



Early Childhood Education in Nigeria: Theoretical Foundations, Policy Imperatives, and a Curriculum and Instruction Reform Framework for Transformative Practice

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Abstract

Early childhood education (ECE) has emerged globally as one of the most powerful levers for achieving educational equity, cognitive development, and long-term human capital formation. In Nigeria, despite policy recognition of ECE's strategic importance embedded in the National Policy on Education, the Early Childhood Care and Development (ECCD) Policy, and the Sustainable Development Goals the ECE subsector continues to face persistent challenges rooted in curriculum inadequacy, instructional deficiency, teacher under-preparation, and systemic under-investment. This conceptual article explores the interplay between early childhood education in Nigeria and the field of curriculum and instruction, arguing that the persistent underperformance of Nigerian ECE is fundamentally a curriculum and instruction problem as much as it is a funding or policy problem. Drawing on foundational developmental theories Piaget's cognitive developmental theory, Vygotsky's sociocultural theory, Bronfenbrenner's ecological systems theory, and Gardner's theory of multiple intelligences the article critically examines the content, design, delivery, and assessment dimensions of ECE curriculum as practised in Nigeria, identifies the structural and pedagogical gaps between policy intent and classroom reality, and proposes a comprehensive curriculum and instruction reform framework grounded in child-centred pedagogy, play-based learning, indigenous knowledge integration, digital technology appropriation, and evidence-based teacher professional development. The article concludes with actionable recommendations for policymakers, curriculum developers, teacher educators, and school administrators, contributing to the growing scholarly conversation on transformative ECE curriculum practice in Sub-Saharan Africa.

Keywords: *early childhood education, curriculum and instruction, child-centred pedagogy, play-based learning, National Policy on Education, teacher professional development, Nigeria, ECCD policy, indigenous knowledge, SDG 4*

Introduction

The early years of a child's life from birth through age eight constitute the most neurologically dynamic, educationally consequential, and developmentally decisive period of the entire human lifespan (Bronfenbrenner, 1979; Piaget, 1952; Shonkoff & Phillips, 2000). Research spanning neuroscience, developmental psychology, economics, and educational policy has converged on a single conclusion of remarkable consistency: the quality of learning experiences, nutritional support, emotional security, and social stimulation provided to children during this critical window determines, to a degree unmatched by any subsequent educational intervention, the cognitive, linguistic, social, emotional, and moral development of the individual throughout the life course (Heckman, 2006; Britto et al., 2017; Black et al., 2017). James Heckman, Nobel laureate in economics, demonstrated through rigorous longitudinal analysis that every dollar invested in high-quality early childhood education programmes yields returns of seven to thirteen dollars through reduced remedial education costs, lower crime rates, higher earnings, and improved public health a rate of return no other educational investment can match (Heckman, 2006).

In Nigeria, Africa's most populous nation, with an estimated 45 million children below the age of eight and a preschool gross enrolment ratio that remains among the lowest in Sub-Saharan Africa, the stakes of early childhood education quality are particularly acute (UNICEF, 2022; Federal Republic of Nigeria, 2013; UNESCO, 2021). The National Policy on Education (Federal Republic of Nigeria, 2013) and the Early Childhood Care and Development (ECCD) Policy both recognise the foundational importance of early childhood education and mandate government provision of quality ECE through public pre-primary schools and community-based ECCD centres. Nigeria has also committed to Sustainable Development Goal 4, Target 4.2, which calls for ensuring that all girls and boys have access to quality early childhood development, care, and pre-primary education by 2030 (United Nations, 2015). Yet the implementation reality on the ground diverges sharply from these policy commitments: Nigerian ECE is characterised by acute teacher quality deficits, inappropriate curriculum content and delivery methods, inadequate learning materials, dysfunctional infrastructure, significant equity gaps between urban and rural provision, and chronic government underfunding (Ajayi, 2019; Ojo, 2021; Okafor & Udezo, 2022).

