-driven world. They can do this in the following ways:

1. **Engagement:** Participants reported heightened motivation and satisfaction while employing computer tools.
2. **Personalisation:** Adaptive features let learners move at their own pace, meeting their own needs.
3. **Contextual learning:** Multimedia elements helped students understand words in context, which helped them remember them better.
4. **Effectiveness:** Digital tools make it much easier to learn new words than traditional methods.

5. **Important features:** Multimedia, interactivity, and personalisation are all important for success.
 6. **Integration:** Teachers should use technology in their regular lessons to make them as useful as possible.
- Future efforts should address the issues of digital equity, promote teacher training, and ensure pedagogical alignment in tool selection. With thoughtful integration, digital tools can serve as powerful supplements to traditional vocabulary teaching.

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A Study of the Pedagogical Practices in ECCE Centres of District Dhanbad, Jharkhand

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Abstract

The National Education Policy (NEP) 2020 highlights a huge learning crisis at the foundational stage. It is essential for children to acquire Foundational Literacy and Numeracy (FLN) competencies. The facilitation of FLN at the Foundational Stage starts from quality pre-schooling. Considering this, the present study adopted an exploratory research method to find out the pedagogical practices adopted in terms of development of FLN in the ECCE centres of Dhanbad district, Jharkhand. Stratified sampling method was adopted for the study. Ten ECCE centres from two blocks, namely Govindpur and Dhanbad were taken as samples. A total of 247 students and 10 ECCE teachers were part of the study. Observation and interview methods were adopted to collect the qualitative data. The findings show extensive use of conventional teaching methods, unavailability of adequate infrastructure and learning resources, and lack of professional skills among the teachers as major challenges in developing FLN skills among children.

INTRODUCTION

Education is regarded as a basic human right and hence a strong foundation in education has a positive impact on lifelong learning experiences. Studies reveal that children who get proper training during the preschool years have a better understanding,

socio-emotional development and positive attitude towards learning (Chandra, 2017). The importance of the early years of education cannot be denied as it develops confidence and school readiness among children. Conversely, a child who does not undergo preschool programme faces difficulty at the Primary level and may

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end up either being a slow learner or a drop-out (Chowdhury, 2018). The National Education Policy (NEP) 2020 also highlights the fact that over 85 per cent of a child's cumulative brain development occurs prior to the age of six, indicating the critical importance of appropriate care and stimulation of the brain in the early years. Thus, investing in early childhood, a period marked by the most rapid brain development, delivers the highest returns compared to the investments made during later stages of childhood and education (Heckman & Masterov, 2007).

Learning delays can be greatly reduced with the help of intervention in the early years (NCF-FS 2023). Unless quality pre-schooling is focused, the aim of enabling young minds to participate and flourish in the educational system throughout their lives cannot be achieved. Universal provisioning of quality early childhood development, care and education must be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade 1 are school-ready (NEP 2020). Realising its significance, the policy endorses a strong base for a Foundational Stage from 3 years of age for promoting better overall learning, development, and well-being.

In this regard, guaranteeing a caring and stimulating play-based environment for every child in the age group of 3–8 years is essential. Children enjoy playing, so, creating activities focused on play is the key to providing a joyful learning environment. Children who are

exposed to age-appropriate, physical, educational, and social activities through play-based methods learn better and grow better. However, when the quality of stimulation, support and nurturing is lacking, it can have a detrimental effect on the overall development. This signifies that the period of early childhood lays the foundation for lifelong learning and is a key determinant of the quality of adult life. That is why providing quality pre-school education is listed as one of the important goals covered under the 2030 Agenda for Sustainable Development. “Our highest priority must be to achieve universal foundational literacy and numeracy in Primary schools by 2026–2027. The rest of this policy will be largely irrelevant for such a large portion of our students if this most basic learning (for example, reading, writing and arithmetic at the foundational level) is not first achieved.” (NEP, 2020).

Consequently, the National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat Mission was launched in 2021, with a dedicated focus on attaining the goal of Foundational Literacy and Numeracy within the targeted time. This concern is evident in the first ever National Curriculum Framework for Foundational Stage (NCF-FS) 2022 developed by the National Council of Educational Research and Training (NCERT) based on the suggestions of NEP 2020. It offers an integrated curriculum

framework for children aged between 3 and 8 years. As a follow-up, the Jaadui Pitara was launched in 2022, which consists of a variety of play-based teaching-learning materials for the Foundational Stage, such as activity books and story books, worksheets, flashcards, posters, toys, etc. The wide range of resources connect the local culture and social context. Its main focus is to enable children to learn through play and fun.

Practices like play-based, toy-based pedagogy are very effective in involving young learners in the classroom. Children should feel free to explore, experiment, and experience new things. A stress-free and child-centric conducive environment enables children to feel valued, thus, providing them opportunities to talk, connect with the surroundings, and share their experiences. Use of concrete materials and manipulatives, like puzzles and games, develops problem-solving skills. Experiential learning activities integrating art, craft, music, dance, etc., helps to develop physical fitness, alertness, emotional balance, cognitive, and linguistic abilities among children, making them school-ready and motivating them for lifelong learning.

These efforts were geared towards the overarching goal of attaining FLN within the stipulated time period.

RATIONALE OF THE STUDY

Quality early learning experiences are crucial for developing foundational literary and numeracy skills, ensuring

a smooth transition from home to school. First-generation learners may not have an academic environment at home, so they may not be exposed to experiences related to literacy and numeracy. Research points that family and community also play a crucial role in building the basis for reading and numeracy (Vasoya & Vansdadiya, 2023). Therefore, conscious efforts are required to minimise the number of school dropouts. A joyful learning environment can be created through activities involving counting, colours, shapes, drawing, painting, indoor and outdoor play, puzzles, logical thinking, art, craft, music, and movement.

The aim is the integrated and holistic development of children through three developmental goals as highlighted in the NIPUN Bharat Mission (2021):

- Goal 1: Children maintain good health and well-being.
- Goal 2: Children become effective communicators.
- Goal 3: Children become involved learners and connect with their immediate environment.

Language and literacy development in early primary school years is crucial, requiring oral language development, exposure to school language including the development of listening to comprehension skills, development of emergent reading and writing skills, development of print and phonological awareness. Also, pre-number concepts, skills like comparing, seriation, classification

and pattern recognition, which form the foundation for early primary mathematics learning. These experiences can only be provided using suitable pedagogy, a range of learning resources, and a conducive and joyful learning environment.

CONTEXT OF THE STUDY

Under the NIPUN Bharat Mission, the state of Jharkhand took initiatives towards achieving the goals of Foundational Literacy and Numeracy such as development of FLN curriculum, syllabus for Preschool, Grades I, II, III, preparation of FLN workbook for students, FLN handbook for teachers, etc. Teacher training was being conducted in alignment with the objectives of the FLN Mission. A dedicated assessment tool was also prepared by the Jharkhand Education Project Council to monitor the progress of children. A monitoring team was formed to track and report district-wise the FLN achievements in Jharkhand. The present study attempts to explore pedagogical practices adopted in the Early Childhood Care and Education (ECCE) centres of Dhanbad district in Jharkhand towards achieving FLN goals.

OBJECTIVES OF THE STUDY

1. To explore pedagogical experiences of students in terms of development of FLN with respect to:
 - (i) Curricular content
 - (ii) Pedagogical strategies
 - (iii) Learning resources

- (iv) Classroom management
 - (v) Assessment
2. To find out the challenges faced by the teachers in developing FLN among students

RESEARCH QUESTIONS

1. What are the pedagogical experiences of students in terms of development of FLN with respect to curricular content, pedagogical strategies, learning resources, classroom management, and assessment?
2. What are the challenges faced by the ECCE teachers in the development of FLN?

METHODOLOGY

The exploratory research method was adopted to study the pedagogical experiences and challenges faced by the teachers in the ECCE centres of Dhanbad district in Jharkhand. Stratified random sampling technique was adopted. Among the 10 blocks in Dhanbad, two blocks were selected randomly, and five ECCE centres were selected from each block. All the students and the teachers in each ECCE centre were participants in the study. So, a total of 247 students and 10 teachers of 10 ECCE centres were taken as sample for the study.

Tools and Techniques

In order to collect relevant data for the present study, the following tools/techniques were developed and used:

1. Classroom observation
2. Interview with ECCE teachers

Data Analysis

Thematic analysis method was employed to analyse the obtained qualitative data.

MAJOR FINDINGS FROM GENERAL OBSERVATION OF THE ECCE CENTRES IN JHARKHAND

The ECCE centres run by the Government of Jharkhand are known as Anganwadis. Out of the 10 Anganwadis taken as sample, four are located in the urban areas and six are situated in the rural areas. Seven Anganwadis operate in own buildings, whereas three Anganwadis function in rented spaces.

The NIPUN Bharat guidelines recommend structuring of the ECCE centres in distinct levels (I, II, III) based on age-specific developmental stages. However, it is observed that the Anganwadis followed a multi-grade classroom model, accommodating all the children between the ages of 3–6 years in a single classroom. There is a need of separate curricular content for children belonging to different age-groups— 3–4 years, 4–5 years and 5–6 years.

The Jharkhand Government issues a suggestive timetable for the ECCE centres, with distinct school hours for summers (7 am to 11 am) and winters (9 am to 1 pm). An analysis of the scheduled timetable revealed that it is designed considering holistic development of children with inclusion of diverse activities targeting the physical,

cognitive, creative, and emotional development of children in an integrated manner. Some suggested activities are listed as routine for development of language skills and pre-number concepts. Additionally, teachers can independently plan activities to actively engage children in the classroom.

The day formally starts with a morning prayer followed by some physical exercises. Afterwards, breakfast is provided to children, accompanied by lessons on personal hygiene, such as washing hands before meals, cutting nails regularly and combing hair daily. Teachers reported that many parents have a casual approach towards their children's participation in the Anganwadi, contributing to irregularity and unpreparedness among children.

Health and well-being is one of the important aspects for the physical development of the young learners. To ensure good health, children were provided two nutritious meals—breakfast (*sooji halwa* or *gud badam*), and lunch (*rice-dal-sabzi* or *khichdi*). Physical exercise and maintenance of personal hygiene were also an integral part of the daily routine. One of the teachers said:

“Most of these children learn to brush their teeth, after coming to the ECCE centre. We teach them the importance of personal hygiene and help develop healthy habits. We also encourage their parents to take care of the hygiene of their children, like washing the face, dressing properly,

combing hair. But these are labour-class people; some are daily wagers and they leave their homes early in the morning dropping off their child at the ECCE centre. They hardly give attention to these things. They feel they can safely leave their child here. They also understand the importance of study and want their child to learn, but give little attention to the things we suggest.”

Various aspects of pedagogical experiences of the children were examined. The details are as follows:

Curricular Content

Teachers were observed to be focused on suggested activities listed in the timetable, targeting the development of cognitive, creative, and physical domain in children. Notably, no worksheets were provided to the children; instruction primarily relied on learning charts, and slates for practising reading and writing skills. At some ECCE centres, even the charts were not available. A common instructional sequence was followed across all the Anganwadis, which included teaching the English and Hindi alphabets; writing 2–3 letter words; naming objects, colours, fruits, vegetables, animals; number recognition and number names. Teachers taught children as per their own understanding without following any structured curriculum. Saturdays were reserved for drawing and singing every week. Art and craft activities were limited to annual events on special occasions like ‘Poshan Diwas’, indicating occasional creative

engagement. The activities conducted are stated below:

- Some local rhymes like *Neeche jhatke, upar patke; Ek tamaatar laal laal*, etc., known to the teacher were usually sung.
- Recognising letters and corresponding sounds, forming recognisable letters, and reading and writing of numerals was practised in the classroom.
- Prior to letter formation, children were given opportunities for pencil control exercise, including scribbling practice and proper grip.
- Picture reading and reading simple words of two or three letters was also done.

It was observed that activities related to pre-number concepts, such as classification, seriation, pairing of the objects, use of comparative vocabulary like longer—longest, short—shortest with contextual objects around them were not part of classroom practices.

Pedagogical Strategies

It was found that the conventional methods of teaching were more prevalent. The focus was on reciting and memorising letters and numbers. In most of the centres, alphabets and numbers were taught in isolation without using concrete materials to support their meaning. For example, the teacher wrote the letters A, B, C, क, ख, ग, घ and the numbers 1, 2, 3, etc., on the blackboard, read them aloud, and instructed the students

to repeat after her. Foundational literacy components such as decoding (letter-sound relationship) and phonological awareness were hardly practised.

For oral language development, children were engaged in reciting rhymes and poems. Recitation was done in groups as well as individually, but the recitation was rarely accompanied by actions. It is also observed that preference was given to children who were active. Shy and introverted children showed little participation. Methods like learning by doing, play-way, co-operative learning were rarely used in any of the ECCE centres. In most cases, the teachers resort to formal teacher-centric methodology of teaching (ASER, 2017).

Writing practice of alphabets was done by children on the slates provided. The teacher supported the children by holding their hand and guiding them in writing the alphabets. Children were involved in either copying from the board or doing some classwork (language or number work) on their slates or in notebooks (ASER, 2017). Reading and writing of numerals was the only practice adopted for the development of numeracy skills. Teacher-centric approaches were more prevalent in the classrooms, limiting exploration, experimentation, and problem-solving like use of puzzles and games. Storytelling sessions were not conducted in the ECCE centres.

However, some of the teachers told us that they do narrate stories to the

children. One of the teachers said that she used unstructured conversations for language development. She said, "I talk to them regarding their daily routine. For instance, I ask them questions like 'What did you eat yesterday?' or 'Which colour shirt are you wearing?' They love to discuss such things and everyone wants to answer. They love talking, so I involve them in such activities. They enjoy such conversations."

Learning through play is the most effective pedagogy for young children because it fills the children with joy and fun (Opere-Kumi, 2023). However, the use of play-based pedagogy was missing in most of the centres. No playground was available outside the classroom in any of the ECCE centres. Playing games was considered a separate activity rather than using it as a pedagogic medium.

Planning of Teaching

Proper planning is the first and foremost part of effective teaching. However, it was found that no prior lesson planning was done by the teachers. Most of the teachers believed that the timetable provided by the state government was enough to carry out the daily activities. However, in practice, the complete timetable was not followed.

Medium of Instruction

Instruction was provided in the language of the learner. The children spoke Khortha, Bengali, and Hindi. All the teachers were familiar with

these languages and communicated with the children in their mother tongue or used some familiar sentences in their communication to support understanding and engagement.

Experiential learning methods like learning through play, art, stories, toys, and games were least practised. Most of the teachers were unaware of effective and innovative teaching strategies. However, two teachers shared that they received training on NEP 2020, during which they learned about activity-based and play-way methods. They believed that the training was insightful and gave them several ideas to make teaching more engaging, which they claimed to have incorporated in their teaching.

Learning Resources

Eighty per cent of the Anganwadis studied have considerable resource constraints. Toys, manipulatives, worksheets, flash cards, puzzles, colours, art, and play materials were not available in most of the ECCE centres. Slate and chalk served as a primary learning resource for the children, that too with inconsistent availability. At some centres children scribbled on the floor, while some sat idle due to unavailability of slates. Teachers believed that they are unable to engage children in activities due to unavailability of learning resources.

At another Anganwadi centre, a teacher used paint and wrote rhymes, poems, and alphabets on the wall due to unavailability of charts and learning materials. She said, “There were no materials (alphabet charts, etc.)

displayed on the wall. One day I brought paint and brush and wrote these basic things on the walls that I can regularly teach to the children. Now these children are so familiar with these texts that they can find out which rhyme is written on which part of the wall even without being able to read properly.”

Teachers utilised the locally available learning materials like leaves, clay, sticks, stones, vegetables, and grains for various activities like creating objects, counting, teaching objects’ names, and separation. However, such activities were practised occasionally once or twice a year. According to the FLN Mission, such activities need to be planned on a regular basis.

Classroom Management

Most of the teachers faced difficulty in managing the classroom. The difficulty was due to various reasons like the absence of a *sahaika* (Assistant), absence of classroom norms and inability to engage students. The attendance of the students was marked by the teacher on her own without calling out names and making them a part of the process. It was observed that positive enforcement of classroom norms, like raising one’s hand before speaking in a group, or working collaboratively with others, were not found in most of the ECCE centres. In four out of the 10 centres, teachers used sticks to control disruptive children, or scolded them for shouting or not following instructions.

At three out of 10 ECCE centres, the person responsible for cooking meals for the children and cleaning the centre was absent during the visit. So, teachers were engaged in cooking, serving meals, and washing the utensils. Hence, teachers struggled to manage the class and engage children in constructive activities. Detailed activities for FLN development were not observed. Teachers at all the ECCE centres were unable to give individual attention to the students. Teachers seemed tired from managing children while also having to cook.

Dealing with Developmental Delays and Signs of Stress

Teachers informed that when young learners join the ECCE centre, they usually cry and are unable to adjust.

Through love and care, and engaging them in free-play, allowing children to attend for shorter durations helps them overcome stress. Teachers informed that they received a training module titled '*Padhai bhi, poshan bhi*' to specifically focus on nutrition, physical, and mental well-being of children. The training also emphasised on the identification of children with special needs and importance of play-based activities in early childhood development.

Physical Environment of the Classroom

Most of the ECCE classrooms lacked a print-rich environment. There were no art corners or reading corners. Only learning charts and teacher-written alphabets and rhymes were available as printed material. Moreover, the



Figure 1: Child identifying alphabets from the wall writings



Figure 2: Constraints of space

prints were not displayed at the eye level of children. A few centres had constraints of space too.

