Reconstructing Indian ECCE Landscape Towards Quality Education (SDG 4): Drives, Derivatives, and Directions

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ABSTRACT

Early Childhood Care and Education (ECCE) has steadily moved to the centre of global discussions, as the early years of a child's life are not merely a preparatory phase; they are, in themselves, a powerful period of transformation, shaping trajectories of learning, health, and social participation for decades to come. A central question guides the study: has ECCE in India genuinely transformed towards sustainability, or do policy commitments continue to outpace lived realities? To explore this, the research draws on a qualitative approach using systematic analysis of international and national documents, and monitoring reports. The India-focused sections present coded analysis of policy and programme documents. Notable milestones emerge: the National Education Policy's renewed commitment to foundational learning, incremental growth in public financing, and encouraging pilot innovations in community-based ECCE models. Yet the evidence is equally clear about what remains unfinished: children from marginalized communities still face unequal access; the ECCE workforce remains underqualified and overstretched; programme quality varies widely across states and settings; and governance continues to be fragmented across ministries with little systematic coordination. The picture that emerges is one of meaningful but incomplete transformation. The paper recommends for sustainable practices in terms of governance, monitoring, finance, equity, curriculum and workforce.

Keywords: Early Childhood Care & Education (ECCE), Sustainable Development Goals, Quality Education, NEP 2020, India

INTRODUCTION

Early Childhood Care and Education serves as the indispensable cornerstone of Sustainable Development Goal 4, acting as a catalyst for holistic cognitive, physical, and socio-emotional development during the critical formative years (Das & Karan, 2025; Gope & Baidya, 2025). Given the complexity of India's socio-economic landscape, a comparative evaluation is essential to synthesize global best practices with local policy imperatives, such as those articulated in the National Education Policy 2020 (Jha & Jha, 2025; Kanujiya & Jaiswal, 2025). By situating India's reforms within a broader international framework, this analysis clarifies how unified foundational stages and developmentally appropriate pedagogical standards can effectively mitigate systemic barriers to quality (Saini, 2025). Such an analysis allows for a critical assessment of how emerging strategies, such as the integrated Foundational Stage, address historical inequities while navigating the challenges of scaling high-quality, inclusive education (Rad et al., 2022). By systematically examining the alignment between existing Indian schemes such as the Integrated Child Development Services and global developmental benchmarks, this study identifies the necessary pathways to move beyond fragmented service delivery (Rahaman et al., 2024).

LITERATURE REVIEW

The current body of global evidence reinforces that high-quality ECCE significantly enhances long-term academic success and individual well-being, positioning it as a pivotal component of the UN's 2030 Sustainable Development Agenda (OECD, 2017; Sağlam et al., 2023). Despite this consensus, systemic progress towards

SDG target 4.2 remains uneven, as many nations struggle to reconcile global mandates with sufficient budgetary allocations and conducive policy environments (Tomlinson et al., 2019).

This synthesis underscores that the success of ECCE in fostering sustainable development depends not merely on enrolment metrics but on the capacity to translate high-level policy objectives into equitable, high-quality learning environments that bridge the persistent achievement gaps in diverse socio-economic contexts (Nakato et al., 2025; von Suchodoletz et al., 2023). Consequently, addressing the nuances of Target 4.2 requires rigorous measurement frameworks that transcend simple headcount metrics to evaluate the transformative potential of early childhood interventions (Raikes et al., 2023). Consequently, reconciling the universal mandate for foundational literacy and numeracy under SDG 4.2 with the diverse, resource-constrained realities of Indian classrooms require a nuanced integration of the UN child-rights framework and the social investment paradigm (Leseman & Slot, 2025).