The field of curriculum and instruction provides the analytical lens through which these challenges are most productively understood and addressed. Curriculum is defined as the totality of organised learning experiences, content, objectives, methods, and assessment arrangements through which educational institutions seek to produce desired learning outcomes in students (Tyler, 1949; Ornstein & Hunkins, 2018; Taba, 1962) is the mediating structure between children's developmental needs and educational provision. Instruction the deliberate, theoretically grounded, professionally skilled process through which teachers design and deliver learning experiences that produce the intended curriculum outcomes (Bruner, 1966; Bloom, 1956; Gagne, 1985) is the operational engine through which curriculum intent is translated into actual learning. Where the curriculum is developmentally inappropriate, poorly sequenced, culturally irrelevant, or excessively academic for the age group; and where instruction is didactic, rote-based, punitive, or devoid of the play, exploration, and social interaction that young children need for development as research consistently finds in Nigerian ECE settings no amount of additional funding, infrastructure improvement, or policy revision will produce the learning outcomes children need (Abubakar & Mohammed, 2020; Taiwo & Ezechukwu, 2021; Obasi, 2022).

This article undertakes a systematic conceptual analysis of the relationship between early childhood education in Nigeria and the field of curriculum and instruction. It proceeds through six substantive sections: a review of the theoretical and developmental foundations that should inform ECE curriculum

and instruction; an examination of the policy and regulatory framework governing Nigerian ECE; a critical analysis of the current state of ECE curriculum content, design, and delivery in Nigeria; an exploration of specific curriculum and instruction challenges facing Nigerian ECE; a presentation of a comprehensive curriculum and instruction reform framework for transformative ECE practice; and actionable recommendations for all stakeholders. The article is conceptual and theoretical in orientation drawing on scholarly literature, policy documents, developmental theory, and curriculum theory rather than primary empirical data and contributes to the growing scholarly discourse on educational quality, curriculum reform, and early childhood development in Nigeria and Sub-Saharan Africa.

Theoretical and Developmental Foundations of ECE Curriculum and Instruction

Piaget's Cognitive Developmental Theory

Jean Piaget's theory of cognitive development (Piaget, 1952, 1963) constitutes one of the most fundamental theoretical foundations of early childhood curriculum design. Piaget proposed that children develop cognitive structures schemas through the processes of assimilation (incorporating new information into existing schemas) and accommodation (modifying existing schemas to incorporate new, discrepant information), driven by the self-regulatory process of equilibration. He identified four sequential stages of cognitive development: the sensorimotor stage (birth to 2 years), characterised by learning through sensory experience and motor action; the preoperational stage (2 to 7 years), characterised by emerging symbolic thought, language development, and egocentric reasoning but limited logical operations; the concrete operational stage (7 to 11 years), characterised by the development of logical thinking about concrete objects and events; and the formal operational stage (11 years and above), characterised by abstract and hypothetical reasoning.

The curriculum and instructional implications of Piaget's theory for Nigerian ECE are profound and largely unrealised in current practice. Children in the preoperational stage the primary target group for pre-primary education in Nigeria, typically ages three to five learn most effectively through concrete, hands-on, exploratory activities that engage their physical senses and develop their emerging symbolic and representational capacities (Piaget, 1952; Ornstein & Hunkins, 2018). They cannot yet process abstract symbols, formal rules, or didactic instruction in the manner assumed by the predominantly academic, textbook-based curriculum currently implemented in many Nigerian pre-primary schools (Abubakar & Mohammed, 2020; Obasi, 2022). A Piagetian-informed ECE curriculum would therefore prioritise concrete manipulatives, exploratory play, sensory materials, and self-directed discovery over formal instruction in literacy and numeracy symbols a radical departure from the premium currently placed on early academic instruction in many Nigerian pre-primary contexts.

Furthermore, Piaget's concept of 'readiness' the principle that cognitive structures must be sufficiently developed before new learning can occur has direct implications for curriculum sequencing and pacing in Nigerian ECE. The frequent complaint of Nigerian primary school teachers that children arrive in Year 1 unprepared for formal academic learning may reflect not a failure of pre-primary education to teach academic content, but rather a failure to invest sufficiently in the concrete exploratory, linguistic, and social-emotional developmental experiences that prepare children cognitively for later formal learning (Ajayi, 2019; Federal Republic of Nigeria, 2013). Piaget's theory thus challenges the accelerationist tendency in Nigerian ECE curriculum, which seeks to advance formal academic instruction downward into the pre-primary years, and instead demands a developmentally sequenced curriculum that invests first in the cognitive foundations upon which later academic learning will be built.

