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Challenges in Implementing the FLN Mission in Mathematics at the Elementary Level: A Study on Teacher Preparedness, Training, Workload, and Infrastructure

Kumar Samarjeet Mahanta

Block Institute of Teacher Education, Rangia, Kamrup, Assam, India

Email: samarjit.mahanta@gmail.com

ABSTRACT

The Foundational Literacy and Numeracy (FLN) Mission, introduced under the National Education Policy (NEP) 2020, aims to ensure that all children acquire basic literacy and numeracy skills by the end of Grade 3. Assam's adaptation of this initiative—NIPUN Axom—targets localized implementation across the state. This study investigates the major challenges encountered in implementing the FLN Mission in Mathematics at the elementary level in Kamrup district, Assam, focusing on teacher preparedness, training adequacy, workload, and infrastructural limitations. Data were collected from 62 teachers across 20 government lower primary schools using questionnaires, interviews, and basic observations. Results indicate that while 75.8% of teachers had received FLN training, 83% of them had attended only a single session, and just 53% reported confidence in applying play-based and activity-based pedagogies. Moreover, only 38% of teachers used numeracy kits regularly. Infrastructural constraints, such as the provision of only one numeracy kit per school and the absence of digital learning tools, further hampered effective teaching.

Keywords: *FLN Mission, NEP 2020, Mathematics, Teacher Training, Workload, Assam, Kamrup District, Foundational Literacy and Numeracy, NIPUN Axom.*

1. Introduction

The National Education Policy (NEP) 2020 identifies Foundational Literacy and Numeracy (FLN) as a "non-negotiable prerequisite for all further learning." To meet this goal, the Government of India launched the NIPUN Bharat Mission, aiming for all children to achieve basic literacy and numeracy skills by the end of Grade 3. In Assam, this vision is being implemented through NIPUN Axom, a state-specific initiative focused on localized strategies and resource support.

Despite these efforts, the implementation of FLN in Mathematics—particularly in Kamrup district—faces notable challenges. With its mix of urban and rural schools, Kamrup serves as a representative setting

to examine key barriers across the state. These challenges centre around four critical areas: teacher preparedness, training quality, administrative workload, and infrastructure gaps. While 75.8% of surveyed teachers had received FLN training, 83% attended only a single session, indicating limited opportunities for continuous learning. Moreover, just 53% of trained teachers felt confident using play-based, activity-driven methods essential to FLN pedagogy. The issue is further compounded by infrastructure problems—only one numeracy kit is provided per school, with 35% of schools reporting kits as damaged or incomplete. Excessive administrative duties, such as data entry and government tasks, also reduce the time available for instructional planning and remedial teaching.

2. Objectives of the Study

1. To assess the level of teacher preparedness in implementing FLN in mathematics in Kamrup district.
2. To analyse the training received by teachers and its effectiveness.
3. To identify challenges related to workload and Infrastructure that hinder the implementation of FLN.

3. Methodology

The present study adopted a descriptive research design, combining both qualitative and quantitative approaches to explore the challenges in implementing the FLN Mission in Mathematics at the elementary level. The study focused specifically on the aspects of teacher preparedness, training, workload, and infrastructure in the context of Kamrup district, Assam. Data were collected through direct interactions with teachers using structured tools and through on-site classroom observations.

3.1. Sample and sampling technique

The study was conducted across 20 government lower primary schools located in both rural and urban areas of Kamrup district in Assam. The sample comprised a total of 62 teachers, covering all the teachers teaching at the primary level (Grades I to V) in these 20 schools. A random sampling technique was used to ensure inclusion of schools from diverse settings—rural, semi-urban, and urban—thus providing a balanced representation of the district's school infrastructure and teaching conditions.

3.2 Tools used

To collect relevant data, the following tools were employed:

- Questionnaire: A structured questionnaire was administered to teachers to collect quantitative data on their training background, classroom practices, and use of FLN materials.
- Semi-structured Interviews: Conducted with selected teachers to gather qualitative insights into their experiences, challenges, and perceptions regarding FLN implementation in mathematics.
- Observation Checklist: Used during classroom visits to observe the actual use of FLN numeracy kits, engagement in play-based learning, and classroom management.

3.3 Validity and Reliability

To ensure validity, the tools used in this study—questionnaire, semi-structured interviews, and observation checklist—were carefully designed in alignment with the objectives of the FLN Mission and reviewed by experts in elementary education and educational research. The questionnaire items were based

on NEP 2020 and NIPUN Bharat guidelines, ensuring content validity. Pilot testing was conducted in two nearby schools (not included in the final sample) to verify clarity and relevance of the items.

Reliability was ensured through internal consistency checks. Moreover, datas were cross-verified from interviews, classroom observations, and questionnaire responses to enhance the robustness and trustworthiness of the findings.

4. Results and discussion

4.1 Teacher preparedness

Table 1: Trained vs untrained teachers in primary schools in FLN

Sl	Number of trained teachers in FLN	Number of untrained teachers
1	47(75.8%)	15(24.19%)
Total: 62(100%)		

Table 2: Number of trainings received by the teachers

Sl	Single training	Multiple training
1	39(83%)	8(17%)
Total: 47(100%)		

Table 3: Confidence level of teacher employing play-based and activity based approaches to teach numeracy

Sl	Highly confident	Moderate	Low
1	25(53%)	10(21%)	12(26%)
Total: 47(100%)			

The study revealed that 75.8% of teachers reported having undergone FLN training; however, among them, a significant 83% had received only one round of training, indicating limited exposure to continuous professional development. Despite attending the training, only 53% of the trained teachers acknowledged that they are highly confident in applying play-based and activity-based approaches to teach mathematics effectively in the classroom. A notable number of teachers expressed discomfort and lack of confidence in adopting play-based learning methods for teaching numeracy. Most of them were more comfortable with traditional, lecture-based instruction and had minimal experience with activity-based pedagogy, which is central to the FLN framework. Furthermore, the study found that teachers had limited exposure to innovative assessment tools designed to measure learning outcomes in line with FLN goals, resulting in a reliance on outdated evaluation methods that do not support early grade learning effectively.