Assessment

A continuous and comprehensive assessment is considered vital to track a child's progress. It can help to identify the learning gaps, strengths, needs and interest of the children (Spink et al., 2022). The FLN Mission lays stress on School-based Assessment (SBA) by the teacher for assessment of each child's progress. The FLN Mission emphasises day-to-day observation and documentation of children's progress in terms of health and nutrition, participation and involvement in learning experiences, artwork, games, and exercises, etc. Systematic assessment using tools and techniques like anecdotal

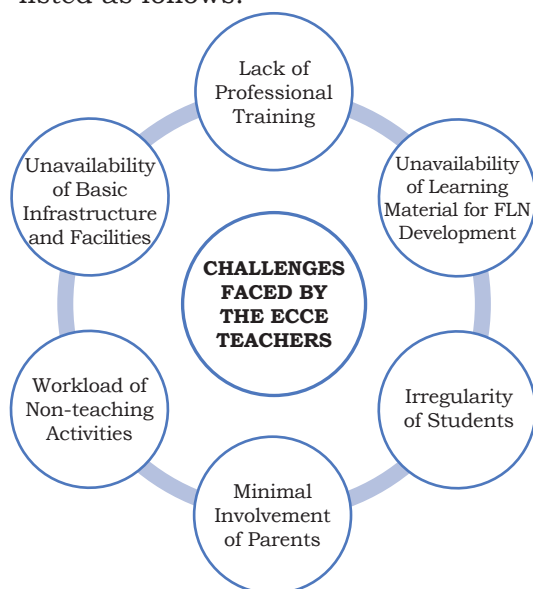
records, checklist, portfolio, artefacts like photographs of completed work, and worksheets are suggested in the FLN Mission Document. Continuous interaction with parents to monitor the child's progress is equally important.

The ECCE centres of Jharkhand primarily utilise observation as a tool for assessment. However, this assessment is informal and general in nature. Teachers solely rely on observation to track the children's learning progress to identify their strengths and weaknesses. No documentation or communication of the assessment is done. No records were being maintained to support the holistic development of a child's personality. If a child is unable to learn a particular concept, the concept is repeated in a conventional manner until the child grasps it.

Monthly meetings conducted with the mothers primarily focus on the health and vaccination of children. There is no age-specific separate grouping of children in ECCE centres—all children from age group 3–6 years sit together, following the multi-grade model, and a child is promoted to the Primary school on attainment of 6 years of age. No importance is given to the holistic assessment of children.

Challenges Faced by the Teachers of ECCE Centres in Developing FLN Among Children

There were various challenges that ECCE teachers faced in the development of FLN, and these are listed as follows:



Lack of Professional Skills

One of the biggest concerns was the lack of professional qualification or training. The ECCE teachers were

recruited through an election by the people of the local area they belong and as per their qualification. However, these teachers have not received any training beyond 10 days of training after joining as ECCE teachers.

Most of these teachers were unaware about the innovative pedagogical strategies and methods of teaching. There was lack of awareness about the NEP 2020, the new pedagogical structure (5+3+3+4) and the FLN Mission. Most of them had not participated in any workshop or seminar related to it. These teachers were trying their best, as per the extent of their knowledge and skills. The study conducted by Soni (2020) that intended to raise teachers' capacity in preschool education also supported these findings.

The ECCE teachers shared that the challenges they face on a regular basis are as follows:

1. **Workload:** Teachers were responsible for various tasks other than teaching, such as medicine distribution, voter ID card registration, collecting rations and fuel for the preparation of the mid-day meal, maintaining health and vaccination registers of pregnant women and children, and distributing food packets to pregnant women.
2. **Unavailability of basic infrastructure and facilities:** For lack of better options, damaged buildings were used as centres for conducting classes. Some of them had inadequate space. Only a few centres were newly built. In most of the centres there was

unavailability of washrooms, safe drinking water, fans, lights, and electricity. Furniture like desks and benches were also not available at most of the centres.

3. *Unavailability of learning materials:* All the ECCE teachers believed that some basic learning material like toys, colours, art material, blocks, worksheets, charts should be provided to children at regular intervals as it helps to retain the interest and attention of young learners by providing them with a stimulating environment. However, engaging learning materials were not available in most of the ECCE centres.
4. *Irregularity of attendance:* This was a challenge as children lose track of what is taught. At some of the centres, it was observed that children's irregular attendance was due to the unavailability of a *sahaika* (help or assistant). The *sahaika* is responsible for safely escorting children to and from the ECCE centres.
5. *Minimal involvement of the parents:* Although parents recognise the benefits of sending their children to school, they are unaware about their role in supporting their child. They hardly follow the academic progress of their children, and do not participate in parent-teacher meetings. Also, they lack awareness regarding the importance of school attendance and basic hygiene. It was

commonly observed that children arrive at school with unwashed faces, uncombed hair, and untidy clothes. Research suggests that a strong partnership between teachers and parents lays a strong basis for continuous learning and success of children (Kamal et al., 2022). Therefore, strengthening parental engagement is crucial for the long-term success of the young learner).

CONCLUSION

The findings suggest that systematic and conscious efforts are required for developing FLN skills among children at the ECCE centres. The training process needs to be accelerated to reform existing pedagogical practices in the ECCE centres. The teaching-learning practices need a shift from the conventional methods to the play-based pedagogy and from rote memorisation to experiential learning strategies at the ECCE centres. Teachers should encourage child-centric, activity-based approaches to create a joyful and engaging learning environment. Government should further plan for structural changes in Anganwadis to accommodate children of different age-groups at different levels with a separate curricular content for them. Besides this, awareness programmes related to FLN can also be organised to enhance the participation of parents and community in the development of FLN skills.

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3

Developing Life Skills in Children at the Foundational and Preparatory Stages Through Environmental Education

Sandeep Kumar*

Abstract

This study investigates the critical role of life skill development in children during the Foundational and Preparatory stages of education, with a specific focus on environmental education as outlined in the National Education Policy (NEP) 2020, the National Curriculum Framework for Foundational Stage (NCF-FS) 2022, and the National Curriculum Framework for School Education (NCF-SE) 2023. The research delineates the rationale for emphasising life skills, identifies key skills pertinent to these educational stages, and proposes strategic methods for their integration into the curriculum. The analysis underscores the collaborative role of educators, parents, and policymakers in achieving the Curricular Goals established by NEP 2020, NCF-FS 2022, and NCF-SE 2023, which are aimed at holistic child development and skill acquisition.

INTRODUCTION

Life skills are defined by the World Health Organisation (WHO, 1999) as “abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life”. The prioritisation of self-awareness, effective communication, and problem-solving as critical life skills are well-documented (Antony & Tripathi, 2023). These skills encompass social and interpersonal

domains (including communication, refusal skills, assertiveness, and empathy), cognitive domains (including decision-making, critical thinking and self-evaluation), and emotional coping domains (including stress management and an internal locus of control). Life skill education aims to equip adolescents with the competencies required for human development and the adoption of behaviours necessary to navigate daily life challenges effectively (Mangrulkar, Whitman, & Posner, 2001).

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UNICEF (2012) has further expanded on this definition by including the development of socio-emotional competencies that enable individuals to lead healthy, productive lives and become agents of change. The NEP 2020 underscores the importance of essential life skills, such as communication, collaboration, teamwork, and resilience, as foundational to the overarching education system. This study explores the critical role of the Foundational and Preparatory stages in fostering life skill development, with a focus on aligning with the goals set forth by the NEP 2020, the NCF-FS 2022, and the NCF-SE 2023.

ENVIRONMENTAL EDUCATION

The NCF-SE 2023 identifies environmental conservation as one of the paramount challenges of the twenty-first century. The framework advocates for developing knowledge, capacities, values, and dispositions that promote responsible environmental stewardship. Environmental education at the Foundational and Preparatory stages is designed to cultivate environmental literacy, foster compassionate attitudes towards nature, and develop an action-oriented mindset capable of addressing environmental challenges locally, nationally, and globally.

The main aims of environmental education according to NCF-SE (2023) are:

- (i) creating a strong foundation of environmental literacy, which

includes understanding the interlinkages between ecological, social, economic, and political factors;

- (ii) developing a more compassionate attitude towards the natural environment, drawing upon teachings from ancient Indian traditions and practices, the Indian Constitution, as well as scientific research on the effects of modern human activity on the environment; and

- (iii) developing an action-oriented mindset and skillset to promote environmental causes, with a solid understanding of how individual, societal, national, and global actions can help us restore the balance between humans and nature, and thereby save our planet and ourselves.

- (a) *Foundational stage*: At this stage, spending time in nature is an integral part of the pedagogy, encouraging children to observe and interact sensitively with plants, animals, insects, and birds. Stories, poems, and songs should have elements of the environment and appreciation of nature.

- (b) *Preparatory stage*: Through the study of *The World Around Us*, students begin to appreciate the interdependence between human society and the natural environment.

RATIONALE FOR PRIORITISING LIFE SKILL DEVELOPMENT

The development of life skills is essential for individuals to navigate personal, intellectual, and professional challenges effectively. The NEP 2020 prioritises holistic development at the Foundational and Preparatory stages by advocating for play- and activity-based learning, which fosters critical thinking, creativity, communication, collaboration, and problem-solving skills. Additionally, including cultural elements and real-life experiences in the curriculum enhances understanding, while instruction in the mother tongue supports effective communication and socio-emotional growth.

Investing in life skill development at these educational stages has significant long-term implications for societal well-being. Students equipped with strong life skills are more likely to become active, responsible citizens, capable of addressing societal challenges effectively. This framework prepares young learners to thrive in an increasingly complex world by fostering their ability to adapt, innovate, and contribute meaningfully to the society.

KEY LIFE SKILLS FOR THE PREPARATORY STAGE

Key life skills relevant to the Preparatory Stage include:

- *Communication*: mastery of language and expressive techniques for effective communication (Vygotsky, 1986).
- *Social skills*: the ability to collaborate and cooperate with peers and adults (Gresham and Elliott, 2008)
- *Emotional regulation*: the capacity to recognise and manage emotions in various contexts (Gross, 2015)
- *Problem-solving*: the ability to overcome obstacles through critical thinking (Bransford and Stein, 1984)
- *Creativity*: fostering imagination and innovation through experimentation (Runco, 2014)
- *Resilience*: developing adaptability to cope with setbacks (Masten and Barnes, 2018)
- *Self-regulation*: exercising control over emotions and behaviours (Zimmerman, 2000)
- *Empathy*: understanding and sharing the feelings of others (Eisenberg and Spinrad, 2014)

LIFE SKILLS AS ENVISIONED IN NEP 2020

Life skills are cultivated through the constructive processing of information, experiences, and encounters that individuals face in their daily lives and in response to the rapid changes in their environment (Ouane, 2002). The NEP 2020 emphasises communication, collaboration, teamwork, and resilience as essential life skills that must be integrated into the educational curriculum.

- *Effective communication*: Listening, speaking, reading and writing

in multiple languages are indispensable capacities. To be able to express oneself, both orally and in writing, in a lucid, well-articulated and coherent manner, is very important throughout life. This also includes the skilled use of digital media. The ability to use varied forms of communication in different contexts that are appropriate for the intended audience is very valuable in achieving all the aims (NCF-SE 2023, Section 1.3.2). Students should develop their language capacities to think critically, identify real-world problems, analyse them, make rational arguments, and work out solutions. The capacity to use language to think and communicate well in a variety of situations is critical for effective democratic, social and cultural participation (NCF-SE 2023, Section 2.1).

- *Collaboration:* At this stage, the students will spend most of their time in free-play and only a little time in structured sessions. Free-play allows students to use their imagination and develop creativity. It is widely known and accepted that free-play develops many important skills for students in the Preparatory Stage. It develops gross and fine motor skills along with auditory and visual perception. It also develops language, problem-solving ability, communication, collaboration, negotiation, and empathy (NCF-SE 2023, Section 8.6).

- *Teamwork:* It is important during the age range of 3–8 years to nurture and develop the child’s innate abilities and capacities of curiosity, creativity, critical thinking, cooperation, teamwork, social interaction, empathy, compassion, inclusiveness, communication, cultural appreciation, playfulness, and awareness of the immediate environment, as well as the ability to interact with teachers, fellow students and others successfully and respectfully (NCF-SE 2023, Section 1.1.3).
- *Resilience:* Pachauri (2014) defines “resilience as the ability to recover social, economic, and environmental systems to confront, respond, or reorganise in the face of a hazardous event”. Community resilience, rooted in individual resilience, can be fostered through education, with teachers playing a crucial role in building resilience in students, extending it to others, forming a network of resilience enriched by environmental education for sustainability.

CURRICULUM INTEGRATION FOR LIFE SKILLS

The effective integration of life skills into the curriculum at the Preparatory Stage requires a multifaceted approach that includes diverse teaching methodologies and experiential learning opportunities.

The NEP 2020 and NCF-SE 2023 suggest incorporating hands-on learning, arts-integrated education, and storytelling-based pedagogy to enhance life skill development. Teachers are encouraged to utilise the five-step learning process (*Panchaadi*) outlined in the NCF-FS 2022 to structure and plan instructional activities that promote life skills.

- (i) The NEP 2020 suggests the following ways of integrating life skills among students:
 - (a) Experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, and a storytelling-based pedagogy.
 - (b) Language teaching will be enriched through innovative

methods, incorporating gamification; apps; and cultural elements like films, theatre, storytelling, poetry, and music. Connections with relevant subjects and real-life experiences will be emphasised, promoting experiential learning in language education.

- (ii) For developing life skills among students, the NCF-FS suggests various ways of integration as illustrated below.
- (iii) For the Preparatory Stage, NCF-SE suggests the following ways of integrating life skills among students:
 - (a) Activity and discovery
 - (b) Making art
 - (c) Local games



Figure 1: Student-centric pedagogical approaches for developing life skills at Foundational Stage (NCF-FS)

- (d) Storytelling
- (e) Expression and communication
- (f) Free-play
- (g) Develop students' proficiency in fundamental mathematical concepts, such as numbers, basic operations, shapes, measurement, and data handling to foster procedural fluency, and enhance mathematical and computational thinking skills to enable students to solve real-life problems effectively.
- (h) Understanding of the physical world through asking questions, observing, experimenting, making connections, analysing, and making explanations of phenomena in their immediate environment
- (i) Individual, pair, and small group work
- (j) Observe their local art and culture, and practise basic art forms, such as rangoli, and basic crafts such as clay work, pottery (without the wheel), puppetry, folk songs, folk dances, and so on.

INTEGRATING LIFE SKILLS AMONG STUDENTS: NCERT'S RECOMMENDATIONS

Teachers should use various fun activities to help students learn and grow. They should encourage

picture reading, create portfolios of each students' likes and dislikes, and solve riddles about animals and plants. Students enjoy making bird and animal masks, reciting poems, and crafting finger puppets. They should also sketch animal and bird body parts, play group games, and share their daily routines. Students should discuss their observations from home to school, work together in group activities, and even plant and care for a tree. Additionally, they should learn about different symbols and signboards in their surroundings.

FIVE-STEP LEARNING PROCESS (PANCHAAADI) AS PER NCF-FS

In addition to integrating life skills into the curriculum, teachers can adopt the five-step learning process (*Panchaadi*) recommended by the NCF-FS. This framework serves as a practical guide for instructional planning, helping educators systematically develop essential life skills in students. These are explained on the following page.

- *Adhiti (Introduction)*: The first step is to initiate the learning process. The educator initiates by linking a fresh idea or subject with the student's existing knowledge. Through inquiry, exploration and hands-on experimentation guided by the teacher, students acquire pertinent information about the novel topic.

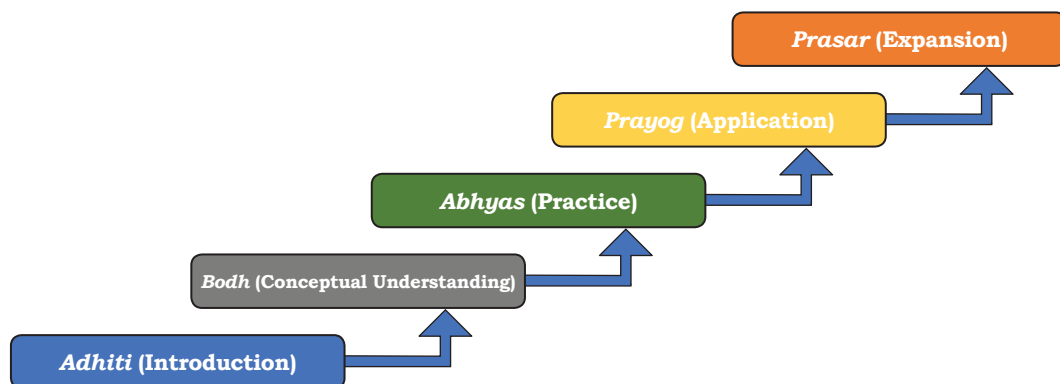


Figure 2: Five-step learning process (Panchaadi) for developing life skills among students

- **Bodh (Conceptual Understanding):** In the second step, students engage in various activities, such as play, inquiry, experiments, discussions, or reading to comprehend core concepts. The teacher closely observes this process, providing guidance and support as needed. The teaching plan outlines the concepts intended for children to learn during this phase, serving as a roadmap for the learning journey.
- **Abhyas (Practice):** The third step emphasises practising to enhance comprehension and skills through engaging activities. Teachers can arrange group work or small projects to solidify conceptual understanding and achieve competency.
- **Prayog (Application):** The fourth step involves applying acquired understanding in the child's daily life through diverse activities and small projects.
- **Prasara (Expansion):** The fifth step focuses on sharing acquired knowledge through conversations, storytelling, singing, reading together, and playing games with friends. Each new topic learned creates neural pathways in our brains, and sharing knowledge strengthens learning. Teaching what we have learned completes neural pathways, making learning clearer and more enduring.

