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## **Foundational Literacy and Numeracy in India - A Persistent Challenge**

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## **Foundational Literacy and Numeracy in India - A Persistent Challenge**

***Abstract:** This paper analyses FLN outcomes in Kerala and Uttar Pradesh showcasing Kerala's higher FLN achievements—94% reading fluency in Grade 3 compared to UP's 72% and demonstrates that education plays a critical role in socio-economic development. The more investments made in early learning, teacher education, and female literacy in Kerala have boosted FLN and hence the socio-economic development of the state. Conversely, Uttar Pradesh has been a laggard when it comes to investing in education, which has restrained opportunities in skill building for a large part of the workforce resulting in poverty and social marginalization. By employing the Human Capital Theory, the Agenda Setting Theory, and the Narrative Policy Framework, this paper argues that policy success is not only the quality of policy formulation but also the consistent implementation and community involvement.*

### **Introduction**

India, the world's largest democracy and one of its fastest-growing economies, faces a critical challenge in its education sector that threatens to undermine its human capital development and, by extension, its economic potential. This challenge lies in ensuring Foundational Literacy and Numeracy (FLN) among its school-age population, particularly in rural areas (IFC, 2024). Despite significant policy efforts and investments in primary education over the past two decades, a substantial portion of Indian children struggle with basic reading and arithmetic skills, creating a domino effect that impacts their future learning and economic opportunities (Pandey, 2023).

Foundational Literacy and Numeracy refers to the ability to read with comprehension and perform basic mathematical operations (Prajapati, 2024). These skills are often referred to as the foundations of learning that are essential to the child's academic achievement and

all-round learning process (Ministry of Education, 2022). Hence, as the world shifts to become more knowledge-intensive, there is a need to have a workforce that has good roots to enhance innovation, productivity, and growth (World Bank, 2020).

The fundamental right to free education, as spelled by the Indian Constitution failed to include the provision of free and compulsory education to children up to the age of six within its ambit as well as the Government of India failed to recognize the provision of universal elementary education as necessary for the economic and social progress of the country Ministry of Education (2021b). This was done in a bid to achieve the expansion goal of Education For All, where the SSA was launched in 2001. The SSA aimed to provide free and compulsory education to all children aged 6-14 years, with specific objectives including:

1. All children in school by 2003
2. All children completing five years of primary schooling by 2007
3. All children completing eight years of elementary schooling by 2010
4. Focus on elementary education of satisfactory quality
5. Bridging all gender and social category gaps at the primary stage by 2007 and at the elementary education level by 2010
6. Universal retention by 2010 (ASER, 2005)

To these challenging objectives was added the RTE (Right to Education) Act of 2009, which declared free and compulsory education as a fundamental right for every child of 6-14 years of age. However, while much has been gained in school enrolment through the set policy initiatives, the quality of learning outcomes has been an area of concern. This is where the Annual Status of Education Report, a citizen-led household survey that first started in 2005 to measure learning outcomes in rural India, brings out the chasm between policy processes and ground realities in a rather alarming manner (ASER, 2005).

## The Scale of the Problem

The ASER findings portray a grim depiction of the condition of basic education in rural India. When ASER was first carried out in 2005, it was discovered that 40% of students in rural regions enrolled in government schools in Std V were unable to read texts at the Std II level (ASER, 2005). In 2023, things have somewhat improved, but they are still far from ideal as per the ASER 2023 survey, which focused on youth aged 14-18, revealed that:

1. About 25% of youth in this age group still cannot read a Std II level text fluently in their regional language.
2. More than half struggle with division (3-digit by 1-digit) problems, a skill usually expected in Std III/IV.
3. Only 57.3% can read sentences in English, and of those, only 73.5% can tell their meanings (ASER, 2024).

These figures are particularly alarming considering that the youth have spent 8-10 years in the formal school system. The persistence of this learning crisis over nearly two decades suggests deep-rooted systemic issues that mere enrolment drives and infrastructure development have been unable to address.