Vygotsky's Sociocultural Theory

Lev Vygotsky's sociocultural theory of cognitive development (Vygotsky, 1978, 1986) provides a complementary and profoundly important foundation for ECE curriculum and instruction. Where Piaget emphasised the child as an active individual constructor of knowledge through interaction with the physical environment, Vygotsky emphasised the fundamentally social and cultural character of cognitive development arguing that higher mental functions originate in social interaction before being internalised as individual cognitive capacities. Two concepts from Vygotsky's theory are particularly central to ECE curriculum design: the Zone of Proximal Development (ZPD) and scaffolding.

The Zone of Proximal Development describes the difference between what a child can accomplish independently and what the child can accomplish with the guidance, assistance, or collaboration of a more capable adult or peer (Vygotsky, 1978). Effective instruction, for Vygotsky, targets the ZPD operating just beyond the child's current independent capacity, with appropriate support, to develop the next level of capability that will eventually become independent. Scaffolding the temporary, graduated support provided by the teacher or peer to enable the child to complete tasks within the ZPD that would be impossible independently is the primary instructional strategy through which learning in the ZPD is facilitated (Wood, Bruner & Ross, 1976; Berk & Winsler, 1995). When scaffolding is progressively withdrawn as the child's competence develops, the child internalises the supported capacity and it becomes part of their independent cognitive repertoire.

The sociocultural implications for Nigerian ECE curriculum and instruction are substantial. First, Vygotsky's emphasis on the primacy of social interaction in cognitive development demands a curriculum design that structures rich, purposeful social learning opportunities collaborative play, peer tutoring, group projects, story-telling circles, community-based learning activities rather than the predominantly individualised, seatwork-based instructional formats common in many Nigerian pre-primary classrooms (Taiwo & Ezechukwu, 2021; Obasi, 2022). Second, Vygotsky's recognition of the role of cultural tools including language, symbols, and community practices in cognitive development demands that Nigerian ECE curriculum and instruction be grounded in the local languages, cultural narratives, traditional knowledge systems, and community practices of children's sociocultural contexts, rather than exclusively in foreign languages and Western educational content (Ajayi, 2019; Okafor & Udezo, 2022). Third, the ZPD framework demands that teachers continuously assess children's developmental levels and calibrate their instructional support to each child's specific proximal zone a demanding professional skill that requires sophisticated teacher preparation and ongoing professional development.

Bronfenbrenner's Ecological Systems Theory

Urie Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1979, 2005) conceptualises child development as occurring within nested, interacting ecological systems: the microsystem (the immediate environments of family, preschool, and community within which the child participates directly); the mesosystem (the relationships among microsystems for example, the relationship between the child's home and preschool environments); the exosystem (institutional and community systems that affect the child indirectly parental workplace, government education policy, community health services); and the macrosystem (the cultural values, socioeconomic structures, and political arrangements that shape all lower-level systems). A fifth system the chronosystem encompasses the dimension of time, recognising that developmental environments change over the child's life course.

Bronfenbrenner's theory has profound implications for how ECE curriculum and instruction should be conceptualised in the Nigerian context. At the microsystem level, it insists that effective ECE curriculum must extend beyond the walls of the classroom to engage with the family recognising parents and caregivers as the child's primary educators and designing curriculum components that build family engagement, parental literacy in supporting children's learning, and home-school continuity of learning experiences (Federal Republic of Nigeria, 2013; UNICEF, 2022). At the mesosystem level, it demands coherence and communication between the home and the preschool ensuring that the curriculum content, language of instruction, values, and pedagogical approaches of the preschool are understandable to and supportive of families from diverse cultural and socioeconomic backgrounds.