ROLE OF TEACHERS, PARENTS, AND POLICYMAKERS

The effective development of life skills in children during the Foundational and Preparatory stages requires a coordinated effort among teachers, parents, educators, and policymakers. Teachers are central to this process, responsible for creating a classroom environment that promotes life skills through experiential and activity-based learning, aligned with

NEP 2020 and relevant curriculum frameworks. They also support socio-emotional development by modelling and facilitating positive behaviours.

Parents play a crucial role in reinforcing these skills outside the classroom by providing a supportive home environment where children can practice and apply what they learn.

Educators at the policy and administrative levels are tasked with designing curricula that prioritise holistic development and providing professional development for teachers to ensure effective implementation.

Policymakers are responsible for setting the strategic direction for life skill education, advocating for policies that prioritise early childhood development and ensuring that adequate resources and support are provided. They must also engage in continuous dialogue with stakeholders to monitor and adjust life skill initiatives based on empirical evidence. Together, these stakeholders create a sustainable foundation for future generations to thrive in a complex world.

CONCLUSION

The Foundational and Preparatory stages of education are pivotal in the development of essential life skills in children, which are crucial for their holistic growth and future success. The integration of life skill education within the curriculum, particularly through environmental education as emphasised by the National Education Policy (NEP)

2020, the National Curriculum Framework for Foundational Stage (NCF-FS) 2022, and the National Curriculum Framework for School Education (NCF-SE) 2023, provides a structured approach to nurturing critical competencies, such as communication, collaboration, resilience, and problem-solving.

This study underscores the importance of a multifaceted educational approach that combines experiential learning, cultural elements, and socio-emotional development to equip young learners with the skills necessary to navigate an increasingly complex and interconnected world. The role of educators, parents, and policymakers is central to the successful implementation of these curricular interventions, as they collaboratively work to create a supportive and inclusive learning environment that prioritises holistic development of children.

In conclusion, the strategic emphasis on life skill development at these early stages not only aligns with national educational goals but also addresses global educational imperatives, thereby preparing children to become adaptive, responsible, and productive members of society. The adoption of innovative pedagogical practices and continuous support from all educational stakeholders will be critical in realising the full potential of life skill education for the next generation.

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4

Introducing Mahatma Gandhi to Children Through Narratives

Satya Bhushan*

Abstract

From time immemorial, children have loved listening to stories—of faraway lands, of battles, of adventures of heroic figures, both legendary and real. Oral narration was followed by written script, later expressed in printed form and multimedia. Literature emerged in various genres: drama, poetry, biography, novel, and short story. However, literature written specifically for children is relatively recent, especially biographies written for children. Narratives and biographical sketches, detailing the life of an individual must take into account all available evidence to create the illusion of a life actually being lived in a certain context and age. The task becomes even more challenging when one sets out to create a book for children, as they have not yet been exposed to that depth of history which would facilitate their imagination.

While commemorating the birth anniversary of the Mahatma Gandhi, one begins to reflect on his thoughts and ideas for self and society. What then is Gandhiji's vision? More importantly, how do children perceive this vision? What is the understanding of children, in India as well as in other countries, on Gandhiji's concepts of non-violence, of Vasudhaiva Kutumbakam, and world peace?

This paper provides an overview of selected narratives on Mahatma Gandhi, each of which provides unique glimpses of his life and a message, examined within the parameters of children's literature.

INTRODUCTION

Storytelling basically evolved from oral traditions of explaining natural phenomena and transmitting survival information. These early narratives

strengthened social bonding within a community: the heroic exploits of legendary figures, of celebrating resilience and fundamental human experience.

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Children in all countries and cultures have always loved to listen to stories—of lands far away, of gods and demons, and of magic. The stories were generally narrated by grandparents and elders, and passed down from generation to generation. With the invention of scripts, oracy gradually gave way to literacy. Narratives were expressed in written script (juxtaposed by the oral) in printed form. The invention of the printing press, and decades later, the emergence of digital media added more dimensions to narration. Literature emerged in various genres, from classical drama, poetry, and biography, followed by the novel and the short story.

However, literature written specifically for children is comparatively recent. Print began with the same stories that children were familiar with: mythology, fairy tales, and folktales. In India too, a similar pattern was followed. Soon came magazines in multiple languages that catered solely to young readers. It was not long before biographies for children were published, showcasing the lives of remarkable people.

BIOGRAPHIES FOR CHILDREN

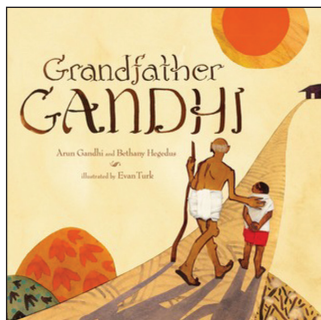
The task becomes even more challenging when one has to create a book for children. A biography provides the life of an individual in detail—childhood, family, significant events, relationships, education, career, and death. The earliest biographies were unappealing to

young readers, as the content would be too dense, and the tone was that of an adult preaching to them. Recognising this, biographies for young readers began to employ some flexibility; they may include only some events, and not necessarily ending in death. Furthermore, the author has to sieve through the collected material, and through selection of facts and structure of events, create the illusion of a life actually being lived in a certain context and age. In addition, and although not explicitly stated, a well-written biography uses an individual's life as a vehicle inter-alia to illuminate broader historical issues.

While the idea of a true story, about a real person, appeals to young minds, such narratives have a way of turning dry and pedantic. To condense an entire life within the attention span of young readers while at the same time keeping it informative and interesting, requires sensitive handling and a child-friendly approach.

This paper provides an overview of selected narratives of Mahatma Gandhi, each of which provides unique glimpses of his life and messages. They are examined within the parameters of children's literature—interesting content, attractiveness of illustrations, clarity of language, and age-appropriate vocabulary. They are also studied in terms of authenticity of the time-period portrayed, the avoidance of stereotypes and prejudice, and their relevance to contemporary times.

Grandfather Gandhi



Author : Arun Gandhi and
Bethany Hegedus

Illustrator : Evan Turk

Year of

Publication : 2010

Publisher : Atheneum

Target

Readership : 6–8 years

This is a beautifully illustrated narrative by Arun Gandhi the fifth grandson of Mahatma Gandhi, along with co-author Bethany Hegedus. The text is minimal. The author's ability to tell the story using simple words and short sentences in a way that would be readable and interesting to children, yet without dumbing down anything is indeed praiseworthy. The work is age-appropriate in terms of vocabulary and content.

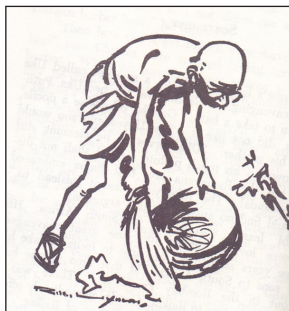
The book describes young Arun's visit along with his family to his grandfather Mahatma Gandhi's village. Arun's initial shyness is overcome by his grandfather's welcome. He praises Arun for walking the distance from the railway station, which makes the young boy happy. Arun is good at football, and played every day with the village boys. But one day, a boy pushes him in the football field,

and Arun feels overwhelming anger. He confesses to his grandfather immediately, expecting disapproval and disappointment. But Gandhiji explains that anger is like lightning. You can use it to destroy or you can use it with a sense of purpose.

Through this intensely personal narrative, a complex issue has been put into child-friendly terms. It shows how Gandhi's anger went on to lead his people to freedom. As author Bethany Hegedus says in the 'Note from the Authors' at the end, "The world we live in needs to heal—to heal from the wars that are fought, to the bullying epidemic, to mass killings by lone gunmen, to poverty, to hunger, and to issues that contribute to internal anger being outwardly expressed in violent actions". Gandhi's message never grows old.

The illustrations are the highlight of this book. Using the technique of mixed media illustrations, they are rendered in watercolour, paper collage, cotton fabric, cotton, yarn, gouache, pencil, tea, and tin foil. The art doesn't just support the text here. It weaves itself into the story, becoming impossible to separate from the story.

Bahuroope Gandhi



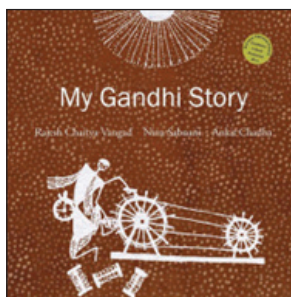
Author : Anu Bandopadhyaya
Foreword : Jawaharlal Nehru
First
Publisher : Popular Prakashan
Year of
Publication : April 1964
Reprint
Edition : NCERT, 2014
Target
Readership : 8–10 years

The simple yet flowing language adds to the book's appeal. The vocabulary used is age-appropriate, which can be quite refreshing, unlike many history books filled with jargon. The chapters are short, with headings that portray the different roles of Gandhi, such as scavenger, author, washerman, weaver, etc.

As the author says, "I wanted to present Gandhi as a willing sharer in many such labours which others do to earn their livelihood, not for the love of the work. I definitely do not want to add more persons to the band of blind worshippers of Gandhiji. But I would very much like the young of today to know that Gandhiji was not merely the Father of the Nation or the Architect of Freedom, and then criticise him."

The foreword is penned by Jawaharlal Nehru, who states that "Gandhiji functioned in a variety of ways, quite apart from politics and the public scene. The book will perhaps give us a greater insight into him." Such insights are essential for a generation that may have seen only photographs of Gandhiji in the principal's office, or in government offices, or as busts/ statues in public parks or crossroads. The book is available in other Indian languages as well.

My Gandhi Story



Author : Nina Sabnani, Ankit Chadha
Illustrator : Rajesh Chaitya Vangad
Year of
Publication : 2010
Publisher : Tulika
Target
Readership : 6–8 years

This book is the result of three minds—an artist of the Warli tradition, an animation filmmaker, and a storyteller, all of whom come together in a unique collaboration to create a very visual Gandhi story, tracing his journey from Mohandas to Mahatma.

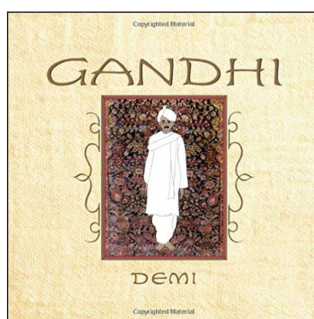
There are three voices that tell the story—Rajesh the narrator; a child who asks questions; and Gandhiji, or Bapu himself. The book talks about young Mohandas, whose mind was impacted strongly by the tale of Harishchandra, the righteous king who always upheld truth.

It recounts incidents from his childhood and the strong influence of his honest God-fearing parents. The depiction of small-town life makes young readers feel that he is 'one of us'.

Warli art is an ancient Indian tribal folk art painted on walls, often showcasing scenes of farming, playing,

or travelling, reflecting the joy and routine of everyday life. The illustrator Vangad has utilised Warli art, with its seemingly simple strokes, to make it relatable to the content. There are recurring themes of everyday life in book—of buying a ticket and going on a journey by ship and by train, of physical work, of crowds gathering to hear a speaker, a villager spinning a charkha, and so on. (In an interview, the authors recalled with amusement that during the book launch, many children initially mistook the charkha on the cover page to be an old kind of bicycle!) Additionally, photographs are juxtaposed with the illustrations, such as Gandhiji's ouster from the train in Africa, his interaction with the common people, and his determination to win justice through Satyagraha. The idea of discrimination, based solely on the colour of one's skin, is objectively presented. Readers can relate it to ideas of peace and truth, and that non-violence does not mean cowardice.

Gandhi



Author and Illustrator : Demi

Publisher : Margaret K. McElderry
Books

Year of

Publication : 2001

Target

Readership : 7–9 years

The book opens with an apt quotation from Chapter 5 of Bhagavad Gita. It then chronologically states his birth, upbringing, education, and moves on to his experiences in Africa and the Indian freedom struggle.

The short attention span of young readers, along with their limited knowledge of the world, makes for special demands on the text and illustrations. The author is conscious of the average age of the target audience of the book and has taken care to state facts of history clearly.

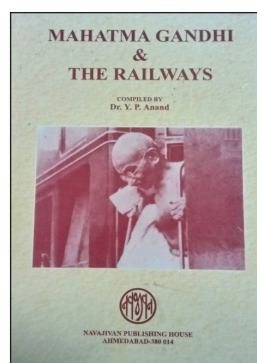
Demi's artwork is breathtaking—she designs every page with intricate illustrations incorporating gold ink to create a subtle illumination. The illustrations greatly enhance the narrative; in fact, they may be studied as paintings on their own merit.

For readers, this is a unique advantage that the book has to offer—only an author who is also the illustrator could have brought out the fantastical quality of an artistic and literary imagination merged as one.

The Author's Note gives information to young readers on how Gandhiji's idea of non-violence was an upshot of his religious upbringing. It also speaks of the admiration he evoked among world leaders. Further, it mentions his autobiography *The Story of My Experiments with Truth*, where he states that civil disobedience must be respectful and restrained. Through such statements, the book investigates the puzzle of claims and

plausible counterarguments. As such, it is different from most biographies written for children, which would treat the young reader as a passive recipient of facts. This book recognises the ability of a child to read critically.

Mahatma Gandhi and the Railways



Compiler : Y.P. Anand

Publication : Navjivan Publishing House, Ahmedabad

Year of

Publication : 2011

Target

Readership : 10–12 years

The book is compiled in 2001–2002 by Y.P. Anand, the Director of National Gandhi Museum, New Delhi, who was also a former chairman of the Railway Board, Government of India. He firmly believed that most of the writings of Gandhi, who was a distinguished traveller, is as relevant today as it was in his time. Anand has provided an introduction and context to each extract in such a manner that the whole text reads like a continuous narrative.

Children are fascinated by trains—engines, the track, crowds, railway

stations, signals, etc. The National Rail Museum, for instance, is a place of interest for school excursions and sometimes family outing as well.

This book was first brought out in April 2002, when the Indian Railways was celebrating its 150th year in India. As part of the celebrations, the Ministry of Railways decided to publish a compilation of the extracts of Gandhiji's writings related to the railways, as well as photographs.

Although the book was not written exclusively for children, it would be interesting to young readers aged 10–12 years.

Teachers and other elders are familiar with the humiliating experience that he suffered soon after his arrival in South Africa, when he was thrown out of the first-class railway compartment by a railway official, even though he had a first-class ticket. He was told by the Indian traders that such humiliating discrimination was their daily lot. This incident was a turning point in his life as he resolved to fight against injustice.

Gandhiji's experience of rail travel over the years is graphically narrated in this book. While he was still in his thirties and a practising barrister in Natal, South Africa, he came to India.

After returning to India in 1915, the primary mode of his journey across the length and breadth of the country was through trains. He has written quite extensively about his experience and observation during these journeys.

It would be of interest to children to know that rail travel was once a novelty! However, the conditions in trains were not quite good—the

compartments were overcrowded, only the strongest obtained seats, bribing railway officials for the tickets, and passengers would spit in the compartment, which Gandhiji would clean up himself; he also advised his followers to do so uncomplainingly. To young readers, this would be an eye-opener, and introduction to the concepts of cleanliness and non-violence. Furthermore, it would also evoke in their minds a sense of gratitude for the things and services they enjoy now, and not to take anything for granted.

The National Rail Museum, New Delhi had a photo exhibition on 'Mahatma Gandhi and the Railways'. Around 50 photographs have been interwoven in the extracts that find place in the book.

The extracts are taken from various references, most of them primary sources, which are listed in the end of the book.

The titles of the chapters are interesting too. For example, 'The Journey from Mohandas to Mahatma', 'Gandhiji's Romance with the Railways', 'The Incognito Traveller', and so on.

Gandhiji's last journey alive by train was from Kolkata to Delhi on

7–9 September 1947. But truly, his last journey was in the special train which carried his 'asthis' (ashes) from Delhi to Allahabad on 11 February 1948 for immersing at the holy confluence (the *sangam*) of the Ganga, Yamuna, and the mythical Saraswati.

CONCLUSION

A large number of books have been written on the life of Mahatma Gandhi and his message for humanity. They have appeared in several languages of the world. On a parallel note, there have also been questions about his ideas, their utility, suitability, and whether they can be applied in today's context. However, glimpses of his life and snippets of his message may be provided to young readers. At the very least, it would enhance their knowledge and perhaps later provide a base for studying the trajectory of a national figure. Children's literature can, to a large extent, influence the thinking of impressionable minds. Concepts such as truth and non-violence are eternal. One only needs to discover the Gandhi within oneself.

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Promoting Inclusion at the Elementary Level of Education

Lovely Sarkar*

Surendra Yadav**

Abstract

Inclusivity in education ensures that each child can participate fully and develop in a shared learning environment. This type of education provides every child a fair opportunity to develop and succeed in school. Hence, fostering diversity in education can be viewed as a method that unites learners with different requirements in a common learning space. It advocates for a schooling system that caters to all individuals, irrespective of their distinct characteristics. This review paper attempts to identify the target groups of inclusion at the Elementary level of education, to find out the developments in the area of inclusive learning and also suggest measures for improving the implementation of equitable learning practices at the Elementary level. Information presented in the present paper has been collected from national policies on education, UNICEF reports on inclusive education, the CBSE handbook on inclusive education and the UN World Declaration on Education for All. Some journals and e-content relating to inclusive education have also been referred. Policy perspectives of NEP 2020 with regard to inclusion have also been discussed. Suggestions with regard to inclusion at the elementary level have also been presented in this study.

INTRODUCTION

Education is a fundamental right of all children. As per the Constitution of India (this became a fundamental right under Article 21A as per 86th Amendment Act 2002), every child is granted to receive free and compulsory

education till the age fourteen. The World Declaration on Education for All, adopted in Jomtien, Thailand (1990), aims to make education universally accessible to all advocating equity (UNESCO, 2009). 'Education for All' means that every child is provided

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with the same chance to access education and develop according to their pace. This calls for inclusion. Inclusion demands that educational needs of every child, youth as well as adults must be addressed. For this, every type of learner must be accommodated in regular schools. Accordingly, 'learning together' is apt.