The implications of this learning crisis extend far beyond the classroom. Poor foundational skills severely limit an individual's ability to acquire higher-order skills, participate effectively in the labour market, and contribute to economic growth. A World Bank study estimates that low learning levels in primary school can lead to a 9% loss in an individual's future earnings (World Bank, 2022). At a macro level, this translates into significant losses in human capital and economic potential for the nation.

## Identification of Gaps

The main aim of the study is to address the persistent gap between the intended outcomes of policy and the actual state of Foundational Literacy and Numeracy in India. Many Indian children still do not receive the basic education needed for further education and economic participation, despite nearly two decades of targeted government initiatives and increasing enrolment rates. The disparity suggests an important shortcoming in the educational system's ability to deliver high-quality education, particularly to underprivileged rural communities, and to integrate early childhood care and education with primary schooling. This problem is multifaceted and influenced by various factors, including:

1. **Curriculum and Pedagogy:** There is often a mismatch between the pace of the curriculum and the actual learning levels of students, leading to a situation where many children are left behind as the syllabus progresses (Pritchett & Beatty, 2015).
2. **Quality of Teaching:** Issues such as teacher absenteeism, lack of specialized training in teaching foundational skills, and inadequate pupil-teacher ratios affect the quality of instruction (Banerjee & Duflo, 2006).
3. **Language and Medium of Instruction:** The mismatch between home language and school language, especially in early grades, can impede the development of foundational skills (Jhingran, 2019).
4. **Infrastructure and Resources:** While there have been improvements, many schools still lack adequate facilities and learning materials, particularly in rural areas (ASER, 2024).
5. **Assessment and Monitoring:** Weak systems for tracking and improving learning outcomes at the school and district levels hinder targeted interventions (Muralidharan et al., 2017).

6. Socioeconomic Factors: Poverty, child labour, and low parental literacy can significantly impact a child's ability to attend school regularly and learn effectively (Drèze & Kingdon, 2001)

Understanding these mechanisms and their interplay is crucial for developing effective interventions to improve FLN outcomes.

### **Methodology and Analysis**

Considering the previously identified problem, this study will focus on Foundational Literacy and Numeracy (FLN) in India using the following multifaceted method. To establish a comprehensive picture of the difficulties faced in the FLN objectives, a combination of theoretical frameworks and empirical analysis will be employed in the approach.

Case Study Comparison: The main method to be used in this study is the case study method which will be comparative based on two Indian states, one with high FLN performance and the other with low performance. This approach will enable a nuanced evaluation of FLN outcomes and learn which factors—such as teachers, curricula, and socio-economic conditions—are conducive to the success or failure of FLN policies. Furthermore, to identify the extent to which narratives have influenced the perception of and the policies on FLN, the Narrative Policy Framework will also be applied. This will involve identifying the specific constructions of FLN that different stakeholders – policymakers, non-governmental organisations, and the media – are presenting to the public.

The analysis will attempt to draw the difference of the contextual factor that must be taken into consideration later on when developing and proffering FLN interventions, as a result of comparing the given states with varying outcomes. Consequently, Kerala's proactive policies and high FLN outcomes contrasting sharply with UP's systemic challenges, offer a lens to explore how policy and socio-economic factors influence education (NH Web Desk,

2019). The case studies will use data collected from the Annual Status of Education Report (ASER), National Achievement Survey, and other reliable sources that will make comparisons comprehensive and informed.

### **Theoretical Framework**

The analysis will be based on several theoretical frameworks that provide complementary perspectives on the FLN challenge:

1. **Human Capital Theory:** This foundational theory will underscore the importance of education (especially at the primary level) and skill development as investments in future productivity and earnings (Becker, 1992). It will provide a framework for understanding the long-term economic and social benefits of improving FLN outcomes.
2. **Evolutionary Theory:** This framework will be used to trace the development of FLN policies as a gradual, adaptive process influenced by historical, social, and institutional factors (Kay, 2020). It will help to explain why certain FLN policies have persisted, how they have evolved, and what adaptations may be necessary for future success.
3. **Agenda Setting Theory:** This theory will be employed to analyse how FLN has emerged as a priority on the national policy agenda (Chaqués Bonafont et al., 2020). It will explore the factors that have contributed to the increased focus on FLN in recent years, including the role of international organizations, media coverage, and political leadership.

