

# Foundational Literacy and Numeracy as a Path for Effective Early Childhood Care and Education: A Comprehensive Review

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## **Abstract:**

The National Education Policy (NEP 2020) emphasis on enhance early literacy and numeracy skills for young children, supporting Early Childhood Care and Education (ECCE) in India. This paper aimed to study about the importance of Foundational Literacy and Numeracy (FLN) for effective ECCE and reveals implementation challenges of Foundational Literacy and Numeracy (FLN) concerning ECCE, by synthesizing existing related literature to provide a comprehensive understanding. The researcher used a qualitative research design and data was collected from secondary sources, such as academic journals, articles, government policies and reports etc. The findings reveal importance of FLN for foundation, academic success, life-long learning and practical life skills for an individual. Furthermore, the study identifies potential challenges such as gaps in early literacy, lack of trained teachers, shortage of resources and limited emphasis on child's working memory. Additionally, this study shows some ways considering various reviews for addressing the emerging new issues and achieving of universal FLN skills among young children.

**Key Words:** Foundational Literacy and Numeracy (FLN), Early Childhood Care and Education (ECCE), NEP-2020.

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## **I. INTRODUCTION:**

Education is universally recognized as a key transformative force that shapes individuals, societies and nation's growth. In India, the National Education Policy (NEP) 2020 represents a historic reform in Indian education system according to the needs of 21<sup>st</sup> century. The policy focuses on the prioritization of Early Childhood Care and Education (ECCE) and Foundational Literacy and Numeracy (FLN) acknowledge as the foundation for lifelong learning. It recognizes that a child's 80% cumulative brain development occurs before the age of 6. Thus, early educational initiatives are crucial for cognitive, emotional and social development.

The NEP 2020 recommends a holistic, flexible, and multidisciplinary approach to early education that foster critical thinking, nurtures creativity, and curiosity from the very beginning. The inclusion of ECCE in the system of formal schooling is a fundamental shift in Indian education system. ECCE create the bedrock upon which all the future learning is built. An effective ECCE program lays the groundwork for foundational literacy and numeracy by introducing children to these basic ideas through play-based and interactive experiences, resulting in improves school readiness, academic achievement and socio-emotional competencies which contribute to the child's overall growth and long-term educational success.

### **Concept of Foundational Literacy and Numeracy (FLN)**

Literacy is the ability to use in reading, writing and listening skills which helps an individual to understand, create and communicate effectively in everyday life. Numeracy is the ability to cognize basic operations with numbers that helps in apply mathematical skills and understanding to solve problems of daily life including time, pattern, shapes, and measuring units etc. Therefore, NEP 2020 defines FLN as the basic skills in reading, writing, and mathematics that children need to acquire these skills in early years for laying the framework for future learning.

## **II. OBJECTIVES:**

- i) To study the importance of Foundation Literacy and Numeracy for effective ECCE.
- ii) To identify the challenges affecting the implementation of foundational Literacy and Numeracy Programs.

### **III. REVIEW OF RELATED LITERATURE:**

(Gandhi, 2021) critically reviews the NEP 2020 with a focus on its approach to preschool education and ECCE. NEP 2020 introduces a 5+3+3+4 structure emphasizing play based and experiential learning in the foundational stage. The researcher using a systematic review and examine the curriculum reform, teacher training and integration of mother-tongue for instruction. The study highlighted that challenges such as inadequate infrastructure, limited implementation monitoring and lack of trained ECCE teachers are hampering in effective implementation of ECCE under NEP 2020. It also concludes that quality preschool education can foster holistic child development and strengthen the foundation of Indian education.

(Goel, 2022) conducted research on “Mathematics in NEP 2020: Initiative to Strengthen Foundational Literacy and Numeracy Skills”. The researchers described that generally in India, the students are unfamiliar with the fundamental concepts and skills in mathematics and language even after the completion of primary education. This learning crisis in schools is affecting students’ academic performances and future prospects. This paper discusses the importance of FLN at primary level and how NIPUN Bharat Mission is processing to achieve universal competency in FLN in the light of NEP 2020. The study showed that students capable of FLN skills will be able to understand the different aspect of classroom transition, which helps them achieving learning outcomes at different level of schooling. Also, the dropout rate of at the primary level will be decrease and completion rate of schooling will be increase.

(Kumar & Behera, 2022)examine on influence of home environment on child’s fundamental literacy and numeracy skills in Indian context. The investigators employed a systematic review of relevant literature and presented descriptive summary of different points, issues and ideas that influences home environment. The investigators included 38 primary studies published between 2013 and 2022. The results showed that home environment factors do affect the learning of numeracy and literacy. The key factors like were family educational background, reading and numerical activities at home, resources available at home, reading and numeracy interest of children and parents-child relationship plays a vital role in acquisition of foundational numeracy and literacy skills.