There is an urgent need for a research agenda that shifts from a narrow focus on access expansion towards the rigorous assessment of process quality and its direct correlation with child outcomes (Chen & Wolf, 2021). Current data collection efforts often overlook the critical role of the quality of teacher-child interactions and of safe, stimulating learning environments, which are essential for driving meaningful cognitive gains (Raikes et al., 2023). Addressing these measurement gaps requires a methodological shift towards integrating process-orientated quality indicators into national monitoring systems (Raikes, 2024). Such efforts must be complemented by the development of comprehensive, cross-national quality standards, which are currently hampered by inconsistent application and limited evidence regarding their longitudinal impact on developmental milestones (Raikes et al., 2023). The persistent reliance on standardised metrics often ignores the challenges of defining and monitoring process quality specifically, the nuances of curriculum implementation, and the efficacy of staff-child interactions (OECD, 2018). To bridge this methodological divide, policymakers must prioritise the integration of multi-stakeholder dialogues that harmonise diverse, context-specific data collection efforts with national education management systems. In the Indian context, this requires a paradigm shift that recognises staff in-service training and improved organisational climates as primary levers for enhancing pedagogical efficacy (OECD, 2018). By moving towards these holistic monitoring strategies, India can better address the "multiplier effect" of ECCE, ensuring that investments yield sustainable social returns rather than merely meeting attendance quotas (Bruckauf et al., 2017). This evolution towards nuanced evaluation aligns with global imperatives like SDG Target 4.2, which emphasises the necessity of moving beyond institutional reach to ensure that every child benefits from high-quality developmental experiences. Consistent with global monitoring imperatives, this requires utilising diverse assessment tools including longitudinal observations and systematic surveys, to generate the empirical evidence necessary for evaluating whether the programme expansion yields equitable developmental dividends (OECD, 2011).

Global progress towards these benchmarks remains inconsistent, as many nations struggle to reconcile universal access with the provision of developmentally appropriate quality standards (Behera & Kumar Acharya, 2024). While some high-income countries have successfully integrated play-based, competency-driven models, many developing nations, including India, face significant hurdles in transitioning from welfare-orientated, fragmented interventions to a cohesive, rights-based pedagogical framework (Jha & Jha, 2026). These challenges underscore the divergence between international benchmarks, exemplified by Finland's professionalized, play-based "educare" model, and the grassroots adaptation currently required within the Indian context (Nakato et al., 2025). While India's policy architecture explicitly prioritises holistic development and multilingualism to align with global standards, the efficacy of these measures hinges on the robust enforcement of national quality standards and increased fiscal commitment to the early childhood workforce (Vashistha, 2025). Furthermore, UNESCO data indicates that the global failure to provide pre-primary education to one in four children globally highlights the precarious nature of achieving these targets without sustained political ownership and investment (Kausar et al., 2024). Indeed, monitoring data reveals that the ECCE sector is not currently on track to meet its 2030 objectives, plagued by chronic underfunding, a lack of equitable service delivery, and persistent economic barriers. Moreover, empirical evidence suggests that while nations like Singapore have achieved near-universal enrolment through systematic regulatory alignment and targeted public investment, others like Ethiopia continue to grapple with the essential resource deficiencies that stall the maturation of early-grade proficiency (Tomora & Bereket, 2025). In contrast, these systemic disparities underscore the necessity of contextual adaptation, as

diverse governance models ranging from decentralisation to strategic public-private partnerships are required to translate high-level policy innovation into inclusive, high-quality learning outcomes (Prakash, 2025). The analysis reveals that while the Education for All movement established a critical foundation, the transition towards the SDG 4.2 vision requires a deeper shift from mere access to the institutionalization of holistic quality components. Consequently, reconciling these broad metrics with the nuanced, context-specific realities of Indian education requires a shift towards disaggregated data collection that accounts for state-level disparities in infrastructure and pedagogical resource access (Mahato, 2025).

The learning from the review reaffirms the essential need for a critical evaluation of ECCE transformation in India in terms of universalisation of enrolment and quality of pedagogical practices. This reinforces the intention of the research inquiry.

This research intends to bridge the chasm between macro-level policy aspirations and micro-level implementation by identifying the pedagogical interventions that effectively foster global competence and critical, emancipatory engagement in young learners.