These theoretical frameworks will help in identifying the factors impacting the FLN's outcomes in India and categorize the chronology of FLN-based policies in India and the two mentioned states. Here, the focus is to analyse the difference in the performance of the



selected states find out the factors that determine success or failure and use the findings to prescribe appropriate strategies that can be implemented at the state and central levels of the country.

The specific objectives of this study are:

1. To study the trends of the FLN outcomes in the chosen States in the last decade with the help of ASER, NAS data, and other sources.
2. To examine and categorize the main causative factors governing FLN outcomes in these states: policies, practice in teaching, economic development, and educational facilities.
3. To assess the relevance of state-specific intervention measures, and the processes by which these may be scaled up or replicated in other jurisdictions/settings.

The outcomes of this study might therefore assist in focusing resource distribution better, fine-tuning ideas on teaching as well as enhancing policy formulation, which would assist in closing the gap between the provision of quality education for all children and the actual possibilities on the ground.

### **Comparative Analysis**

This paper provides a detailed case-based comparative study of FLN outcomes in the two India States of Kerala and Uttar Pradesh or UP for short. Both states showcase vastly different educational trajectories, on one hand, Kerala as a state has a reputation for a high educational performance, on the other hand, Uttar Pradesh as a state has problems with deep-seated issues in attaining satisfactory levels of FLN (NH Web Desk, 2019). Through both pre-reform and post-reform policy, the paper also uses Agenda Setting Theory, Narrative Policy Framework, Human Capital Theory, and Evolutionary Theory to analyse these two policy mechanisms and the factors in the socio-political and economic contexts that created

different outcomes. Based on NAS 2017 & 2021, ASER 2022 & FLS 2022, this paper presents an analysis of the performance of the two states in the context of FLN.

### 1. Comparative Analysis of FLN Outcomes

a. FLN Performance Indicators: The data of the FLS 2022 and ASER 2022 suggest that the learning gap between Kerala and Uttar Pradesh is wide (Ministry of Education, 2022a). Kerala has 94% of grade 3 students with oral reading fluency as compared to 72% in UP. For arithmetic, 77% of Kerala's Grade 3 students solved basic problems, compared to 52% in UP. The NAS 2021 deepens this deficit more as the average of the Kerala students in Class 5 is 61.8% in language while the average of students in UP is 43.2% (Ministry of Education, 2021a). These statistics highlight that Kerala has better FLN outcomes than UP is experiencing: Consistent issues.

b. Pre-Reform Policy Mechanisms: Kerala also embraced progressive education policies in its early formative years with the Kerala Education Act of 1958, the cornerstone of universalization of primary education, which emphasizes neglected and excluded groups and communities (NCERT, 2022a). Due to such kind of emphasis on social equity alongside the education of women, long-term changes were the level of literacy. On the other hand, due to socio-economic inequality, bad governance, and fluctuating political commitment the UP's pre-reform attempts were checkmated by inequalities from the educational front even though there were national programmes like SSA, etc, (NCERT, 2022b).

c. Post-Reform Policy Mechanisms: Kerala has managed to align flagship schemes of the Government of India such as NIPUN Bharat with state government's programmes like Samagra Shiksha Kerala. It emphasizes competency mapping and the professional development of teachers. Innovations in digital learning organization by the state for instance the 'First Bell,' during the outbreak enabled continuity in education (Sattva, 2023a). On the other hand, UP's post-reform policies such as Mission Prerna seem to be hampered by poor

infrastructure and teacher truancy, while enrolment campaigns like School Chalo Abhiyan (Sattva, 2023b). The implementation of biometric attendance systems has also been the same in UP.