This article explores inclusive education at the Elementary level, outlining key target groups, recent developments, and recommendations, drawing insights from national and international reports and educational resources.

METHODOLOGY

This review paper employs a qualitative and descriptive method to examine inclusive education at the Elementary level. It relies on an extensive analysis of secondary sources, such as national and international policy frameworks, academic publications, research studies, and reliable online content.

MEANING OF INCLUSION

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), it is through inclusive education that a robust education system can be built, enabling the attainment of the objectives of education (UNESCO, 2009). Lisa Friedman states that inclusion values each individual's unique contributions and affirms everyone's rightful place within a community (Friedman, 2020). The Oxford Advanced Learner's Dictionary

describes inclusion as the act or policy of granting equal chances and support to individuals who are typically marginalised (Oxford Learners Dictionary). The Centre for Studies on Inclusive Education acknowledges that educational inclusion is a component of broader social inclusion (Booth & Ainscow, 2002). Inclusivity in education offers all children an equal opportunity to learn and participate. It requires integration of children with the mainstream education system, regardless of their strengths or challenges. Children have different mental abilities and faculties. They face multiple problems in learning areas too. Inclusive education represents a shift in approach, welcoming students of all abilities and backgrounds (Hasan et al., 2018).

The concept of inclusion emphasises removing barriers to learning and promoting active involvement of everyone in the educational process. It treats diversity not as a challenge, but as a strength that enhances education, calling on schools to respond to the varied experiences and abilities of their learners (*Inclusion in Education—A Manual for School Management Committee*, National Council of Educational Research and Training, 2020).

NEED FOR INCLUSION

The Constitution of India guarantees equal rights and opportunities for all citizens. In line with this statement, it can be understood that integrating children with varying abilities

and challenges into the regular education system would promote educational equity among all students. Chapter III of The Rights of Persons with Disabilities Act, 2016 lists specific measures to support inclusive education. To empower individuals with disabilities, it is essential to ensure their complete involvement and integration into the society. Individual differences have to be respected and acknowledged (UN Convention on the Rights of Persons with Disabilities).

The Salamanca Statement and Framework for Action on Special Needs Education emphasises that for tackling the issues of people's biased attitude towards special children, regular schools should be set up. Orientation programmes should be organised in schools so that awareness can be created. This will facilitate building up such communities of people who can embrace every kind of learner. Thus, regular schools would accommodate everyone despite their differences, leading to enhanced competence and productivity. Every child learns at their own pace and has distinctive learning needs, which should be identified. A child-centric method of education is sure to address the needs of the diverse learners (The Salamanca Statement and Framework for Action on Special Needs Education, 1994). Every child including the disabled child has the right to live a respectable life leading to a fruitful involvement in the society (Convention on the Rights of the Child, 1989).

According to Article III, education systems should be structured so that individuals across age groups can engage with learning suited to their foundational needs. It emphasises the obligation to eliminate exclusion and ensure that students with disabilities are integrated equally into educational provisions (Meeting Basic Learning Needs: A Vision for the 1990s, 1990).

From the above discussions, it is apparent that integrating children into the regular school system requires education that accommodates all learners. One of the primary goals of inclusive education is the removal of societal disparities so that social values can be restored by inclusion in education. The other benefits of inclusive education can be summarised in Figure 1 as given below:

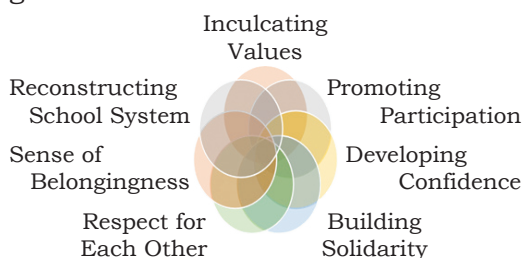


Figure 1: Benefits of Inclusive Education

TARGET GROUPS AT ELEMENTARY LEVEL

Inclusivity in education is a step towards building a congenial education system which leads to participation and learning so that each individual benefits from it. The United Nations Children's Emergency Fund (UNICEF)

states the need to include every group of learner who has, for ages, been the subject of exclusion—for example, disabled children and minority linguistic groups. Thus, inclusive education attempts to bring everyone into the mainstream and assure their growth and existence by recognising their diverse aspects (UNICEF for every child – inclusive education). The target groups of inclusive education according to the NEP 2020 are those ‘Socio-economically Disadvantaged Groups that have never been a part of representation in education’ (NEP 2020). The various disadvantaged groups as mentioned in NEP 2020 are female and transgender individuals; SCs, STs, OBCs, and minorities; students from remote areas; those with disabilities including learning disabilities; migrant communities, low-income families, marginalised children, orphans, child beggars, and urban poor (NEP 2020). Thus, NEP 2020 aims to bridge the gaps in access, participation, and learning outcomes among students from all the aforementioned marginalised backgrounds. Recognising that inclusive practices must begin early, the policy particularly emphasises the importance of Early Childhood Care and Education (ECCE) at the elementary level, as a crucial step towards ensuring equitable learning opportunities from the foundational stages.

The Right to Education (RTE) Act, 2009 ensures that children aged 6–14, including those with special needs, receive free and mandatory elementary education. Section 3 (2)

of the Act emphasises foundational learning for students with disabilities. The National Early Childhood Care and Education Policy reiterates the commitment to ensure equal learning opportunities for the holistic development of children below 6 years of age (National Early Childhood Care Education Policy, 1974). The ECCE is also a part of inclusive education and finds its due place in the policies like NPE 1986, NEP 2020.

TRANSFORMATIONS IN EDUCATION FOR INCLUSION

- *Education and National Development (1964–1966)*: It recommended the establishment of an integrated education system to enhance the cultural and national harmony. This was incorporated in the NPE 1968, which recommended the expansion of educational facilities and progress of such programmes that would accommodate handicapped children in regular schools (National Policy on Education, 1968). The report outlines a focus on the education of girls, marginalised groups, and the enhancement of educational facilities for the children with disabilities.
- *Integrated Education of Disabled Children (1974)*: It makes learning accessible for children with special needs by offering financial support for textbooks, attire, travel, and assistive materials to aid children in being a part of regular classrooms.

- *National Policy on Education (1986)*: It prioritises the removal of disparities to ensure equal access to education for everyone. It recommended integrated school system. It stressed on including children with 'mild' disabilities in regular schools and 'moderate to severe' disabilities in segregated schools (National Policy on Education, 1986).
- *Programme of Action (POA) (1992)*: It approximated that nearly 12.59 million children with disabilities should receive education within schools. POA recognised children with disabilities in the categories of mobility impairments, hearing impairments, speech impairments, visual impairments, intellectual disabilities, and learning difficulties, within the age range of 5–14 years. The document highlights that children with disabilities are to benefit from early intervention and care under the ECCE framework.
- *The Persons with Disabilities (PWD) Act (1995)*: It ensures that individuals with disabilities are not left behind, allowing them to actively engage in building the nation (PWD Act 1995). It proposes that all children with disabilities be granted free education until the age of 18, either through integrated or special schooling systems. Vocational education will also be made available in special schools (PWD Act 1995).
- *Chapter II of Right to Education (RTE) Act (2009)*: It states that all children from 6–14 years of age are entitled to free and compulsory education till they complete elementary education. It also includes the option of providing education at home for children with profound disabilities.
- *Sarva Shiksha Abhiyan (SSA) (2000–01)*: Its aim is to ensure that every child aged 6–14 receives elementary education. The primary aims of this scheme include prioritising the education of girls and learners with disabilities (SSA, Manual for District-Level Functionaries Level 2017).
- *Rights of Persons with Disabilities (RPWD) Act, 2016 Act*: Under this act, the recognised impairments have been increased from 7 to 21. It advocates that general classroom educators and special educators must be provided with a broader range of expertise and competencies to address the various learning needs of students.
- *National Education Policy (2020)*: A special mention about 'disabilities' finds a place in NEP 2020. It recognises the value of building mechanisms that enable Children with Special Needs (CWSN) or Divyang to access quality education at par with their peers. It suggests that approaches like one-on-one instruction, support from peers, alternative schooling models, appropriate

facilities, and specialised technology can significantly aid certain children with disabilities (NEP, 2020). It emphasises and guarantees the inclusion of children with disabilities in educational institutions, starting from the early childhood to the higher studies. It endorses the RPWD Act of 2016. Strategies like recruitment of special educators, establishment of resource centres, provision of appropriate devices and teaching-learning materials will be adopted. Children with severe disabilities can opt for regular or special schools. For children facing critical disabilities, home-based education will be made available as an alternative. 'Inclusion fund' finds a place in the policy perspectives.

DISCUSSION

The target groups of inclusive education consider the inclusion of various groups of children from underrepresented groups, who have been identified as socio-economically disadvantaged groups. The education of transgenders and girls finds a special place of inclusion in NEP 2020. 'Gender-Inclusion Fund' will be allocated for supporting girls and transgender education. Free boarding facilities will be provided for students who come from far-flung areas and come under the 'socio-economically disadvantaged groups'. In order to strengthen inclusive education, scholarships and schemes will be made available to the

students from the Socio-economically Disadvantaged Groups (SEDGs) through 'single-window' system'. By implementing such measures, commitment to inclusive education is evident, ensuring that every child, no matter their background, is given equal chances and a sense of social belonging.

SUGGESTIONS FOR IMPROVEMENT OF INCLUSION IN EDUCATION

A dynamic educational system that addresses the varied needs of students is crucial for enhancing inclusion in education. This requires the development of a robust support system to maximise inclusivity. Schools must be restructured along inclusive lines, with enhanced infrastructural facilities to accommodate differently abled children within regular schools. Appointment of special educators in all educational institutions is crucial to support these learners effectively. Furthermore, classroom seating arrangements should be thoughtfully designed to facilitate the engagement of children with diverse needs. Establishing 'Student Support Services' in every school is imperative for addressing the emotional and academic needs of students. Additionally, training teachers for inclusivity is a priority. The teacher training curriculum must be revised to incorporate the necessary changes that foster inclusive education. Schools should also organise awareness programmes to promote

understanding of children's rights, with education being a fundamental one. Integrating technology into learning processes is another critical step in advancing inclusion. Technology-based learning tools can offer personalised educational experiences for students with special needs. Qualified counsellors and social workers should actively collaborate with stakeholders in the field of education to enhance students' participation in schools. Collectively, these strategies can create a supportive learning environment.

CONCLUSION

Inclusive education aims to educate all children without any kind of discrimination or barriers, enabling regular schools to become inclusive in nature. It addresses varied needs

of children and enables them to learn together under one roof. Different acts and policies have framed the guidelines for inclusive education. Yet, the aims of inclusive education are still not achieved. A shift in perspective towards inclusive learning is urgently required. There is a need to raise awareness about creating an inclusive environment in regular schools. All stakeholders of education need to work together to accomplish the objectives of inclusive education. A governing body comprising parents and the faculty of the institutions has to be constituted for a better implementation of the inclusive learning environment. This provides a fair chance for every kind of learner to learn together, fulfilling the target of 'Education for All'.

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Fostering Environmental Awareness in a Primary Grade Mathematics Classroom

A Critical Mathematics Education (CME) Approach

Manya Sharma*

Varish**

Abstract

The most pressing environmental problem on our planet today is pollution and climate change. Accordingly, the concept of a circular economy is worthy of acknowledgement and advocacy within the school environment, starting from the foundational years of learning up to critical pedagogy. The National Curriculum Framework for School Education (NCF-SE) 2023 further emphasises the significance for students to learn and look after the environment as part of the global Agenda 2030 SDG 13 Climate Action. This study applies a Critical Mathematics Education (CME) approach to promote environmental consciousness and responsibility (Shimray, 2016), through the usage of plastic waste pollution data. The study aims to promote sensitivity to climate change by closing the distance between mathematics taught at schools and the environment through developing tasks on the principles of CME. These tasks include real data regarding plastic waste generation, and encourage the relation between mathematical concepts and environmental problems. The study further explores the role of mathematics in promoting sustainability and critical thinking. This qualitative study involved pre-task interviews, a week-long family survey of plastic use, and statistical evidence of plastic wastage in worksheets presented in both textual and graphic formats supported with post-task reflection for 18 fifth grade learners. The results indicated that students became aware of the scope of plastic pollution and how it affects the environment, and they accepted the large use of plastic in their lives, with many accepting that the reduction, reuse, and recycling of plastic is of utmost importance. Through making maths relatable to real-life situations, students enhance important problem-solving skills towards sustainability, aiding the development of eco-friendly future citizens in support of global climate action targets.

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INTRODUCTION

Over the previous few years, the urgency to fight climate change has increased and its effects are being experienced all over the world. Climate change can be defined as long-term changes and deviations in temperature patterns, precipitation, and other weather phenomena, mainly caused by human actions like industrialisation, deforestation, and the overconsumption of fossil fuels. In order to reduce the impact of these changes, it is essential to inculcate a sense of environmental responsibility in younger generations, so that they learn the right knowledge and skills in order to make informed decisions towards sustainability. In this context, education plays a pivotal role. The Sustainable Development Goals (SDGs) outlined in Agenda 2030, particularly SDG 13: Climate Action emphasises the need for climate-related education that can empower individuals and communities to engage in meaningful environmental action. The National Curriculum Framework for School Education (NCF-SE) 2023 also highlights the importance of 'Learning about and Caring for the Environment', underscoring the responsibility of schools in integrating environmental concerns into the curriculum. However, even with these efforts in schools, climate change education tends to remain siloed in disciplines, such

as science and geography, with no consideration for its integration into other areas of study. This is where Critical Mathematics Education (CME) comes in. Mathematics has conventionally been thought of as an abstract subject, which tends to be isolated from real-life practical issues like climate change. The CME approach, however, challenges this notion by emphasising the use of mathematics to critically examine and address societal issues. In CME, students learn to apply mathematical concepts to analyse problems, such as environmental degradation, resource depletion, and the socioeconomic impacts of climate change. This critical pedagogy allows students not only to acquire mathematical skills and competence but also to expand a sense of responsibility in addressing global issues. The study seeks to investigate how the integration of CME in a mathematics classroom for Grade 5 students can foster awareness and sensitivity towards climate change. The study will focus on designing mathematical tasks that encourage critical thinking about climate issues, using data analysis and real-world problem-solving. By doing so, the research seeks to demonstrate how mathematics classrooms can serve as powerful spaces for developing both cognitive and affective responses to climate crisis.

REVIEW OF LITERATURE

A brief description of the available research and studies in mathematics related to CME and sustainable mathematics education is stated below.

Li and Tsai (2021) in their article tried to establish the need for integrating education for sustainable development across all subjects. They talked about bringing transformation in the teaching and learning of mathematics, considering the twenty-first century priorities, such as pollution, climate change, global warming, etc. They identified that education for sustainability should be made part of mathematics teacher education so that efforts can be made to bring this to classroom scenarios.

Hamilton and Pfaff (2013) provide numerous examples where the conception of sustainability can be promoted among students in any mathematics classroom. They consider that it should be obligatory for educational institutes to produce an educated citizenry. According to them, using well-crafted, data-rich, real-world examples increases student engagement and gives them the chance to study mathematics while directing at least some efforts towards the most pressing societal issues.

Barwell (2013) says that one of the most urgent problems of the twenty-first century is climate change.

Every aspect of comprehending climate change, including its definition, prediction, and communication, involves mathematics. This suggests that mathematics education has a role in preparing the present and future citizens to participate in the necessary discourse. He further contends that critical mathematics education provides a framework for imagining how mathematics instruction and learning could fulfil this function.

Sharma et al. (2022) in their study attempted to highlight the gap between environmental awareness and environmental sensitivity. They claimed that environmental sensitivity is promoted in students through active action and meaningful participation in environment-related issues. Their study shows that schools can create opportunities for learners where they are engaged in environment conservation and related activities, which resulted in a positive impact on students' sensitivity towards the environment.

Renert (2011) says that the goal of sustainable mathematics education is to use modern mathematics to perceive the world in a different light. In addition to feeling big numbers, it also focuses on feeling the worldwide circumstance. It transforms mathematics into an open-ended state of world observation rather than a collection of items or a set of skills. It strives for a more comprehensive

and suitable mathematics, and from this stance, it exhorts us to take moral action to mend the world.

Wolfmeyer and Lupinacci (2017) in their article highlighted a new perspective of Critical Mathematics Education where mathematics can be taught for the environment. They discussed that mathematics can be grounded in the idea of ecojustice and critical pedagogy. They promote the development of students' ecological consciousness and civic responsibility through the lens of mathematical investigations. They highlight the need for encouraging learners to interrogate dominant narratives and question how mathematical knowledge is used.

Abtahi et al. (2017) conducted a study with the Canadian and Norwegian school mathematics teachers to understand the teaching of climate change as a social issue. The theoretically grounded climate change issues draw the idea of critical citizenship and critical mathematics education. They view that bringing the issue of climate change into the classroom is certainly considered as the ethical and moral responsibility of teachers but their own understanding about this in daily practices is a complex one. They also acknowledge that teachers should be supported in facing these ethical challenges because of climate change because of two reasons; climate change is an urgent issue and students are the future decision makers. Further, mathematics teachers can help students evolve as critical citizens to

reflect on the different challenges of climate change and to become active participants of democratic societies.

These studies are certain that there is a huge potential in transforming mathematics classroom and mathematics teacher education in the direction of sustainable mathematics education with interplay of critical mathematics education. In this attempt critical mathematics education serves as a lens in understanding the environmental issues, and sustainable mathematics education provides a way forward for the same.