(Laxman, 2024) conducted a study on effective strategies for foundational learning to promote early childhood literacy and numeracy. The investigator synthesizes findings from wide scale of related academic literature to highlight effective methods for nurturing early literacy and numeracy skills. The results indicate a number of key strategies for boosting FLN, including adopting play-based learning approaches, providing educators thorough training and ongoing support, promoting active participation of families and communities, and making use of technological tools.

(Chandra, 2024)examines on “Shaping Foundational Learning Skills: A Harbinger to the Future of Work”. This study emphasizes on the vital role of foundational literacy in shaping overall development of child and achieving goal 4 of Sustainable Development. This study employs a mixed-methods research approach. The results showed that India has taken a lot of steps to improve fundamental education through NEP 2020 and NIPUN Bharat initiatives. However, the researcher identified challenges such as variations in preschool attendance, pedagogical approaches that priorities on rote learning and poor teachers’ quality etc.

(Naeem, 2024) conducted a study on “Mission Foundation Literacy and Numeracy Yet ToBe Achieve”. This paper examines the state of FLN in Indian classrooms, learning crisis and government’s initiatives through the National FLN mission. The investigator uses a literature review analysis and interviews with 8 teachers to study the effectiveness of FLN mission and its fundamental issues. The results highlighted that many students lack basic skills like reading and numeracy and government effort to address this through the national FLN mission but it shows that weak students are segregated and creating a disconnect with their peers.

(Kanujiya & Jaiswal, 2025) explored the importance of ECCE and FLN as a part of India’s National Educational Policy (NEP) 2020. This paper aimed to explain role of ECCE and FLN in supporting holistic learning of children whose age is between 3 to 8 years. It also seeks to identify some key opportunities and challenges for the policy’s vision of equitable and quality early education. The researchers used thematic content analysis approach. The result showed that NEP 2020 highlights ECCE and FLN as key reforms to improve early childhood education through activity-based and child centered education. Effective ECCE programs fostering literacy, numeracy, socio-emotional skills and supporting future academic success. Despite these opportunities, the study identifies challenges like lack of teacher training, poor infrastructure, uneven implementation and limited parental awareness.

(Mariyana et al., 2025) investigated on “Empowering Young Children in Numeracy through Role-Playing Games Application: Advancing Independent Curriculum Goals”. The investigators aim to develop an educational game application to effectively enhance basic numeracy skills in early childhood. The application based on Role-Play Game (RPG) model aligned with the principles of the independent curriculum. Also, the application’s design included local elements for enhance its relevance with the real-life environment. The results indicated that this RPG game application with story elements, interactive characters and tiered challenges

develops numeracy skills in children like number recognition and basic addition. Moreover, the application's interactive features provide positive feedback to the learners which boost motivation for learning.

(Mahapatra & Behera, 2026) discusses the importance and challenges of FLN in strengthening Early Childhood Care and Education (ECCE). The researchers employed a comprehensive review of related literature to find out the concerned areas. The study revealed that FLN skills are essential for child's academic success, lifelong learning and practical life skills which helps them grow in life. It also highlighted major challenges including lack of trained teachers, limited resources, less parental involvement, and not having equal access to quality preschool education.

#### **IV. METHODOLOGY:**

Research methodology refers to the overall strategy, approach, and justification for conducting a research study. It describes how and why to choose a specific method for the data collection, analyze, and interpret to address a research question. For the present study the researcher adopted qualitative research design and it is based on comprehensive review of existing relevant literature on the selected topic. The data was collected from the secondary sources, which include peer reviewed journals, research articles, book chapters, and other open access materials available on online platforms. This current study is based solely on secondary data from published sources and no direct individual participants were involved.

#### **V. RESULT AND DISCUSSION:**

##### **Importance of Foundation Literacy and Numeracy for effective ECCE**

The comprehensive review of related literature highlights multiple significant aspects of FLN skills, which contributing to the all-round development of young learners and strength their basic learning abilities. The aspects are discussed below:

##### *i) Builds Strong Foundation*

FLN helps children develop basic reading, writing and mathematical skills during the early years and these abilities enable children to understand and participate confidently. Studies showed that there is a need of adapting local cultural and socioeconomics context in FLN programs to increase the impact and improve the early childhood outcomes. In India, National Curriculum framework for Foundational Stage (NCF-FS) was launched in 2022 emphasis the importance of FLN skills in ECCE by providing play-based materials to children aged 3 to 8 to foster the FLN skills with the vision of expanding learning beyond the classroom(Chandra, 2024).

##### *ii) Academic Success*

FLN builds a strong foundation during early childhood. It helps children to become confident in reading, writing and problem-solving abilities and enabling them learn effectively for succeed throughout their education. Moreover, investing in quality improvement of early childhood education is vital for developing productive human capital. FLN skills are essential for enable students to achieve better learning outcome, reduce dropout rates and increase completion rates which ultimately contributing to a more educated and self-reliant society(Goel, 2022).