4.2 Training effectiveness

Table 4: Frequency of FLN kit used

Sl	Regularly	Occasionally	Never
1	24(38%)	28(45%)	10(17%)
Total: 62(100%)			

The study found that the overall effectiveness of FLN training programs in Kamrup district was limited. Most trainings were short in duration, typically lasting only 2–3 days, and were often too general in nature, lacking the hands-on practice necessary for teachers to confidently implement the techniques in real classroom settings. One of the major gaps identified was that the training sessions did not provide clear and detailed instructions on the proper use of the various components of the numeracy kit, leaving many teachers uncertain about how to integrate these tools effectively into their teaching practices.

Additionally, many teachers were unaware of the specific learning outcomes outlined under the FLN framework for mathematics, indicating a lack of alignment between training content and expected classroom goals. Only 38% of teachers reported using the numeracy kits regularly in their classrooms, while others either used them incorrectly or not at all. This inconsistency was further compounded by the fact that there is no proper monitoring system in place to track or support the regular and effective use of these kits. As a result, the utilization of the kits remains sporadic and often superficial. The absence of sustained monitoring and follow-up support contributes to the overall ineffectiveness of the training programs and weakens the intended impact of the FLN Mission in mathematics.

4.3 Workload challenges

Teachers in the Kamrup district reported being heavily burdened with various non-academic responsibilities such as survey duties, election work, Booth Level Officer (BLO) tasks, data entry for UDISE+, and managing APPAR IDs. These additional duties significantly reduced the time available for instructional planning and focused classroom engagement. In many rural schools, a pupil-teacher ratio exceeding 40:1 further complicated the situation, making it difficult for teachers to provide individual attention or effectively implement play-based numeracy activities and utilize the FLN numeracy kits. As a result, teachers often struggled to allocate adequate time for lesson planning, tracking foundational learning progress, and conducting remedial classes.

4.4 Infrastructure and material issues

Table 5: Condition of FLN numeracy kit in schools

Sl	Good	Partially damaged	Misplaced
1	13(65%)	5(25%)	2(10%)
Total: 20 (100%)			

Infrastructure and material-related challenges have significantly affected the implementation of the FLN Mission in Kamrup district. Around 35% of schools reported that the FLN numeracy kits were either incomplete, broken, or had not been replenished since initial distribution,. In most cases, only one kit was provided per school, limiting its usability across multiple classes. Additionally, the lack of digital equipment such as smart boards and Interactive Flat Panels (IFPs) in rural schools has hindered the effective use of e-content and digital learning resources. Compounding these issues, due to shortage of teacher, many schools accommodate multiple grade levels simultaneously in single room, making it difficult for teachers to deliver focused and grade-appropriate FLN instruction in mathematics.

5. Challenges Identified

The findings of the study highlight several critical challenges that hinder the effective implementation of the FLN Mission in Mathematics, which can be categorized under the following key areas:

Table 6: Challenges and key issues

Sl	Challenges area	Key Issues
1	Teacher Training	Not all teachers received FLN training, inadequate training duration, lack of subject-specific focus (especially in mathematics), absence of multiple or follow-up training sessions.
2	Preparedness	Limited understanding of FLN pedagogy, lack of confidence in conducting math activities as recommended by NIPUN Axom, insufficient clarity on the effective use of FLN worksheets.
3	Workload	Excessive administrative tasks, shortage of teachers due to vacant positions, lack of time for lesson planning.
4	Infrastructure and Resources	Damaged or misplaced FLN numeracy kits, insufficient learning materials, only one kit provided per school, different grade levels share the same classroom space
5	Monitoring	Focus on reporting rather than support and mentoring

6. Conclusion

The implementation of the FLN Mission in Mathematics at the elementary level in Kamrup district, Assam—under the NIPUN Axom initiative—presents a complex set of challenges rooted in gaps in teacher training, preparedness, workload, and infrastructure. While the majority of teachers have received some form of training, the lack of subject-specific depth, limited follow-up sessions, and inadequate hands-on practice have diminished the impact of these efforts. Many teachers continue to feel unprepared to adopt activity-based and play-based approaches, which are central to the FLN framework.

Excessive administrative responsibilities and teacher shortages further strain their capacity to deliver focused and effective instruction. Infrastructure issues—such as incomplete numeracy kits, lack of digital resources like smart classrooms, and multiple class siting in single classrooms—also limit the practical application of FLN strategies. Moreover, the absence of a robust mentoring system has led to irregular use of FLN tools and ineffective classroom implementation.

Addressing these challenges requires urgent action in four key areas: implementing comprehensive and subject-specific teacher training with regular follow-up sessions, enhancing infrastructure support including adequate learning materials, rationalizing administrative workloads to allow more focus on teaching, and transitioning from reporting-focused monitoring to supportive mentoring systems. Such systemic reforms are essential for realizing the goals of the NIPUN Axom Mission and ensuring successful foundational numeracy learning for all children in the early grades.

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