RATIONALE OF THE STUDY

Mathematics tends to be viewed as a distant and abstract discipline and is regularly regarded as being irrelevant to real-world problems such as climate change. CME, however, has the ability to utilise mathematical ideas to study and tackle difficult, real-world problems such as climate change and sustainability. Utilising CME, mathematics classrooms can be used as environments in which students acquire numerical and analytical abilities while also gaining an appreciation for and sensitivity towards environmental problems. In addition, programmes like Indian Green Building Council's (IGBC) Green School Initiative and Centre for Science and Environment (CSE) promote schools to embrace sustainable approaches and provide students with environmental education (Varish & Sharma, 2023). By incorporating the values of

Indian Knowledge Systems (IKS) and inculcating them into the structure of the National Curriculum Framework for School Education (NCF-SE) 2023 and the New Education Policy (NEP) 2020, it can be guaranteed that the students are not only provided with contemporary scientific information but are also rooted in the age-old, sustainable practices that do not harm the environment. Thus, integrating CME to inculcate sensitivity to climate change addresses national as well as universal requirements.

DEFINITION OF KEY TERMS

This study aims to promote environmental awareness by designing a task grounded in CME. Critical Mathematics Education (CME) is an approach that views mathematics as a tool for empowerment, critical thinking, and social justice. It promotes students to use a mathematical perspective to examine and evaluate real-world problems concerning politics, inequality, and environmental concerns. In this study, CME is being considered as an approach in developing the idea of environmental consciousness (Wolfmeyer and Lupinacci, 2017) through tasks based on environmental problems.

RESEARCH QUESTIONS

The present study seeks to answer the following research questions:

1. How to instil and strengthen Grade 5 students' understanding and sensitivity towards climate change in the mathematics

classroom through tasks grounded in the principles of Critical Mathematics Education?

2. What is the effect of integrating climate change issues into Grade 5 mathematics classrooms?

OBJECTIVES OF THE STUDY

The objectives of the present study were:

1. To plan and design mathematical tasks grounded in the principles of CME that incorporate data on real-world plastic waste generation and thus the issue of climate change
2. To explore the impact of integrating environmental issues into the mathematics classroom on students' behaviours towards sustainability and environmental responsibility

METHODOLOGY

The study was conducted as a small attempt to understand whether different environmental issues can be brought into the classroom. This study used an interventionist approach.

Research Design

This was a qualitative exploratory study. An exploratory study tries to explain a phenomenon under investigation. Swedberg (2020) states that exploratory research is an attempt to discover something new and interesting by working through a research topic and is the soul of good research. In this research, innovation lies in the designed tasks, which were

based on the environmental issues such as single use plastics and climate change.

Sample of the Study

A group of Grade 5 learners were made part of this study. These students were selected through a convenient sampling approach. Creswell (2007) defines convenient sampling as an approach where the matter of convenience can be the time constraint and accessibility of the sample. In this scenario, the sample was easily accessible to the researcher, as the researcher herself was teaching mathematics to the class. There were 18 students in the chosen class.

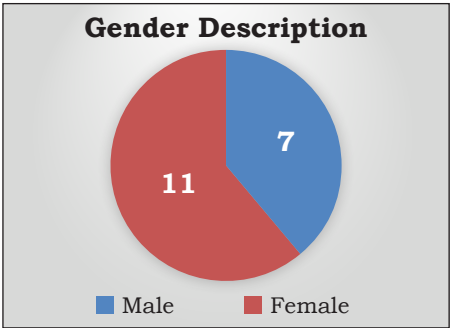


Figure 1: Description of the sample

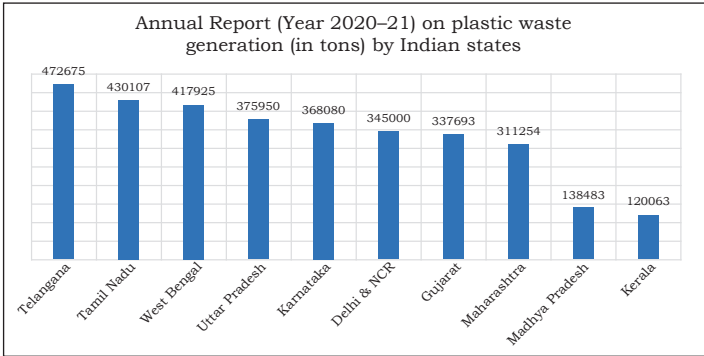


Figure 2: Infographics used in the worksheets

Tools and Techniques of Data Collection

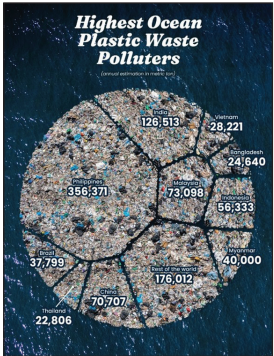
The tools used for data collection are listed here.

1. *Pre-task semi-structured interview:*

This semi-structured interview was designed to explore various notions and perspectives that students had about various environmental issues, particularly plastic pollution, before engaging in the main task. There were three questions in this area.

2. *Tasks on environmental issues:* The researcher planned the following two tasks to promote environmental consciousness in students:

- **Worksheets of Plastic Waste Generation:** The researchers designed worksheets to engage students with statistical data on waste production at both the national and international levels. Worksheets contained statistical data on international as well as India’s annual plastic waste generation, and large-scale measurement units like tons and metric tons were used.



There were questions on analysing the data and answering questions aimed to assess the student's ability to interpret large-scale data, recognise patterns, and draw comparison between regions to gain insights into how well students understood the global and national scope of plastic waste generation and their ability to apply their understanding to real-world environmental issues.

- Survey Sheets of Plastic Waste: A week-long family survey in which the students were to record the amount of plastic waste produced by each member of the family, including food packaging, sachets, bottles, straws, polythene bags, and Styrofoam plates was conducted. There were questions on how much plastic their families are producing in a year.
- 3. *Post-task interviews:* After the completion of the task, followed by reflection-based interview questions on personal awareness on consumption of the single use plastic, its effect on the environment and alternatives that can be used in its place was also conducted.

Delimitation of the Study

The study was delimited to a single Delhi-based school only. It was conducted with Grade 5 learners only.

Limitations of the Study

There were certain limitations of this research work as it lacked statistical generalisation due to its small sample size.

FINDINGS AND DISCUSSION

The data from multiple tools is presented here after analysis and theme-based synthesis. Findings from the research are presented by being classified under different research objectives.

Objective 1: To plan and design mathematical tasks grounded in principles of CME that incorporate data from real-world plastic waste generation and issues of climate change

The data analysis from the pre-task interview highlighted the following issues related to understanding of climate change.

1. *Recognition of plastic pollution:* A majority of students had a basic understanding of pollution caused by plastic use. The students recognised plastic pollution as plastic waste being thrown away carelessly. This indicated a solid grasp of basic plastic pollution-related facts, which is important for understanding the broader importance of adopting sustainable habits. The students recognised that plastic waste was a challenge for the environment but their awareness was shaped largely by what they saw in their surroundings.

2. *Lack of ability to understand the magnitude of environmental impact:* Students showcased a broad understanding of the harms caused to the environment by plastic. But they were not able to understand its magnitude and grasp the severity of its consequences like disruption of natural habitats especially marine life, contamination of soil and water, and thus, contamination of food chain because of microplastics. Around 50 per cent of the students did demonstrate an awareness that plastic is non-biodegradable and persists in the environment for hundreds of years. When asked about its effects, they still described more visible or commonly observed consequences, such as drain blockages, waterlogging

(61 per cent). Thirty-eight per cent of students mentioned that plastic harms animals—causing them to choke from ingesting plastic. All of them said that it made the ground dirty, and that burning plastic releases smoke and hazardous gases (83 per cent). These observations were likely shaped by real-life encounters and rote memorising what is taught in classrooms.

3. *Ignorant of personal contributions:* Another important finding before the CME task was that students underestimated their personal role in plastic waste generation. During interviews, students mentioned waste from factories, industries, and polythene bags as the origin of plastic waste. Most of the students believed that plastic waste only resulted

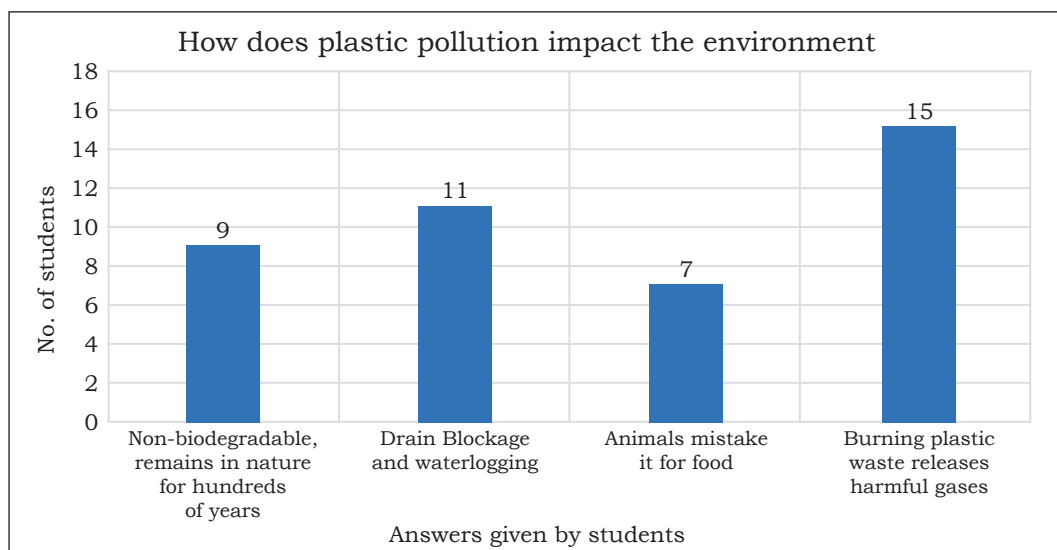


Figure 3: Impact of plastic on environment as stated by the students

from external sources, such as factories, industries, and marketplaces, rather than from their own everyday activities and that of their families. Upon being asked about their own contribution to plastic pollution, a majority (62 per cent) blamed the external sources (factories and industries), 22 per cent stated their own daily habits contributed only little to nothing to the issue, while only 16 per cent accepted that they significantly contribute to the production of plastic waste.

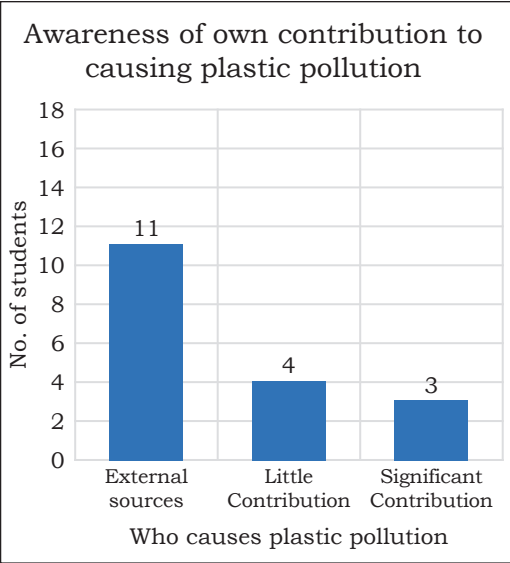


Figure 4: Student’s perception of their personal contribution to plastic pollution

Thus, only 3 out of 18 students (16 per cent) acknowledged their own daily use, especially polythene bags, was a significant contributor to plastic pollution, and the remaining

84 per cent believed their families used minimal plastic or that their habits did not significantly contribute to the problem. This revealed a disconnection between the vast issue of plastic pollution and their everyday habits of consumption. They saw this issue as unrelated to their own lives. This highlighted a gap between their awareness of climate change due to plastic pollution and the impact of their own participation in it. This shows that the locus of control for owning the responsibility is external in students (Hawthorne and Alabaster, 1999).

When asked about the average amount of plastic they used, and thus reflect on their own use of plastic as well as that of their families, most students believed their families used very little plastic. Their responses focused only on highly visible and common items, such as polythene bags, water bottles, or food-safe plastic lunch containers and justified them as being reusable. This limited inventory demonstrated a lack of awareness regarding the many forms of plastic embedded in daily life from packaging and disposable items. For example, they were completely ignorant of the daily production of single-use plastic waste from their homes. Their inability to recognise the full extent of plastic usage suggested that they did not see their consumption patterns as part of a wider environmental issue.

These findings from the pre-task interview helped in designing the

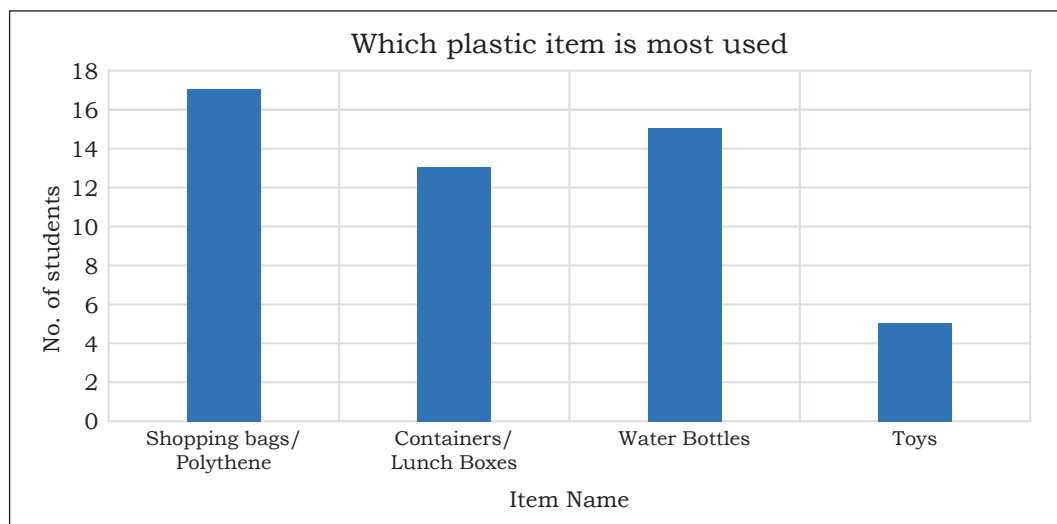


Figure 5: Major plastic items used in households of students

worksheets and tasks which could help students in understanding this issue better.

Two tasks were designed for students so that they can relate with the environmental issue.

- Understanding the mathematical representation of data:* It was found that students were used to arithmetic exercises but had not worked meaningfully with real-world data. For example, when shown plastic waste statistics for various areas of Delhi, many students struggled to grasp the large-scale figures (for example, Delhi generates approximately 3,45,000 tons of plastic waste annually), large units of measurement, and pictorial representation of data in the form of chart and graph. Students were unfamiliar with
- Attitude towards environment:* After studying the annual plastic waste data for Delhi, though the students recognised that stopping plastic pollution is the need of the hour, there was still a perceived powerlessness among them as they believed that there is such a vast amount of plastic being generated by the factories and industries that their personal actions would not make a significant difference. Thus, they showed a lack of understanding of collective responsibility and impact, as found by Gifford (2011) that

individuals disengage from sustainability efforts when they feel their impact is too small. Thus, students saw this issue as an external large-scale problem and failed to link it to their personal habits, only believing that it is the government's duty to reduce plastic and pollution caused due to it.

Objective 2: To explore the impact of integrating environmental issues into the mathematics classroom on students' behaviour towards sustainability and environmental responsibility

It was through the analysis of post-task interviews that the impact of using environmental issues related to mathematical tasks was analysed. The thematic analysis of the interviews brought out the following findings:

- *Promotion of environmental awareness:* After completing the tasks, students gained a much deeper understanding of the consequences of plastic waste pollution. Through designed worksheets, students realised the scale of the issues. The real plastic waste data in the worksheet helped them in recognising plastic waste as a vast environmental issue affecting cities, countries, and ecosystems. The students realised the severity of the issue. Students were able to identify the most prevalent sources of

plastic waste in their homes, such as polythene bags, food packaging and sachets (sauce, shampoo), wrappers (chips, biscuits, chocolates, etc.), plastic water bottles, Styrofoam plates, and disposable cutlery. The top two most consumed plastic items were polythene bags and food packaging.

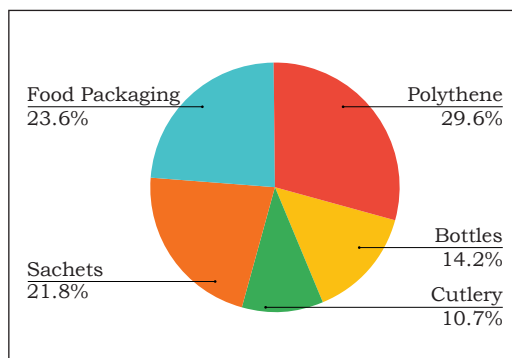


Figure 6: Combined plastic waste material distribution of all the 18 households

Many of the students said that they didn't even realise that food packaging was in fact plastic. Thus, after taking the one-week plastic consumption survey, students were able to link their daily habits to its broader environmental consequences.

- *Acknowledging environmental impact:* The post-task discussion opened a space where students spoke about the effects of plastic on animals, plants, ecosystems, and human health. Students were now articulating these concerns in their own words,

demonstrating critical thinking and a deeper understanding of sustainability. A student even explained how microplastics enter the food chain, impacting marine life and human health. This certainly reflects that a sense of social responsibility was duly acknowledged by the students.

- Mathematical data interpretation:** Students developed and applied important mathematical skills by analysing real-world statistics. By engaging with graphs, charts, and large-scale measurement units like tons, they learned to read and compare plastic waste generation levels across regions. They also performed arithmetic operations, while tracking and recording their own consumption of single use plastic for a week.