## 2. Theoretical Framework Analysis

a. Agenda Setting Theory: As per the Agenda Setting Theory, the issues that make it to the political agenda determine the nature of policy. In Kerala, education has always been given importance by different governments, and thus low policy entropy. For a long time, this has emphasized education as a public good, engaging long-term and sustained investment in infrastructure and human capital, and positioning education at the core of policymaking (Nakamura et al., 2023). However, Uttar Pradesh has high policy entropy in which education is shaded by socio-political issues such as caste politics. Limited political stability and years of program-focused political leadership have periodically altered the focus on educational reforms and undermined policy enforcement (Evans & Hares, 2021; Nakamura et al., 2023). This variation indicates the importance of proper agenda setting and hence the achievement of the intended educational results.

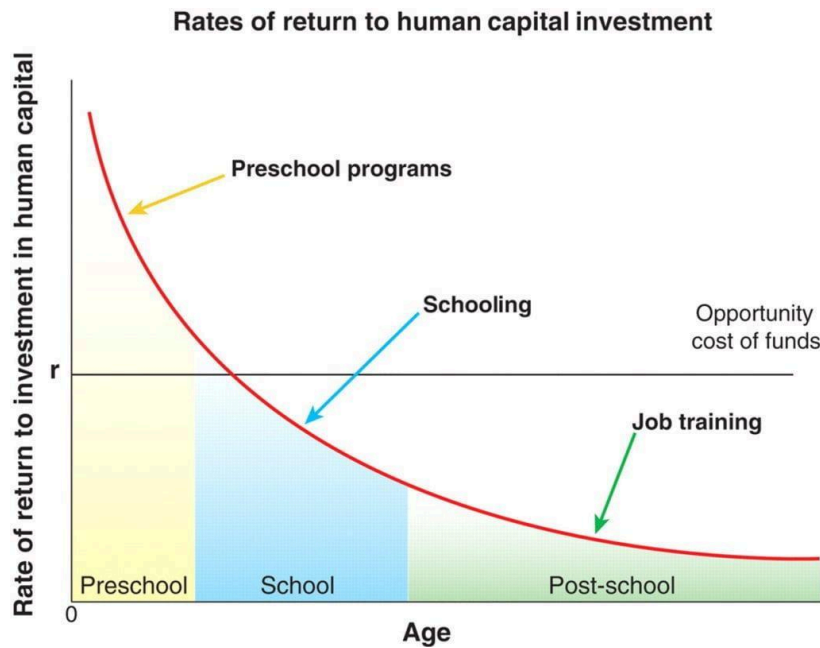
b. Narrative Policy Framework: The Narrative Policy Framework (NPF) examines how actors frame the 'story' of education policies and the public response to them (Walter & Jones, 2020). In Kerala, education is viewed as a policy consensus across all forms of government as a right and an equalizer. Administrators are essential in effective and creative solutions to implementation; the media provides success-failure duality and ensures that quality education remains at the heart of the argument (Nakamura et al., 2023).

On the other hand, the story of Uttar Pradesh is a scattered one. Education is associated with developmental politics, resulting in more often fewer efforts towards the enhancement of literacy and numeracy. A bureaucratic culture of transfers and postings for political reasons affects the drive for better quality in terms of concentration on infrastructure

and enrolments. The media in UP also paints a picture of a lack of teachers at schools, while the few available teachers are described as being absconding, inadequate infrastructure and facilities for learning besides ignoring progress in the kind of teaching support being offered to the learners (Evans and Hares, 2021; Muralidharan et al., 2017). The above comparison points to the fact that a consistent narrative in Kerala results in better policy outcomes as compared with the diverse narratives in UP.

c. Human Capital Theory: Human Capital Theory emphasizes the role of early investment in education in fostering long-term economic growth. Kerala's continuous investment in early childhood education through Anganwadi centres, teacher training, and vocational education demonstrates a commitment to building human capital (NCERT, 2022a). The state's strong focus on improving female literacy has resulted in improved health outcomes, lower fertility rates, and better labour market participation (Ministry of Education, 2022b). This holistic investment in human capital has contributed to Kerala's economic development and social equity (Madore et al., 2018).