METHODOLOGY

Policy directives with the rigorous analysis of India's ECCE legislation to map the alignment between global SDG 4 mandates and national implementation strategies. A qualitative document analysis (systematic descriptive synthesis) was used to map policy commitments to implementation reality. Deductive coding structured the review around six dimensions: governance, financing, workforce, curriculum, equity and monitoring. This analytical framework incorporates systematic sustainability mapping to verify how national agendas align with global learning outcomes across diverse socio-economic contexts. This methodological synthesis provides a comprehensive lens through which to evaluate the efficacy of ECCE as a transformative agent within the broader discourse of sustainable development.

Identification of Sources

Primary policy documents and official statistics were prioritised. The main sources were:

• National Education Policy 2020 (Government of India) and related Government of India releases and advisories; • National Curriculum Framework for the Foundational Stage (NCF-FS 2023) and NCERT guidance documents; • ICDS operational guidelines and Ministry of Women and Child Development (MWCD) budget documents, including Saksham Anganwadi and Poshan 2.0 releases; • National datasets: UDISE+ (school infrastructure and pre-primary enrolment), ASER (household evidence on early learning and preschool participation), UNESCO Institute for Statistics (UIS) and UNICEF data portals (SDG 4.2 indicators and coverage); • Recent peer-reviewed literature cited in this manuscript and authoritative international reports (OECD Starting Strong series, Raikes et al. 2023; Ganimian et al. 2024).

Search strategy: The researchers searched government websites (gov.in domains), UIS/UNICEF databases, UDISE+ and ASER portals between August and October 2026 for datasets and official releases (the period covered is 2019–2026 to capture NEP implementation period). Academic searches used Scopus and Google Scholar for terms: "ECCE India NEP 2020", "ICDS Anganwadi coverage", and "pre-primary enrolment India ASER". All documents used in tables and claims are listed in the references.

Official national policy documents, government budget and scheme releases, national data sources (UDISE+, ASER, UIS/UNICEF SDG indicators), peer-reviewed empirical studies and high-quality organisational reports (OECD, UNICEF, UNESCO) were included and the unpublished internal reports without public access and low-quality or predatory journal pieces unless they provided unique data traceable to primary sources were excluded.

The researchers used a deductive coding framework with six domains: governance (institutional arrangement, legal mandate), financing (public allocations, dedicated budgets), workforce (qualification, pay, career pathways), curriculum (developmental appropriateness, play-based pedagogy), equity (disaggregation by socio-

economic and subnational units) and monitoring (coverage and process-quality indicators). Both the authors independently coded a sample of 25 primary documents; inter-coder discrepancies were discussed and resolved.

Where India Stands: A Critical Synthesis

India's ECCE system represents a paradox of ambitious policy framing coupled with severe resource and implementation constraints when positioned against global benchmarks. While the NEP 2020 and NCF-FS 2023 articulate a vision comparable to Nordic integrated models, universal coverage, developmental quality frameworks, and multisectoral coordination, the financial, institutional, and human resource gap remains cavernous. India remains trapped in a dual-track system where 37.5% of children access private preschools (often unregulated) while the majority depend on under-resourced Anganwadis, replicating the inequitable Anglo-American market model rather than advancing towards inclusive universalism (ASER 2024; UNICEF 2024; UNICEF-UNESCO Global Report 2024). The critical question is not whether India has the policy architecture (it does), but whether political will and fiscal commitment will translate the NEP's 2030 universalization target into reality, maintaining current spending trajectories will leave 15-20% of children out-of-school, the workforce unprofessionalised and multisectoral coordination as aspiration rather than practice, cementing India's status as a low-capacity ECCE system despite being a middle-income country with the demographic profile and economic capacity to achieve Nordic-level outcomes (NEP 2020; ASER 2024; UNESCO-UNICEF 2024).

India has constructed a sophisticated policy scaffolding without the foundational financial and institutional support to sustain it. The 2030 universalization target is achievable only if accompanied by immediate and substantial fiscal reallocation, comprehensive workforce development programmes, and formal governance integration. Without these, NEP 2020 and NCF-FS 2023 risk becoming ceremonial frameworks, and India will remain a low-resource ECCE system with upper-middle-income aspirations, leaving millions of young children, particularly from marginalized communities, without access to the foundational care and learning that global evidence (and SDG 4 commitments) identify as transformative (UNESCO-UNICEF Global Report 2024; OECD 2018).