Name	Polythene Bags	Plastic Bottles	Plastic Straws, Plates	Food Packaging	Plastic Sachets
Me					
Mom					
Papa		0			0
Bhai					
Week Total	30	6	4	30	7

Figure 7: A student’s one-week plastic waste tracking sheet

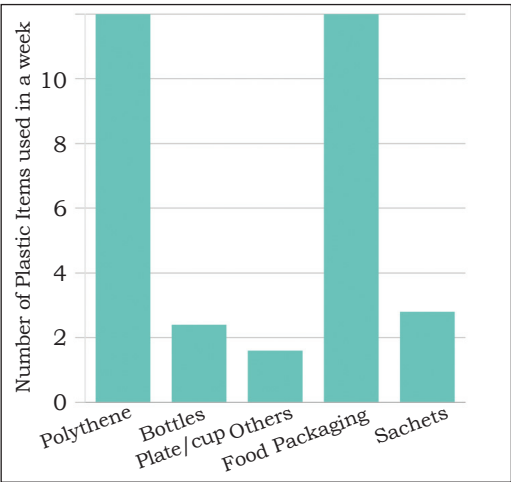


Figure 8: Graph plotted by a student based on their tracking sheet on the school computer

With the help of family survey-based task, students were enabled to view their plastic usage as a numerical quantity. They practised data collection by tracking each family member’s plastic consumption, performed calculations and estimated their annual household plastic consumption. Students represented their findings on pie-charts and bar graphs, showcasing data handling skills. They found in their surveys that their use of polythene bags while shopping for vegetables, or disposable cutlery while eating out accumulated over time. Thus, the students were able to identify the major sources of plastic waste in their households by visualising the problem, and take necessary actions to reduce, reuse, or recycle. These tasks reinforce their ability to analyse data and take action in the real world.

- Understanding gendered patterns of plastic usage:* An interesting insight that emerged from this task was students' observation of gender-specific roles in household plastic consumption. Eighty-three per cent of students identified their mother as the highest contributor to plastic waste within the household. This was primarily attributed to mothers being responsible for daily grocery shopping, cooking, and household management activities that often involved frequent use of polythene bags, packaged goods, and disposable items. Eleven per cent recognised their fathers as key contributors, while the remaining students cited siblings or grandparents. While this observation reflected household dynamics, it also prompted a critical conversation around shared responsibility rather than placing blame. Students began to discuss how every family member plays a role and that everyone must participate in reducing plastic consumption.
- Behavioural change—Sensitivity towards environment:* By tracking and recording their family's plastic waste generation over a week, students recognised their personal contribution to pollution and became more mindful of their daily consumption habits. Many students reflected that they were unaware of this usage pattern. They suggested alternative approaches like educating and making their family and parents aware about the extent of their daily plastic consumption and its ultimate effect on the environment, using cloth or jute bags for daily grocery shopping instead of polythene bags, opting for steel or glass bottles or *mitti ghadas* (traditional mud pots) like those in villages instead of plastic, buying cutlery made out of leaves instead of the plastic disposable ones, and encouraging parents to purchase products with minimal plastic packaging (for example, buying loose flour or grains) in order to reduce the waste. Thus, the students became more critical about their habits of daily plastic consumption. They recognised the threat posed by food packaging wrappers and proposed that they could instead try to reuse or recycle such plastic waste.

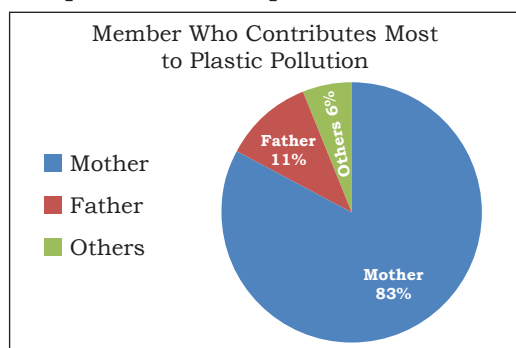


Figure 9: Top contributor from student's households towards plastic pollution

CONCLUSION AND IMPLICATIONS

The CME has a large discourse of studying the power structure or social issues through mathematics (Skovsmose, 2014) but certainly it is

required that it should be used in studying environmental issues so as to enable students to critically engage with real-world issues concerning sustainability and climate change. By tracking and analysing their own family's plastic use and through national and global statistical data, they not only expanded their mathematical skills but also developed a strong understanding of the impact of human actions on the environment. Indian education policies have also prioritised fostering responsible citizens equipped with practical knowledge to tackle such challenges. Furthermore, the importance of traditional sustainable practices that enrich the curriculum (Varish and Sharma, 2021), with locally relevant solutions

for sustainability should also be acknowledged and incorporated. The study demonstrates the potential of a Critical Mathematics Education approach in transforming students from passive recipients of theoretical learning to active participants in climate action, thus inculcating sustainable attitudes that lead to a more eco-conscious and responsible society. It highlights that mathematics can promote ethical responsibility (Atweh and Brady, 2009) in students. These constructive initiatives where teachers also consider climate change-related social issues as their ethical and moral responsibility (Abtahi et al., 2017) will surely make students a responsible environmental citizen (Shimray, 2016).

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Parental Attitude Towards Private Pre-primary Education in Thoubal District, Manipur

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Abstract

This study investigates parental attitudes in Thoubal district towards private Pre-primary education in Manipur, India, examining demographic factors like parental occupation, location, and education level. Employing a descriptive survey design, data were collected from 251 parents of children in 60 randomly selected private Pre-primary Schools. The standardised Parental Attitude Towards Preschool Education Scale (PATPES), consisting of 25 items developed by Venkatesan, 2018, assessed parental attitudes across dimensions such, as emotional support, academic involvement, and perceived importance of early education. Data were analysed using t-tests, ANOVA, and z-score. The analysis revealed a significant difference based on educational attainment, with undergraduate educated parents showing more favourable attitudes than those with higher qualifications. Conversely, no significant differences were found based on occupation or geographic location—rural and urban residency, indicating generally consistent attitudes across these variables. The findings underscore the need for targeted outreach programmes to bolster parental awareness and engagement in early education, especially among different educational backgrounds. This research has important implications for policymakers and educators who foster supportive parental attitude towards early childhood education, aiming to enhance academic outcomes within the socio-economically diverse communities.

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INTRODUCTION

Early childhood education is critical for a child's cognitive, emotional, and social development, forming the foundation for lifelong learning. According to the National Education Policy (NEP 2020), over 85 per cent of a child's brain develops by age six, underscoring the importance of Early Childhood Care and Education (ECCE) during these formative years. Pre-primary education, often offered through private institutions, such as kindergartens and Montessori schools, is integral to this early development, as it prepares children for formal schooling by focusing on essential skills like literacy, numeracy, and social interaction (NEP 2020).

Parental involvement plays a crucial role in shaping the effectiveness of early childhood education. Parental attitudes significantly influence children's educational choices and engagement, as they are the primary decision-makers regarding their children's schooling, including Pre-primary education (Epstein, 2011). Exploring the factors that shape these attitudes is essential to understand the demand for private Pre-primary education and addressing potential inequities. Research shows that parents' attitude towards Pre-primary education significantly influence the quality of their engagement in their children's learning process (Aggarwal, 2020). Positive parental attitudes are linked to higher levels of support and encouragement,

which can lead to better academic outcomes for children (Morgan et al., 2011). However, attitudes towards Pre-primary education vary widely based on several factors, including parents' educational background, occupation, and geographic location (Siddiqui, 2014).

In Thoubal district of Manipur, where quality Pre-primary education remains limited, understanding parental attitudes is crucial for shaping effective early education programmes. Despite significant efforts by the government and private sector to expand Early Childhood Education (ECE), parental perceptions continue to play a crucial role in shaping the demand for and support of these services. This study explores parental attitude towards private Pre-primary education in Thoubal, examining how occupation, educational background, and urban or rural residency affect these views.

REVIEW OF LITERATURE

Parental attitude towards education plays a crucial role in shaping children's educational experiences. Research indicates that engaged parents with positive attitude towards education can significantly enhance their children's learning outcomes. The attitude towards Pre-primary education can vary significantly based on demographic factors, such as occupation, education level, and geographic location (Fan and Chen, 2001). These factors shape parents'

educational choices for their children, affecting their access to quality early education. Understanding these dynamics is crucial in developing supportive policies to enhance accessibility to early childhood education. Studies by A.S. Devi and Meitei (2024) revealed that parents in Thoubal district prioritise private schools due to better career prospects for their children (Devi and Meitei, 2024).

Parent education levels significantly affect attitudes' towards private Pre-primary education. Research indicates that parent's educational backgrounds significantly influence their attitude towards education. A study on parental aspirations suggests that educated parents often have higher educational aspirations for their children, which could be extended to preferring private Pre-primary education for better foundational learning (Devi, and Meitei, 2024). Other studies suggest that parents with higher educational attainment often prefer private schooling, as they tend to prioritise quality education and are more informed about the educational landscape (Ghosh and Steinberg, 2022). Educated parents generally view early childhood education as a foundation for lifelong learning, with research showing that higher maternal education is associated with greater parental involvement (Erdener and Knoeppel, 2018).

In contrast, parents with lower educational backgrounds may

demonstrate indifference or negative attitude towards Pre-primary education, limiting their child's access to and engagement in early educational opportunities (Ghosh and Steinberg, 2022). This disparity highlights the need to foster awareness and engagement among less-educated parents to help bridge the access gap in early childhood education. Studies suggest that children from families with higher parental education levels exhibit better school maturity and readiness, highlighting the critical role of parental awareness in shaping educational choices (Zeteroğlu and Kozan, 2020).

Mothers' occupation and economic status also impact educational choices for Pre-primary schooling. Employed mothers, especially those in higher-paying jobs, tend to favour private schooling due to the perceived benefits, such as better facilities and educational quality (Devi and Saroh, 2023). Educated mothers working in professional fields often prefer private schools because they emphasise holistic development (Zeteroğlu and Kozan, 2020). On the other hand, less-educated mothers or mothers who are homemakers may prioritise affordability over quality, while still viewing private schooling as an investment in their children's future. Meanwhile, women in low-income or unstable jobs often focus on cost-effectiveness, opting for public schools or budget-friendly alternatives to ensure

education remains accessible despite their financial constraints. This economic divide reveals how financial considerations influence the choice between public and private education, underscoring the need for affordable and high-quality educational options.

Geographical location plays an equally critical role in shaping attitude towards Pre-primary schooling. Parents in urban areas often have greater access to resources and information about educational options, making them more likely to choose private schools for their children (Devi and Saroh, 2023). This preference is attributed to the better availability of private institutions in urban areas and enhanced access to educational resources and community support systems. In contrast, rural parents face structural and economic barriers, including limited schooling options and financial instability, which may create anxiety over educational decisions (Abbott-Chapman et al., 2017). Such constraints make it challenging for rural parents to access or prioritise private education, underscoring the need for supportive policies that improve rural access to quality education.

Research highlights that parental attitude towards Pre-primary education is influenced by educational level, economic status, and geographic location. Higher education, urban residency, and employment are linked to positive

views on private Pre-primary schooling. For policymakers, these findings suggest the importance of addressing regional, economic, and educational inequalities to build a more inclusive early education system. Further, research should consider regional socio-cultural factors influencing parental attitudes, as recommended by Siddiqui (2014) and Widiake (1975), to support equitable access and developmental outcomes for all children.

RATIONALE OF THE STUDY

The rationale for this study stems from the critical role that Early Childhood Education (ECE) plays in shaping a child's cognitive, emotional, and social development. Pre-primary education, a key component of Early Childhood Care and Education (ECCE), is essential for building a strong foundation for lifelong learning. Realising this, the National Education Policy (NEP 2020) emphasises the significance of providing high-quality early childhood education to all children. In this context, parental involvement and attitude towards private Pre-primary education become crucial, as they significantly influence a child's access to and engagement with educational opportunities.

Despite the well-documented benefits of early education, parental attitudes towards private Pre-primary education vary significantly across

different socioeconomic backgrounds and geographic locations. In India, especially in rural areas like the Thoubal district of Manipur, limited research has been conducted to explore how parents perceive Pre-primary education, particularly in private schools. This gap in the literature justifies the need for a region-specific study that examines the factors influencing parental attitudes, such as education level, occupation, and rural versus urban residence.

Understanding these attitudes is critical because parental perceptions shape decisions about their child's early education and affect their involvement in learning. In regions like Thoubal, where access to quality private Pre-primary education may be inconsistent, exploring how parents perceive the value of private Pre-primary education can help educators and policymakers to identify the areas for improvement. Furthermore, this study can contribute to policy development by providing insights into the factors that hinder or promote positive parental engagement in early education.

This study seeks to address gaps in the literature on parental attitude towards private Pre-primary education and propose interventions to improve parental perceptions. By promoting greater parental engagement, this study seeks to enhance educational outcomes for young children and advance equitable

access to quality early education, as envisioned in the National Education Policy 2020.

STATEMENT OF THE PROBLEM

The problem of the present study is stated as 'Parental Attitude Towards Private Pre-Primary Education in Thoubal District in Manipur.'

OBJECTIVES

1. To explore the attitude of mothers towards private Pre-primary education based on their occupations
2. To study parents' attitude towards private Pre-primary education based on their location— rural and urban areas
3. To explore parents' attitudes towards private Pre-primary education based on their educational level

HYPOTHESES

1. There is no significant difference in the mothers' attitude towards private Pre-primary education based on their occupations.
2. There is no significant difference in parents' attitude towards private Pre-primary education based on their location—rural and urban areas.
3. There is no significant difference in parents' attitude towards private Pre-primary education based on their educational level.

DELIMITATION OF THE STUDY

The study is delimited to:

1. the parents of private Pre-primary schools in Thoubal District, Manipur;
2. the tool used; and
3. the sample size selected.

RESEARCH METHODOLOGY

In the present study, the investigator used the descriptive survey method.

Population and Sample

The population for this study consists of parents of children attending private Pre-primary schools in Thoubal district, Manipur. Sixty private Pre-primary schools were selected using a simple random sampling method. The final sample consisted of 251 parents (109 males and 142 females), representing a mix of both rural and urban areas.

Tools and Statistical Techniques

The study used a standardised tool for measuring parental attitude towards Pre-school education

developed by A. Venkatesan, 2018. The tool includes 25 items that assess various dimensions of parental attitude, such as emotional support, academic involvement, and perceptions of the importance of early education. The data were analysed using statistical techniques using SPSS, including mean, standard deviation, t-test, ANOVA, and z-scores, Tukey's HSD test and Levene's Test.

ANALYSIS AND INTERPRETATION

Objective 1: Mothers' Attitude Towards Private Pre-primary Education Based on their Occupations

The group statistics in Table 1 below reveals that 211 homemakers have a mean attitude score of 1.550 with a standard deviation of 0.4987. On the other hand, 40 working women have a slightly higher mean score of 1.650 with a standard deviation of 0.4830.

Further, a t-test was conducted to determine if this difference is statistically significant.

Table 1
Group Statistics

Category	N	Mean	Standard Deviation	Standard Error Mean
Homemaker (1)	211	1.550	0.4987	0.0343
Working Women (2)	40	1.650	0.4830	0.0764

Table 2
Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference
Equal variances assumed	10.048	0.002	-1.171	249	0.243	-0.1002	0.0856
Equal variances are not assumed			-1.197	55.929	0.236	-0.1002	0.0837

Levene's test for equality of variances (Table 2) indicates a significant difference ($F = 10.048$, $p = 0.002$), meaning the assumption of equal variances is violated. Hence, the t-test for unequal variances is more appropriate. The t-test yields a t-value of -1.197 with 55.929 degrees of freedom and a p-value of 0.236, greater than the 0.05 significance level. Therefore, the difference in mean scores is not statistically significant.

We fail to reject the null hypothesis since the p-values (0.236 and 0.243) are above the 0.05 significance level. It indicates no statistically significant difference in the attitudes of homemakers and working

women towards private Pre-primary education. The slightly higher mean score for working women does not demonstrate a meaningful difference between the two groups.

Objective 2: Parent's Attitude towards Private Pre-primary Education based on their Locations—Rural and Urban Areas

Table 3 shows that parents in rural areas (mean = 1.610) have a slightly higher attitude score towards Pre-primary education compared to parents in urban areas (mean = 1.526). However, the statistical significance of this difference must be tested using a t-test.

Table 3
Group Statistics

Location	Rural (1) Urban (2)	N	Mean	Standard Deviation	Standard Error Mean
Rural (1)	1.0	118	1.610	0.4898	0.0451
Urban (2)	2.0	133	1.526	0.5012	0.0435

Table 4
Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference
Equal variances assumed	5.608	0.019	1.337	249	0.182	0.0839	0.0627
Equal variances are not assumed			1.339	246.669	0.182	0.0839	0.0626

Table 4 reveals that Levene's Test for Equality of Variances shows a significance value of 0.019, less than 0.05, indicating that the variances between the rural and urban groups are unequal. However, the t-test results with and without equal variances show a p-value of 0.182. This value is above the 0.05 significance level. The results indicate that the mean difference in attitude scores between rural (mean = 1.610) and urban (mean = 1.526) parents is not statistically significant, as the p-value is 0.182 (greater than 0.05).

Since the p-value is above 0.05, we fail to reject the null hypothesis (H_0). It indicates no statistically significant difference in parents' attitude towards private Pre-primary education based on their locations (rural vs. urban areas). Hence, in this study, location does not appear to shape parents' attitude substantially towards private Pre-primary education in the district.

Objective 3: Parent's Attitude towards Pre-primary Education based on their Qualifications

The objective focuses on understanding how parents' educational qualifications influence attitude towards Pre-primary education.