##### *iii) Lifelong learning*

FLN helps in lifelong learning by developing essential skills such as reading, writing communication, critical thinking and problem-solving skills from an early age. These skills enable individuals understand information, adapt new knowledge, make decision their own and continue learning throughout their lives. By adopting FLN skills, children will reach their full potential which ultimately strengthening the educational foundation of our society(Laxman, 2024; Kanujiya & Jaiswal, 2025).

##### *iv) Practical Life Skills*

Foundational education I literacy and numeracy help in developing practical life skills by enabling individual to communicate effectively, read instructions, manage money and solve daily problems of life. Literacy skills help individual understand signs, forms and information in everyday life, while numeracy skills support counting, measuring, budgeting and time management etc. Therefore, activities like number facts, board games, experimenting with objects, learning through patterns, building blocks towers and role-playing providing in ECCE can enhance literacy and numeracy skills.

##### *v) Empowerment and Confidence*

In 2021, the NIPUN Bharat Mission was launched by the Indian government under the Samagra Shiksha scheme with the aim of achieving universal foundational literacy and numeracy skills in children aged 3 to 9 years by 2026-27. The primary focus of this mission is preschool to class III students and provide support to class IV and V students who have not achieved FLN skills(Chandra, 2024; Mahapatra & Behera, 2026). Mastering FLN skills increase confidence in students, fostering positive attitude towards learning that motivates the continue learning and future academic success.

### **Challenges Affecting the Implementation of FLN**

Despite the acknowledged significance of FLN for effective ECCE, India has faces numerous challenges in guaranteeing universal attainment of FLN skills in early years. The key challenges are given below:

#### *i) Barries in ECCE*

The attainment of FLN skills is hampered by a number of issues, despite efforts to improve early childhood education. These challenges include unequal access to quality preschool education, shortage of dedicated qualified teachers and outdated teaching methods that prioritizes rote learning(Chandra, 2024; Mahapatra & Behera, 2026).

#### *ii) Gaps in Early literacy Education*

The lake of engaging storytelling and relevant texts in early literacy education can limit students learning experiences. Furthermore, limited access to literacy materials can hinder their positive attitude towards reading, writing and numeracy skills development (Naeem, 2024). Children who fall behind in early education often struggle to keep up in later life. It is essential to address the remaining challenges, specifically in oral reading fluency and comprehension skills to lay a solid foundation for future learning(Mahapatra & Behera, 2026).

#### *iii) Limited Emphasis on Working Memory of Children*

Most of the preschool teachers do not asses working memory abilities of children. It is vital for them to understand that weak working memory skills can negatively impact early literacy and numeracy development of children. Further, children with working memory impairments often struggle in classroom activities(Mahapatra & Behera, 2026).

#### *iv) Shortage of Trained Teachers and Resources*

A key challenge in achieving FLN is shortage of dedicated trained teachers. Because, there is lake of sufficient teacher education and training, requiring revision of the teacher education curriculum and continuous professional development. There is language gap between the teachers and students. Therefore, every institution should use multilingual approach(Gandhi, 2021).

#### *v) Limited Parental Participation*

Limited Parental involvement is a significant challenge in achieving FLN skills in children. Factors that affecting this issue include disadvantaged socio-economic status, shortage of resources, lake of awareness, limited educational background of parents and large family size etc. These obstacles hamper parent's ability to engage with their child's education.(Kanujiya & Jaiswal, 2025; I. Kumar, 2022; Mahapatra & Behera, 2026)

#### *vi) Lake of FLN Based Pedagogical Approaches*

The lake of learner centered based pedagogical approaches is another obstacle in ensuring universal attainment of FLN skills. Current activities used in the early childhood education settings are not suitable to equity and inclusive pedagogy. The learning materials and methods employed by teachers are not designed as per the developmental needs of children. Moreover, NEP 2020 remarked that lake of efficiency of teachers in play-based pedagogy is a key barrier in achieving FLN.

## **VI. CONCLUSION:**

In conclusion, Foundational Literacy and Numeracy (FLN) skills are rooted in the early childhood education and essential for effective Early Childhood Care and Education (ECCE). Various studies and government publications indicate that FLN builds the basic skills needed for academic achievement, practical life skills and holistic development in child. A strong FLN ability helps children become confident learners, critical thinkers and active participants in society. Therefore, government took different initiatives to improving the quality of early education. Despite of several initiative there are significant challenges including lake of qualified teachers, lake of parental involvement, limited emphasis on working memory of child and child centered resources that need to addressed for enhancing early literacy and numeracy. At the end, the collective efforts from the stakeholders are necessary to achieve the goal of FLN and advancing in the field of ECCE.

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