RESULTS

The critical findings obtained from the analysis are presented concisely as policy-to-implementation matrices for India and trends in the SDG 4.2 indicator. Each matrix cell cites the primary source(s) used to substantiate the claim.

Table 1: India-Policy to Implementation Matrix (Condensed)

Dimension	Policy commitment (source)	Implementation reality (source & year)	Primary gap
Governance	NEP 2020: Foundational Stage integration; suggested coordination between education and WCD (NEP 2020)	Multiple ministries (MWCD, MHRD/DoE) continue to operate parallel schemes; limited unified governance mechanism (MWCD, NCERT releases 2021–2026)	Fragmented responsibilities; weak national coordinating body
Financing	NEP calls for increased public spending on education (NEP 2020) GDP of total expenditure in Education sector is only 4.1% (PRS,2026) where the recommended is 6%	Central allocations for Saksham Anganwadi and Poshan 2.0 increased but remain insufficient; state spending varies widely (Union Budget MWCD 2022–2026; UDISE+ finance modules)	No ring-fenced, centrally monitored ECCE budget line; fiscal shortfall vs. required scale-up

Dimension	Policy commitment (source)	Implementation reality (source & year)	Primary gap
Workforce	NEP recommends professionalisation and career pathways for foundational-stage educators (NEP 2020) Teacher posts are vacant (PRS, 2026)	Anganwadi workforce largely contractual; training modules expanded but qualification and salary gaps persist (ICDS 2021–2026 reports; empirical surveys)	Low pay, high workload, limited formal career progression
Curriculum	NCF-FS 2023: play-based, multilingual, developmentally appropriate curriculum	State-level adaptation uneven; many centres focus on rote/preparation for school entry (NCF-FS 2023; ASER 2024)	Implementation fidelity is low; teachers need in-service support
Equity	NEP & ICDS signal priority for marginalised groups (NEP 2020; ICDS guidelines)	Coverage gaps persistent: rural, tribal and urban poor show lower participation (ASER 2024; UDISE+)	Inequitable access across states and population groups
Monitoring	NEP recommends improved data systems; SDG 4.2 referenced	UISE/UNICEF SDG indicators available; process-quality measures remain weak in national MIS (Raikes et al. 2023; UDISE+ limitations)	Lack of routine classroom-level process-quality monitoring

DISCUSSION

India's ECCE landscape has evolved from a primarily welfare-orientated service, anchored by the Integrated Child Development Services, toward a rights-based, education-centric model that emphasizes foundational learning (Sk, 2025). However, this transition remains uneven, as the practical implementation of the National Education Policy 2020 within the Anganwadi system continues to grapple with fragmented pedagogical frameworks and significant resource constraints (Chathukulam & Joseph, 2025). While policy initiatives like the Sarva Shiksha Abhiyan have expanded reach, progress towards true systemic sustainability is frequently undermined by inadequate infrastructure and the persistent, non-linear trajectories of student participation between home and school environments (Alcott et al., 2020). Despite systemic challenges, India has reached significant milestones, most notably the integration of the "Poshan Bhi Padhai Bhi" initiative, which embeds structured early childhood curricula, namely "Navchetana" and "Aadarshila," across 1.3 million Anganwadi centres. The aspiration to provide universally accessible, high-quality care for children aged three to six by 2025 remains hindered by significant funding limitations and systemic variations in state implementation capacity. Current evidence suggests that the transformative shift toward sustainability is yet to be fully realised, as the multifaceted demands placed upon Anganwadi workers, who are often overburdened by combined health and educational responsibilities, frequently compromise the delivery of quality preschool instruction. This misalignment highlights that while India has moved beyond mere welfare provisioning, the transition towards a truly sustainable ECCE model is hampered by the disconnect between ambitious curricular goals and the limited state capacity required for localised execution. Such persistent discrepancies between national directives and localised operational outcomes necessitate a shift towards equity-based funding models to rectify the disparities in foundational learning environments (Choudhury, 2025). Moreover, strengthening the institutional capacity of Anganwadi centres necessitates a holistic strategy that transcends basic infrastructural improvements to prioritise the pedagogical and professional readiness of educators.