Table 5
Test of Homogeneity of Variance

Levene Statistic	df1	df2	Sig.
7.971	2	248	0.000

As shown in Table 5, Levene's test assesses whether the variances across the groups (based on qualifications) are equal. The p-value is 0.000, less than 0.05, indicating that the variances significantly differ across qualification groups. Therefore, we proceed with caution in interpreting the ANOVA results since the assumption of homogeneity of variances has been violated.

Table 6
ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.965	2	1.983	8.521	0.000
Within Groups	57.700	248	.233		
Total	61.665	250			

The ANOVA test results from Table 6 show that the F-value is 8.521 with a p-value of 0.000, well below the significance threshold of 0.05. It indicates a statistically significant difference in parents' attitude towards private Pre-primary education based on their qualifications. Therefore, we reject the null hypothesis (H_0), implying that parents' educational qualifications significantly impact

level qualifications. Parents with undergraduate qualifications have a higher mean attitude score towards private Pre-primary education compared to graduates (mean difference = 0.2288, $p = 0.001$) and masters (mean difference = 0.3274, $p = 0.010$). However, there is no significant difference between graduates and those with master's qualifications ($p = 0.658$).

Table 7
Multiple Comparison Test (Tukey HSD)

Comparison	Mean Difference (I-J)	Standard Error	Sig.
Undergraduate vs. Graduate	0.2288*	0.0639	0.001
Undergraduate vs. Masters	0.3274*	0.1117	0.010
Graduate vs. Masters	0.0986	0.1130	0.658

**The mean difference is significant at 0.05 level.*

their attitude towards private Pre-primary education in the region.

The Tukey HSD test was conducted to identify the significant differences between the qualification groups. Table 7 reveals a significant difference between parents with undergraduate qualifications and those with graduate and master-

Table 8
Multiple Comparison of Means

Qualification	N	Mean Attitude Score
Master	22	1.364
Graduate	106	1.462
Undergraduate	123	1.691

The multiple comparison of means in (Table 8) shows that parents with undergraduate qualifications (mean = 1.691) have the most positive attitude towards private Pre-primary education, followed by graduates (mean = 1.462) and masters (mean = 1.364).

The results of the ANOVA and post-hoc tests indicate that parents' attitudes towards private Pre-primary education significantly differ based on their educational qualifications. Specifically, parents with undergraduate qualifications have a significantly more positive attitude towards private Pre-primary education than those with graduate and master-level qualifications.

Levene's test indicates unequal variances across groups, so results must be interpreted cautiously. Nonetheless, the ANOVA test confirms a statistically significant difference in attitudes based on qualifications ($p = 0.000$). Post-hoc comparisons reveal the key differences between undergraduate parents and the other two groups (graduate and master). At the same time, there is no significant difference between graduates and master's degree holders.

Thus, we reject the null hypothesis (H_0) and conclude that parents' qualifications significantly affect their attitudes towards private Pre-primary education. This finding suggests that parents with lower educational attainment (undergraduates) tend to have a more positive attitude towards

private early education than more educated parents in the region.

DISCUSSION

The study on parental attitude towards private Pre-primary education in Thoubal district aligns with the existing research on the influence of socioeconomic factors in early childhood education. Consistent with Erdener and Knoepfel (2018), the study found no significant difference between homemakers and working mothers, suggesting that employment status does not impact attitude towards early education. This finding reflects the broader argument that awareness shapes parental engagement more than occupational roles (Epstein, 2011). The slightly higher average score of the rural parents (1.61) compared to the urban parents (1.53) aligns with Devi and Meitei (2024), who observed a rising preference for private schools in rural areas due to perceived long-term benefits. Furthermore, parent's educational qualifications were a key determinant, with undergraduate degree holders showing the highest favourability (mean = 1.69). It supports Ghosh and Steinberg's (2022) argument that moderately educated parents recognise the role of early education in future academic success. These findings highlight the need for targeted outreach, as emphasised by Siddiqui (2014), to bridge educational disparities and promote equitable access, aligning with the objectives of the NEP 2020.

CONCLUSION

This study, conducted in Thoubal district, Manipur, sought to understand parental attitude towards private Pre-primary education. The research focussed on 251 parents from diverse backgrounds, examining the influence of occupation, location, and educational qualifications on their perceptions of early education. The analysis revealed that mothers' employment status did not significantly impact their attitudes. Both homemakers and working women showed comparable levels of support, indicating that the perceived value of early education transcends occupational differences. Similarly, no significant differences were observed between the attitudes of parents residing in the rural and urban areas. It suggests a growing awareness and acceptance of private Pre-primary education across geographical boundaries.

The study found that parental educational attainment was a key factor influencing attitude towards early education in private Pre-primary schools in the region. Surprisingly, parents with undergraduate degrees displayed the most positive views compared to those with higher qualifications. This unexpected finding suggests that parents with less formal education may perceive private Pre-primary education as a vital opportunity for their children's development, perhaps recognising its potential to bridge the educational gaps that they experienced.

RECOMMENDATIONS

These findings highlight the need for a targeted outreach and awareness programmes that cater to the diverse socioeconomic and educational backgrounds of parents in the Thoubal district. Building upon the strengths identified in the study, the following recommendations are proposed:

- *Awareness campaigns:* Comprehensive awareness campaigns should be implemented, emphasising the crucial role of early childhood education in a child's cognitive, social, and emotional development. To reach a wider audience, these campaigns should leverage diverse media platforms, including community workshops, printed materials, radio programmes and social media.
- *Parent-teacher engagement programmes:* Regular parent-teacher interactions through meetings, workshops, and seminars can facilitate open dialogue and address parental concerns. These platforms can provide valuable insights into private Pre-primary education objectives, methodologies, and expected outcomes, fostering a deeper understanding of the learning process.
- *Collaboration with educational institutions:* Strong partnerships between private Pre-primary schools, local government authorities, and Non-governmental Organisations (NGOs) can help to

effectively disseminate information about early education programmes and available resources.

- *Special focus on educated parents:* Tailored programmes should be designed to engage parents with higher educational qualifications, addressing their specific concerns and perspectives. Providing detailed information on the cognitive and emotional benefits of early childhood education through channels that resonate with this demographic, such as academic workshops or online resources, may be effective.
- *Improving access to quality private pre-primary education:* Policies should prioritise enhancing accessibility and quality in private Pre-primary education across the rural and urban areas. Ensuring affordability and maintaining high educational standards are crucial to building trust and encouraging a wider participation.
- *Developing educational materials:* Creating easily accessible educational resources, such as books, pamphlets, and e-resources, that explain the importance of early childhood

development can empower parents to make informed decisions. Translating these materials into local languages will ensure wider accessibility and comprehension.

- *Continuous professional development for teachers:* Investing in continuous professional development for private Pre-primary teachers can equip them with the latest pedagogical techniques and enhance their ability to engage with parents effectively. Well-trained teachers can serve as valuable resources, bridging the gap between home and school environments.

The recommendations aim to establish a supportive early childhood education ecosystem in Thoubal district by addressing parents' unique needs and perspectives, particularly those with moderate to low favourability. This collaborative approach ensures quality private Pre-primary education for all children, benefiting the individual children and the community. Increasing parental awareness on the importance of early education in the holistic development of a child will contribute to a brighter future.

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Indelible Ink

Varada Mohan Nikalje*

The curiosity of children is boundless, and sometimes it can be quite challenging to respond to their questions in a suitable and age-appropriate manner. I recall an interaction with a group of children, all studying in Grade 3, about the indelible ink. It was the day after the elections, and the children noticed the stain on my fingernail and the skin around the base of the nail. One child commented:

“My mother has a similar mark on her forefinger.”

“Why is it on your finger?” asked another.

“Who put it there?” was another query.

“My father says the mark is because of the elections. What are ‘elections’?”

I seized the last question, and told the children that ‘elections’ meant the process of electing, or

choosing, a leader. This, I explained, would be similar to how they choose the class monitor. Every child would have a say in the matter, naming the person of their choice. That involves making a decision. “Oh! Yes” they chorused. The concept of decision-making was familiar to them. One of them related it to making a choice of what to eat at a wedding, where an array of dishes would be placed at the buffet. “Yes,” I smiled. “There, you could go back for a second ice-cream. But here, once you have voted, you cannot go for a second time. That’s why the ink is put on the forefinger, as an indication that a person has voted. This is done so that the same person should not vote again and again.

Further, I asked them to notice that the ink is applied partly on the nail and partly on the skin at the

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base of the nail. The ink cannot be washed off from the skin; it remains on the nail until the nail grows out and is replaced by a new one. "The ink travels up the nail," as one child solemnly explained to me.

"Do the election people buy the ink from the market?" asked another. "No, they are given bottles of the ink only for the elections," I answered. The children seemed satisfied with my answers.

It is a misconception among most adults that children are too young to grasp concepts such as elections, democracy, etc., when, in fact, these are all layered. As the child grows, a deeper layer may be explored. For instance, it would be of interest for the older children to know that the indelible ink was first manufactured at the Election Commission of India's request by the Council of Scientific and Industrial Research. It was to counter the challenge of fraudulent voting, that research work on formulating the ink began in the 1950s by scientists. Later, the National Research Development Corporation patented it.

Mysore Paints & Varnish Limited has been licensed to manufacture the ink. It was first used in the 1962 general elections. People in Karnataka proudly recall that it was established in 1937 by Nalwadi Krishnaraja Wodeyar, the then Maharaja of Mysore.

When ballot papers were the norm, voters had to mark their preference on them. Before the paper

was given to the voter, a voter's index finger would be marked with the ink. It is a purple-black ink, applied on the index finger of the voter's left hand at the polling booth to prevent the duplication of votes. It continues to be used in all the elections across India.

A 10 millilitre ink bottle is enough to mark the fingers of approximately 700 people. The ink is exported to more than 30 countries around the world, including Thailand, Singapore, Nigeria, Malaysia, and Cambodia. However, the procedure of its application varies. In Columbia and the Maldives, voters need to dip their finger in the ink. In Burkina Faso, a country in West Africa, the ink is applied with a brush, while nozzles are used in Turkey.

An ounce of experience is worth a pound of theory. Hence, participating in an election would embed the process in children's minds.

A teacher may display pictures of three animals pasted on the cardboard, such as an elephant, a monkey, and a kangaroo. The children should 'elect' which one they would like to have as a pet. Thus, a 'fun election' can be held, which will help them understand how voting works. Each child can come up and make a mark on a sheet of paper at a 'ballot stand'. Make a large badge for yourself (the teacher) as the 'Chief Election Officer'. Let the children count loudly after you as you write down the results.

Show children pictures of the elderly people going to the polling

booth to cast their vote, supported by family members, walking with the help of canes, etc. Ensure that children understand that the persons/children with special needs/*divyangjan* must also vote. Let children imbibe the idea that voting is to be taken seriously.

In this context, since all adults are supposed to vote, some of the children were unsure about whether their adult family members had participated in elections. Children were encouraged to find out from young adults in the family (18 years and above) whether they had filled the form to apply for voter card. If they are registered to vote, children can have a look at the voter identity card. (This topic becomes part of our message during discussions with parents—celebrate voting with your

children! Share with them when and where and how you vote!)

As elementary school teachers, it is our privilege and duty to develop good habits of not only health and hygiene but also critical thinking and decision-making among children. More importantly, it can set the stage for students' future involvement as engaged and informed citizens.

Children are our future scientists, authors, doctors, diplomats, caretakers, service workers, astronauts, or civic officials, and most importantly, one day they will all make decisions in our democracy. It is of utmost importance for us to teach our children the basics of civic life. Voting is a civic responsibility and a democratic way to voice our concerns.

BOOK REVIEW

Fu-Ku

An Alien

Geyin Boli*

Author and

Illustrator : Jagdish Joshi

Translator

(English) : Kaveri Joshi

(Odia) : Shanti Mahapatra
(Bal)

Publisher : National Book Trust,
India

Year of

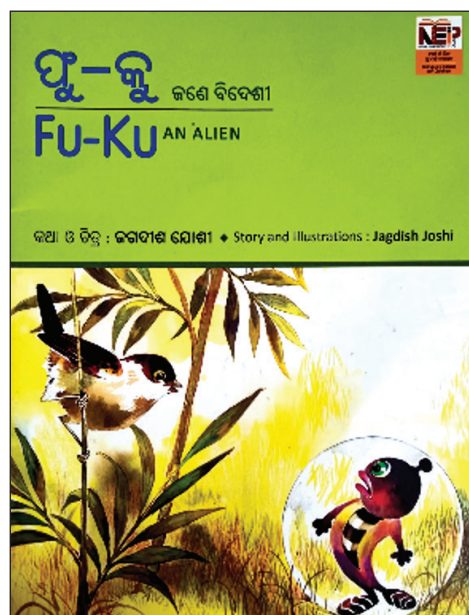
Publication : 2007 (First English
Edition), 2010 (First
Odia Edition), 2021
(First Bilingual Odia-
English Edition)

Price : ₹65

Pages : 12

ABOUT THE BOOK

The story *Fu-Ku: An Alien* is written and illustrated by Jagdish Joshi in Hindi, and later translated into English by Kaveri Joshi. It was later translated from English to Odia by Shanti Mahapatra (Bal). The first bilingual edition (Odia-English) was published in 2021 by the National Book Trust, India for children



of 6 to 8 years of age. It is the story of an alien named Fu-Ku. It is a written and illustrated storybook of 24 pages folded in two. Through an imaginary creature—an alien—the story shows the impact of wars and fighting, and the moral value of peace.

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STORY PLOT

Fu-Ku, comes down to Earth from a spaceship to see the beauty of Earth. What he sees on Earth is like a perfect scene—colourful flowers, green foliage, trees, a blue sky, and gleaming water, unaware of the war-like situation that exists in many places on Earth. Fu-Ku is very happy being on Earth, jumping here and there. His excitement indicates that Fu-Ku has not seen the beauty of Nature on his planet or anywhere else.

Suddenly, a crow pounces upon Fu-Ku, but he manages to escape, though with great difficulty. Seeing this, a little bird becomes curious about Fu-Ku. Perching on a branch near him, he politely asks him his name and about his home. Fu-Ku likes the bird, and they soon become friends. Fu-Ku tells the bird his name, and where he comes from—a faraway planet in the galaxy. He then asks the bird about the crow who attacked him. So the bird tells him about the crow, its cruelty, and how it eats small birds and insects. Hearing this, Fu-Ku shares with the bird an idea to teach a lesson to the crow by spreading the fine thread that he has brought with him, all over the bush. Interestingly, after a while, when the crow attacked Fu-Ku again, and the moment it touched the thread, there was a big bang, the sound that caused the crow to fall to the ground and become unconscious. Fu-Ku, then asked the bird to cut the thread so that the crow would fly freely again.

When Fu-Ku and the bird were talking, there was a loud noise, along with terrifying sounds. The bird explained to him that it was the sound of the people fighting with firearms and bombs, destroying Nature, animals and birds, trees, and houses. As these things are unknown to Fu-Ku, he begins to think that humans are very strange. He returns to his spaceship in deep sadness and shock, because the reality of human life on Earth is far from his imagination.

INTERPRETATION OF THE STORY

The central aim of the story is to deliver a message that ‘fighting destroys’. Human beings are not only destroying themselves through fighting, but events like wars or battles have a devastating effect on the Earth’s environment. Wars pollute air and water, and destroy the co-existing ecosystem and biodiversity. The most vital lesson is that peace is crucial for sustainable development. The author attempts to elucidate through the story that humans should avoid fighting and coexist peacefully and happily with one another. Fu-Ku came down happily to Earth seeing the beauty of nature on this planet, but went back to the space in utter disappointment and shock at the sight of human beings fighting among themselves. He sadly observes how wars destroy this wonderful place.

Since time immemorial, wars have been a part of human existence and even history has been unable to cover the entire record. The consequences

of wars are evident in the history of the past. There has never been a win-win situation after a war. Will there ever be? Who wins the war? Nobody. We shall never erase the memory of the outcome of the Kalinga War 261 BCE fought between the Mauryan Empire, led by Emperor Ashok, and the independent kingdom of Kalinga, in the present-day Odisha and parts of Andhra Pradesh. What was the outcome of the war that changed Ashoka completely from within? Didn't he win the Kalinga war in literal sense? So why was he so unsettled even after a victory? Why did he experience feelings of guilt within him? Witnessing the brutality of war—the killings, pain, and immense suffering—deeply affected Ashoka, so much so that he later shifted towards pacifism and accepted the path of Buddhism. War breeds war, and revenge begets revenge. There was a war within Ashoka even after the literal war was over. He saw that in the end, war brought no good, and that peace and harmony are the ultimate requirements to sustain Nature and living beings anywhere on Earth.

RELEVANCE TO THE CHILD

Some experts believe that exposing children to topics like war or fighting is inappropriate, but such realities of life should be told to children of all ages, and their cost and consequences should be explained in an age-appropriate manner. From an early

age, children should be made aware of both good and bad things in the society, if they are to be trained and prepared for the future. The mention of war in the story is indicative of the fights that children may go through in everyday life, since violence is not restricted only to a full-fledged war. They should be taught to select the right path in life from the very beginning. Besides, through the story, moral values like compassion, empathy, peace, etc. could also be inculcated among the young ones.

By promoting peace, we can protect and ensure a healthy, thriving environment for the future generations to inherit. This little story communicates much about the human existence and the reality of life in a child-friendly way. Children are not the only beneficiaries; indeed, the story gives life's great lessons to adults as well. It is important to promote peace and raise a more compassionate and informed generation, one that would value harmony and co-existence. Above all, the story reminds us of the beauty of our Earth, Nature, and our surroundings that could have been preserved in a much better way for sustainable development.