Uttar Pradesh has not been efficient in exploiting the educational system for human capital development. Lack of investment in teacher development in addition to a lack of early childhood education facilities has affected UP's capacity to develop a skilled workforce (MoSPI, 2023). Consequently, there is a negative relationship between the state's educational performance and low labour market immersion, which continues to foster poverty and social exclusion (NITI Aayog, 2022; Saxena, 2015).



The Heckman Curve, grounded in Human Capital Theory, posits that early investments in human capital yield higher returns compared to those made later in life (Rea & Burton, 2019).

d. Evolutionary Theory Framework: The Evolutionary Theory Framework predicts that educational policies develop over time due to socio-political and economic factors. Education in Kerala emerged through the social awakening process which considered education as a means of social justice. This has therefore led to constant policy improvement in the state to address new challenges such as English proficiency and digital education. The education system of Uttar Pradesh has not progressed in the same manner as Maharashtra has, and instead of proactively providing for local needs, has only responded to central dictates. The continuation of memorization and failure to innovate has hampered progress in the basic education learning results specifically FLN (Evans and Hares, 2021).

e. Causal Analysis (Beach, 2020)

i. Processes vs. Outcomes: Education decentralisation, with considerable community participation, has ensured high FLN results in Kerala. School management is not the exclusive preserve of state and federal authorities but involves

local actors to support long-term stability. However, UP has a centralized system and weak governance along with infrastructural backwardness, including a low literacy rate, especially in rural areas (NCERT, 2022a and Sattva, 2023a).

ii. Causal Heterogeneity: The same policies such as SSA and RTE have had differential outcomes in Uttar Pradesh / The mid-day meal scheme has boosted enrolment in some districts but not increased learning achievement in all the districts, this is known as multifinality. On the other hand, Kerala shows equifinality, where all strategies like community participation, teacher training, and technology use always improve FLN across the state (NCERT, 2022b; ASER Centre, 2022).

Kerala's equifinality, with multiple strategies like teacher training and technology integration, consistently improves FLN. In contrast, UP's multifinality, such as the mid-day meal scheme's uneven outcomes, highlights systemic inefficiencies (NCERT, 2022b).

The comparative analysis of FLN in Kerala and Uttar Pradesh clearly indicates that there is a need for a comprehensive, historical socio-political, and economic factors approach. Kerala's higher FLN has benefited from a political consensus and extensive community mobilisation, whereas Uttar Pradesh's problems are caused by weak governance, socio-economic imbalances, and a lack of organisational coordination. Theoretical frameworks show that enhancing FLN is a process that goes beyond policy formulation and stakeholders find that policies must be properly enforced, and communities have to play an active role in such processes.

## **Discussion**

The comparison of FLN outcomes in two States, Kerala and Uttar Pradesh illustrates the role of education in the promotion of socio-economic development. It is for this reason

that increasing FLN's importance in Kerala's state policy has helped in achieving better economic results in addition to social order and general health. Kerala has implemented a strong focus on early childcare and community involvement while its labour force is well educated, particularly in early childhood development, and its GSDP per capita is over twice that of Uttar Pradesh (Government of Kerala, 2021). This is in conformity with the Human Capital Theory asserting that returns of education investments in the long run (World Bank, 2022). Better literacy of 96.2% also helps in the efficacy of social order while better health signs like TFR of 1.7 and IMR 10 per 100 live births as per the Ministry also assist in the same way (MoHFW, 2022).

On the other hand, a poor FLN as evidenced by the 69.7% literacy rate of Uttar Pradesh has resulted in the state's growth rate almost remaining fixed where most of the state's human capital is trapped in sectors of low technology (MoSPI, 2023). ASER & FLS both show that more than 70% of level 5 students from Kerala are at least at level 2 in reading; in UP, only 44.1% are (ASER, 2024). Several systematic issues which affect UP have affected the implementation of the NIPUN Bharat such as poor teacher training, and poor physical facilities. During the implementation of the NIPUN Bharat, UP has left out infrastructural weak links while Kerala has integrated systems (CSF, 2021).