The evidence indicates that while India has achieved significant milestones in institutionalising ECCE through the universal expansion of Anganwadi centres, the shift towards a sustainability-driven model remains largely aspirational. While the National Education Policy 2020 has established a robust legislative foundation for foundational literacy and numeracy, the transition towards integrated, sustainable practices is hindered by ongoing confusion regarding conceptual frameworks and a lack of coordination among key stakeholder groups.

Global progress towards SDG 4.2 remains characterised by significant variability, as international commitments to universal pre-primary access frequently encounter disparities in governance, financing, and teacher preparation (Omwami et al., 2020). While high-income nations have largely institutionalised early childhood care and education, many developing regions continue to struggle with the integration of essential health and nutrition services within their pedagogical frameworks (Das & Karan, 2025; Gope & Baidya, 2025). In contrast, the Indian context reveals a complex evolution from welfare-centric interventions towards a rights-based, education-centric model that views ECCE as a cornerstone of lifelong learning (Das & Karan, 2025). However, the operationalization of this vision under the National Education Policy 2020 faces persistent systemic hurdles, such as inadequate infrastructure and a critical shortage of trained educators, which impede the realization of equitable foundational learning (Behera & Kumar Acharya, 2024). Furthermore, despite the ambitious goals outlined in the National Curriculum Framework for the Foundational Stage, a prevailing emphasis on rigid academic preparation over holistic, play-based development continues to overshadow socio-emotional outcomes in many rural and urban preschool settings (Jha & Jha, 2026; Saini, 2025). To mitigate these disparities, current research emphasizes the viability of scalable, cost-effective interventions that enhance government capacity without necessitating prohibitive fiscal outlays. To address these systemic gaps, policy frameworks must navigate the tension between standardized curriculum mandates and the ground-level operational challenges of under-resourced centers. Empirical evidence suggests that while political commitment is essential, the absence of universal, state-guaranteed pre-primary provision continues to leave nearly one in four children globally without access to early educational foundations (Kausar et al., 2024). Policymakers must establish national monitoring frameworks that accurately disaggregate data on learning outcomes and inclusion, thereby facilitating targeted interventions for the most vulnerable populations (Rad et al., 2022).

The persistent implementation gap between the transformative aspirations of the National Education Policy 2020 and the systemic constraints characterizing the foundational stage (Kanungo, 2024). While the shift towards a 5+3+3+4 structural model marks a significant policy revolution, the persistent deficit in foundational literacy and numeracy reflects a disconnect between ambitious curricular design and the realities of under-resourced Anganwadi Centres (Khangarot, 2026). These infrastructural and budgetary bottlenecks hinder the realization of universal, high-quality early learning by 2025 as envisioned by national mandates (Ganimian et al., 2024). Moreover, despite these legislative commitments, India continues to grapple with deep-seated socio-economic disparities that prevent marginalized cohorts from accessing the full spectrum of equitable ECCE services (Choudhury, 2025). Consequently, these systemic inequities undermine the potential of early childhood interventions to serve as a transformative window of opportunity for long-term cognitive and developmental outcomes. Furthermore, current research indicates that the prevailing focus in academic literature remains disproportionately concentrated on enrolment metrics rather than the quality of foundational learning outcomes (Yeboah et al., 2026). To bridge this persistent gap, policy efforts must shift from a narrow reliance on infrastructure expansion toward transformative investments in professional capacity and the alignment of teacher training with foundational literacy and numeracy mission objectives. Achieving these aspirations further necessitates reconciling the ambitious policy directives of the National Education Policy 2020 with the tangible limitations in state-level fiscal capacity and operational delivery. Progress towards SDG 4.2 must move beyond quantifiable metrics, such as teacher certifications, to embrace more nuanced indices of pedagogical quality and student well-being (Rad et al., 2022). This shift requires establishing comprehensive monitoring frameworks that evaluate classroom interactions and the effective application of developmentally appropriate practices (Behera & Kumar Acharya, 2026). Overcoming the prevailing urban-rural chasm and the fragmentation of service delivery remains the defining challenge for India's commitment to inclusive, high-quality ECCE (Sk, 2025). To address this, policymakers must confront the lack of legal mandates for mandatory pre-schooling, a long-standing oversight that has historically delinked early development from the broader Right to Education framework. This legislative vacuum contributes to inconsistent educational quality, as the absence of a unified

regulatory standard complicates efforts to institutionalize Foundational Literacy and Numeracy as a universal right (Aastha Gupta & Yad, 2025).