THEME

The story adopts the character of an alien who comes from a different planet to bring us to the realisation that Earth is a beautiful place, and to remind us our moral responsibility to safeguard Earth. Thereby, the central theme of

the story is teaching us to say No to fighting and wars, support peace, and protect Nature and the beauty of the Earth. It talks of creating a world that is beautiful because it is not spoilt by wars and battles. The story urges us to select the right path in life and to adopt the principle of living in peace. Narrated through the character of an alien—a creature that is believed to exist on another planet—the story explains how life may seem beautiful from the outside, but is full of troubles, difficulties, and problems. Each of us needs to make a genuine effort to avoid violence and contribute towards making Earth our peaceful home, irrespective of the country we belong to.

LANGUAGE USED

The story was first written in Hindi, titled—फू-कू: दूसरे ग्रह का यात्री and translated into English. It was again translated from English to Odia. It is also available in a bilingual (Odia-English) version, first published in 2021. This book review is based on the English version of the book. The words used in the English version are mostly simple, but the translator has made use of some words that may be new to children aged 6–8 years. It focusses on providing opportunities for children to learn new words like ‘galaxy’, ‘spaceship’, ‘conscious’, ‘unconscious’, ‘creature’, ‘foliage’, etc. The explanation in the story is quite straightforward and easy for a child

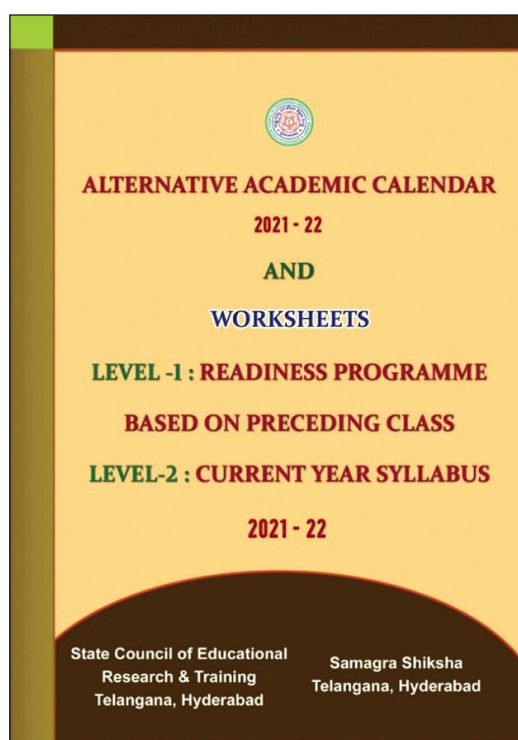
to understand. It also makes use of onomatopoeia, for example, ‘boom’ and ‘bam’ to express sound effects. The word Fu-Ku in the Japanese language means happiness, fortune, clothing, or an act of blowing. The author may have deliberately adopted a Japanese name for the alien, thus creating a platform for encouraging the idea of multilingualism.

ILLUSTRATION

The illustrations on each page complement the story plot very well. The first two pages depict a spaceship that looks like a colourful gem above Earth with a galaxy of stars, and the next two pages represent the beauty of Earth. An alien, the imaginary creature in the story, is shown inside a bubble-like structure, and his features look like those of a tiny little insect, the size of a little bird, and much smaller than a crow. The art work uses attractive and vibrant colours appropriate for each scene. The illustrations depict a dark galaxy of stars above Earth, beautiful Nature with colourful flowers, and a blue river. An entire page is dedicated to the expression of the loud sounds ‘boom’ and ‘bam’ in dark red and yellowish colours, which is expressive of danger and destruction. Interestingly, the deep-black crow in the illustration is depicted losing its feathers, expressing the outcome of the struggle to break free from the thread.

Before FLN and Beyond—Telangana SCERT

A. Venkata Ramanamma*



The State Council of Educational Research and Training (SCERT) of Telangana located at Hyderabad has been playing a dynamic role in coming up with the necessary material in the form of various books and materials, and living up to the expectations of teachers and students. Due to the pandemic, the challenges in education were unexpected as well as multi-faceted. The lack of infrastructure and resources, coupled with the digital divide, exacerbated the situation. Furthermore, teachers too had to face the sudden transition of adopting new methods of teaching with technology.

The Curriculum and Textbooks Department at SCERT Telangana and a team of content developers produced a module with printable worksheets in 2021, including the enhanced and tweaked academic calendar. This module was placed in the public domain as it was not feasible to distribute physical copies to the

*Secondary Grade Teacher, MPUPS Indresham, Patancheru Mandal, Sangareddy District, Telangana

students. A system was in place where Telangana SCERT in collaboration with the State Institute of Educational Technology (SIET) produced a series of class-wise and subject-wise digital lessons. After the telecast of every digital lesson, the printouts of the lesson-related worksheets were distributed to the students. This practice helped the teachers to be in touch with the students, though not directly.

To keep up the momentum created by the digital lessons, worksheets, and the commendable work by teachers; the School Leadership Academy at Telangana SCERT, an extended arm of the National Council for School Leadership (NCSL)—National Institute of Education Planning and Administration (NIEPA) documented the remarkable journeys of the teachers in the form of success stories of the meritorious teachers who came up with the innovative activities. This encouragement inspired many teachers and paved the way for School Leadership Academy (SLA) to release a series of books in the consecutive academic years as well. The motivation continues.

When the schools reopened, the major challenge was to address the learning gaps among the students, especially, among the students of Grades 1 and 2. In sync with the Vidya Pravesh Guidelines of the National Council of Educational Research and Training (NCERT) related to the school readiness programme, SCERT Telangana developed the School Preparation Module for the academic year 2022–2023 for the first and second graders with activities and a timetable for 40 working days. Primary school teachers across the State were encouraged to use activities from the module to address the learning gaps of the students who were directly enrolled in Grades 1 and 2 without pre-primary education, as a result of COVID-19.

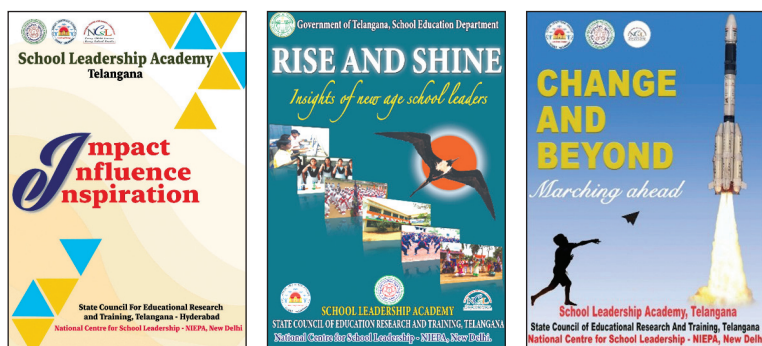
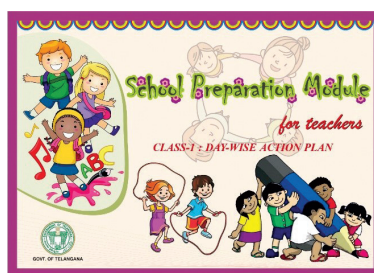


Figure 1: Series of Books – SLA

The learning gaps among the students of Grades 3, 4, and 5 have been alarming, and therefore, the Telangana SCERT saw the need to streamline the teaching-learning process by designing proper lesson plans for classroom transactions. A team of subject experts and teachers, including those from Grades 1 and 2 as content developers, were engaged in preparing teachers' handbooks with lesson plans for the entire academic year. To augment the learning process of the students, class-wise workbooks for Grades 1 to 5 were also prepared for the year 2023–2024 alongside the handbooks. The physical copies

of the handbooks were given to the schools, and every Primary school student was supplied with three copies of workbooks for English, Telugu, and Mathematics.

No matter when there arises an academic situation that needs immediate attention, Telangana SCERT has lived up to the expectations and come up with proper planning and publications within record time. The aforementioned support and other academic activities are helping the Primary school education systemise the classroom transactions in the hope of creating a better teaching-learning environment and sustainable learning among the students.



Figure 2: Grade 4 English Workbook for Students



Figure 3: Grade 4 English Handbook for Teachers

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भारतीय आधुनिक शिक्षा

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद् की त्रैमासिक पत्रिका है। यह पत्रिका शिक्षाविदों, शैक्षिक प्रशासकों, शिक्षक-प्रशिक्षकों, शिक्षकों, शोधार्थियों, विद्यार्थी-शिक्षकों एवं विद्यार्थियों को विद्यालयी शिक्षा एवं अध्यापक शिक्षा पर अपने मौलिक शैक्षिक विचार रखने का एक मंच प्रदान करती है।



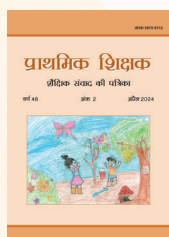
Indian Educational Review

A bi-annual journal which publishes articles and researches on educational policies, practices and values that are useful to practitioners in the contemporary times. The journal also provides a forum for teachers to share their experiences and concerns about schooling processes, curriculum, textbooks, teaching-learning and assessment practices.



Journal of Indian Education

A quarterly periodical that provides a forum for teachers, teacher educators, educational administrators and researchers through presentation of novel ideas, critical appraisals of contemporary educational problems, and views and experiences on improved educational practices. The journal reviews educational publications other than textbooks.



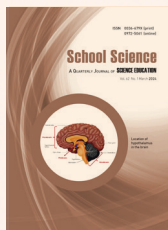
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The Primary Teacher

A quarterly journal that carries articles and research papers on educational policies and practices, and material that is useful for practitioners in contemporary times. The journal also provides a forum to teachers and teacher educators to share their experiences and concerns about the schooling processes, curriculum, textbooks, teaching-learning, and assessment practices, particularly for the Foundational and Preparatory Stages.



School Science

A peer-reviewed quarterly journal that aims to bring the recent developments in the areas of science, mathematics and environmental education within easy reach of teachers and students by serving as a platform to disseminate research findings, sharing innovative pedagogies, present theoretical work and report other advances towards improving teaching-learning in sciences.



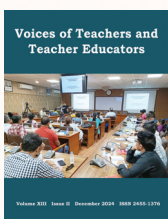
Firkee Bachchon Ki

A half-yearly bilingual magazine (Hindi and English) consisting of poems, prose and activities, which appeal to children. It aims to develop reading culture among children at the Foundational Stage.



Indian Journal of Educational Technology

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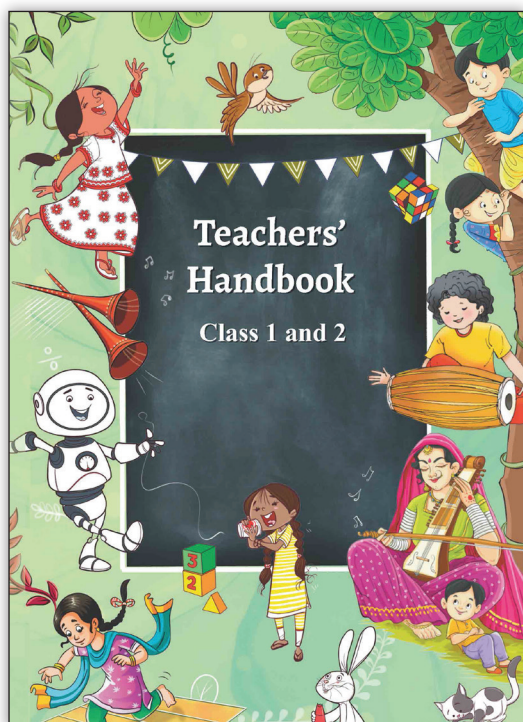
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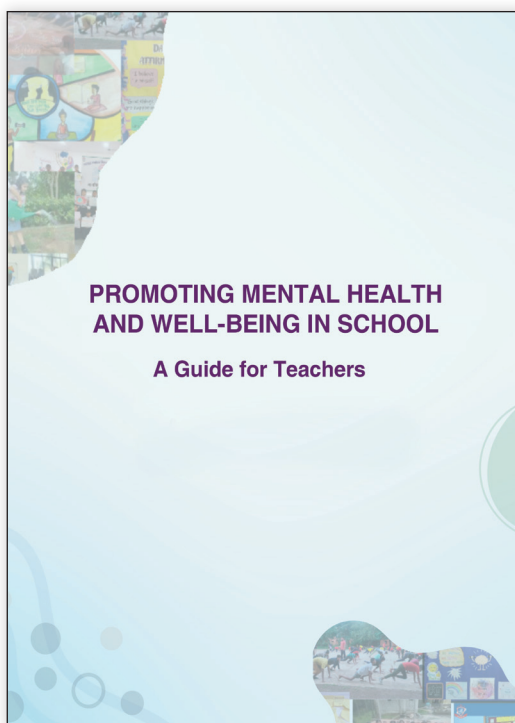
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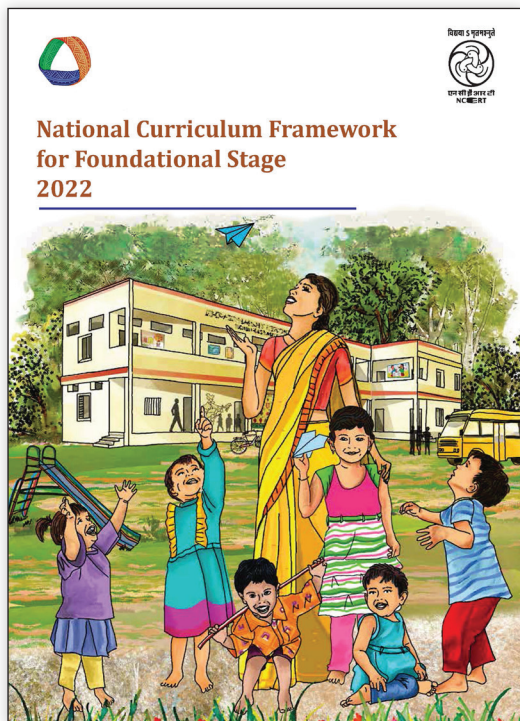
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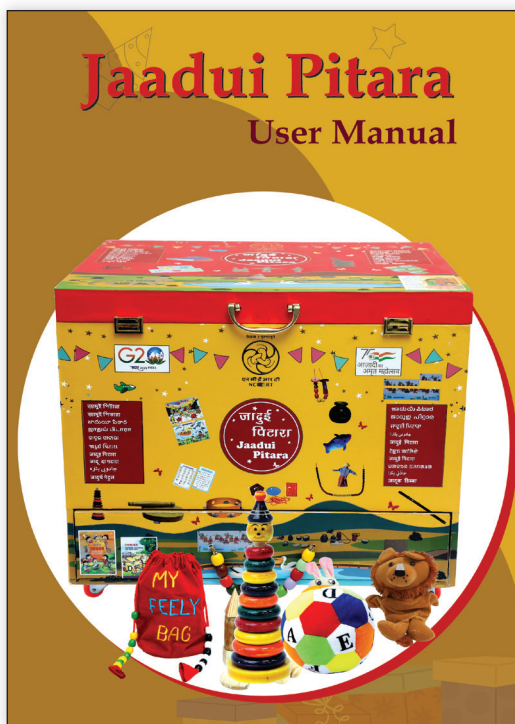
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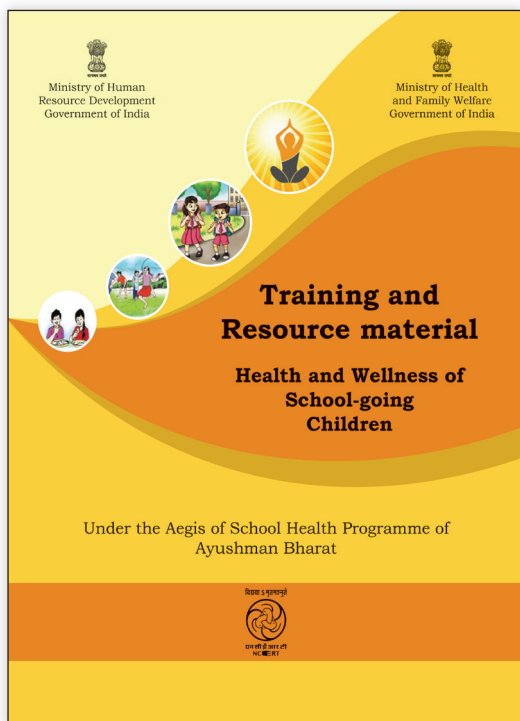
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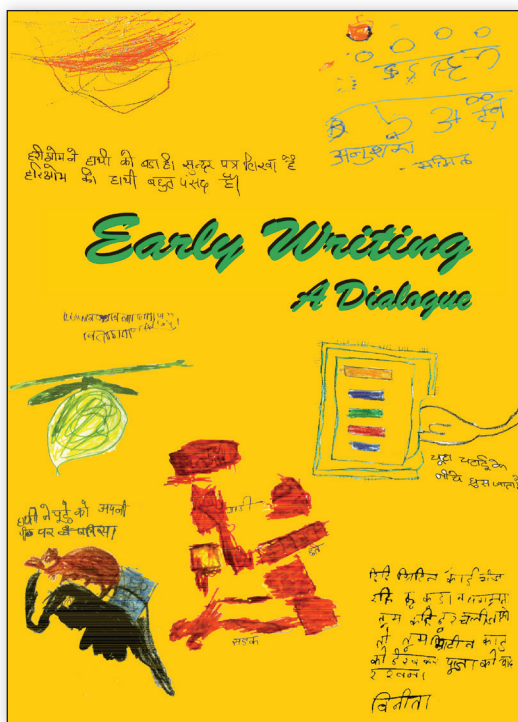
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- Each article should have a short abstract in about 150 words.
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Book Review

This section reviews fiction and non-fiction books and documents relevant for school teachers. It provides a concise and critical perspective of a variety of works with details on language and style, along with a short summary, that would facilitate schools in replenishing their libraries.

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