Although various research indicates that infrastructural deficiencies play a role in poor economic growth in UP (Saxena, 2015), only decisive steps towards the improvement of FLN are instrumental in achieving sustainable socio-economic development. Based on the analysis of Sattva Consulting, it is observed that Kerala has effectively implemented ICT integration in education while UP was seen struggling to implement issues to do with infrastructures and teacher training as pointed out by Kapoor et al., (2023). That is why the strong FLN outcomes contribute to the formation not only of the economy but also to the social ladder rise, as the experience of the Kerala region indicates. This is supported by the

World Bank (2022) which acknowledges that increasing the children and youths' basic skills will increase earnings by 9% yearly. Enhancing FLN is thus not just a need for the country and its policies of education but an aspect and a crucial stepping stone for social economic growth.

## **Recommendations**

Considering the analysis of the shortcomings of foundational literacy and numeracy based on the findings and frameworks mentioned above, the following recommendations focus on systemic changes, better practices, and improved learning achievement to combat learning poverty in India.

1. **Prioritising FLN in National and State Curriculum Framework:** Based on the findings of the study, Central and State Governments should ensure that FLN is a component of curriculum frameworks and that interventions should be targeted at disadvantaged groups. In LMICs, 53% of children experience learning poverty, and 80% in Sub-Saharan Africa (Evans and Hares, 2021). Available literature reveals that structural policies like the NIPUN Bharat framework lead to positive change in literacy levels whenever resources are properly deployed (Evans & Hares, 2021).
2. **Strengthening Teacher Training and Support:** Teacher quality is necessary for enhancing FLN results, although less than 55% of pedagogy lecturers in Low-Middle Income Countries (LMICs) are well-trained (Evans & Hares, 2021). India should invest in Continuous Professional Development CPD related to structured pedagogy which has produced positive results in countries like Kenya and Uganda. Teacher training cannot exclude strategies for implementing multilingual education for equal schooling (Nakamura et al., 2023).



3. **Leveraging Technology to Expand FLN Resources:** Technology helps overcome shortages in resource-scarce localities for a variety of educational needs. Since only 75.5% of schools have internet connections, the expansion of digital learning tools will prevent learning loss and is especially important for rural areas (UNICEF, 2023). DIKSHA for example has provided a low-cost digital solution for delivering scalable content and similar ventures ought to be supported by both donors and governments (Evans and Hares, 2021).

## **Conclusion**

This comparative study of FLN in two states of India – Kerala and Uttar Pradesh raises a question about policy success and how governance, consistency, and socio-political factors play a crucial role in policy success. These include early childhood education, training of teachers, and community participation and have placed Kerala in a strategic position of producing good FLN results. Thus, the state's long-term political commitment to integrating national policies such as the SSA with local initiatives supported by the long-term political commitment, depicts a well-coordinated system traceable to the Human Capital Theory.

While the nationwide reforms have demonstrated some effectiveness of national policies, Uttar Pradesh still lacks infrastructure. It has unstable governance and high policy entropy that impeded the implementation of national reforms. Despite increasing enrolment, policies put in practice for better learning environments and socioeconomic factors have negative impacts. The Agenda Setting Theory and the Narrative Policy Framework explain how scattered political will and bobbing focal points have caused UP's incremental advancement.

The experience of Kerala proves that the persistence of the approach, regional adjustments, and stable management are critical for education innovation. It is suggested that there are important lessons that Uttar Pradesh could learn from this model at a time when it is

seeking to enhance infrastructure, governance, and teacher quality to translate its policies into effective use of FLN. Moreover, concerning India to fill the FLN gaps, therefore it is crucial to rely on the approach that combines the structural changes needed and the targeted local actions. These results stress the fact that the enhancement of FLN is not a question of policy application but of political commitment and community participation coupled with the understanding of how those policies can be applied in the local context.

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