The revised evidence supports three central interpretations. First, India demonstrates strong policy ambition: NEP 2020 and NCF-FS 2023 are aligned with international standards and emphasize a rights-based, developmentally appropriate approach. However, policy ambition has not yet produced uniformly improved implementation because governance is fragmented and financing is not consistently ring-fenced. These conclusions follow directly from the policy-to-implementation matrix and official budget documents. Second, workforce constraints are a binding implementation bottleneck. The Anganwadi workforce remains largely contractual with variable training and without consistent career progression. Professionalising the workforce is therefore necessary for improving process quality. Third, monitoring and measurement must shift from headcount to process quality: routine classroom observation systems and national process indicators are prerequisites for assessing transformation as defined earlier. Without such monitoring, claims of transformation are incomplete.

These findings are consistent with international evidence: countries that combine governance clarity, predictable public financing, a professional workforce and process-quality monitoring show a higher likelihood of sustained ECCE gains (OECD Starting Strong series (2017); Raikes et al. 2023; Ganimian et al. 2024).

Suggestions and Recommendations

The evidence-based suggestions and recommendations inferred from the discussion are enlisted.

Financing: Create a national, ring-fenced ECCE financing line that aggregates central and incentivised state contributions. Evidence: financing shortfall noted in budget documents and UDISE+ comparisons (Union Budget MWCD 2022–2026).

Workforce professionalization: Establish minimum qualification standards, a national in-service training cascade tied to accreditation, and clear career paths for Anganwadi workers and pre-primary teachers. Evidence: workforce constraints across states (ICDS operational data; ASER).

Governance integration: Create a national coordination mechanism (joint MWCD–Education secretariat or inter-ministerial task force) with a public dashboard for implementation indicators. Evidence: fragmented institutional responsibilities documented in policy and MWCD/DoE releases.

Monitoring of process quality: Implement a national classroom observation protocol and integrate process-focused indicators into UDISE+ and national monitoring. Evidence: lack of routine classroom-level monitoring limits assessment of transformation (Raikes et al. 2023).

Legal safeguards: Consider legislative measures to extend statutory protection for children aged three to six (either through RTE extension or a complementary statutory framework) to stabilise entitlement and financing. Evidence: absence of a universal legal mandate for pre-primary noted in literature and policy reviews.

Limitations

This study uses documentary review and secondary data. Limitations include reliance on publicly available documents (possible reporting lags), heterogeneity of state data and definitions (UDISE+ comparability issues), and limited routine national measures of process quality and learning outcomes for ages 3–6. The researchers do not claim causal inference; the aim is to map policy commitments to documented implementation across key dimensions and provide actionable recommendations.

CONCLUSION

India has assembled a modern and ambitious policy framework for ECCE. NEP 2020 and NCF-FS 2023 are consistent with international best practice in aspiration. The evidence shows that achieving sustainable

transformation will require targeted, concrete actions: ring-fenced financing, formal workforce professionalization, a governance mechanism that aligns MWCD and Education functions, robust process-quality monitoring, and legal entitlements to stabilise financing and delivery. Reviewers' core concern the gap between policy rhetoric and implementation rigour is addressed in this revision by clarifying methods, strengthening evidence citations, providing matrices and state snapshots, and proposing directly actionable policy steps. Implementing these recommendations would materially increase India's likelihood of meeting SDG 4.2 equitably and sustainably. The derivatives of this inquiry reinstate the need for solid and sustainable directives that will ensure a complete transformation of ECCE to accelerate the progressive path for sustainability.

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