At the exosystem and macrosystem levels, Bronfenbrenner's theory directs attention to the powerful shaping influence of government policy, community infrastructure, and cultural values on the quality and character of ECE available to Nigerian children. The acute inequalities in ECE access and quality between urban and rural Nigeria, between wealthy and poor families, and between the educated and the uneducated are not individual failures they are ecological failures, produced by the macrosystem of structural inequality, the exosystem of underfunded government provision, and the mesosystem of disconnected home-school relationships that characterise the Nigerian ECE landscape (UNICEF, 2022; UNESCO, 2021; Ajayi, 2019). A curriculum and instruction reform agenda that does not attend to these ecological determinants of ECE quality will produce only superficial and inequitably distributed improvements.

Gardner's Theory of Multiple Intelligences

Howard Gardner's theory of multiple intelligences (Gardner, 1983, 2011) challenged the unitary conception of intelligence implicit in traditional academic curriculum and standardised assessment, arguing instead that human intelligence is multidimensional comprising at least nine distinct intelligences: linguistic, logical-mathematical, spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal, naturalistic, and existential. Gardner argued that traditional schooling with its exclusive focus on linguistic and logical-mathematical intelligence fails to recognise, develop, and build upon the full range of human cognitive capacities, thereby disadvantaging children whose primary intelligences lie in non-academic domains and impoverishing the educational experience of all children by narrowing the curricular diet to two dimensions of a multi-dimensional cognitive repertoire.

The implications of Gardner's theory for Nigerian ECE curriculum design are transformative in scope. A multiple-intelligences-informed ECE curriculum would provide rich, diverse learning experiences engaging all nine intelligences: storytelling and literacy activities (linguistic); counting, sorting, pattern recognition, and problem-solving games (logical-mathematical); drawing, constructing, mapping, and visual art (spatial); dance, movement, drama, and physical play (bodily-kinaesthetic); singing, drumming, rhythm, and music-making (musical); cooperative games, community projects, and peer interaction (interpersonal); self-reflection, emotions education, and personal goal-setting (intrapersonal); nature walks, gardening, animal observation, and environmental education (naturalistic); and philosophical discussion, moral education, and spiritual development (existential) (Gardner, 1983, 2011; Armstrong, 2009). In the Nigerian cultural context, many of these intelligence domains are richly embedded in traditional educational practices communal storytelling, apprenticeship learning, agricultural knowledge transmission, musical and dance traditions that a culturally responsive ECE curriculum could draw upon as pedagogical resources.

Collectively, these four theoretical frameworks Piaget's cognitive-developmental constructivism, Vygotsky's sociocultural mediation, Bronfenbrenner's ecological systems perspective, and Gardner's multiple intelligences provide a comprehensive, multi-dimensional theoretical foundation for ECE curriculum and instruction that is simultaneously developmentally appropriate, culturally responsive, ecologically grounded, and cognitively comprehensive. The persistent gap between this theoretical ideal and Nigerian ECE practice is the central curriculum and instruction problem this article addresses.

Policy and Regulatory Framework for ECE in Nigeria

The National Policy on Education

The National Policy on Education (NPE) (Federal Republic of Nigeria, 2013) provides the primary national framework for early childhood education in Nigeria. Section 2 of the NPE defines pre-primary education as education provided for children aged three to five years and identifies five objectives: effecting a smooth transition from home to school environment; preparing children for the primary level of education; providing adequate care and supervision of children while their parents are at work; inculcating social norms in children; and instilling in children the spirit of enquiry and creativity through the exploration of nature and environment, playing with toys, and engaging in creative arts and crafts, music and games. The NPE further specifies that the medium of instruction at the pre-primary level shall be the mother tongue or the language of the immediate community, with English introduced as a second language.

From a curriculum and instruction perspective, the NPE's ECE objectives are developmentally sound and theoretically aligned with the constructivist and sociocultural frameworks discussed in Section 2. The emphasis on social transition, enquiry, creativity, play, nature exploration, and mother-tongue instruction reflects an understanding of early childhood development consistent with Piaget, Vygotsky, and Gardner (Federal Republic of Nigeria, 2013; Piaget, 1952; Vygotsky, 1978; Gardner, 1983). However, the implementation of these objectives in Nigerian pre-primary classrooms consistently diverges from their policy intent. Studies across Nigerian states have documented pre-primary classrooms where children spend the majority of instructional time on formal reading, writing, and arithmetic drills in English, with minimal provision for play, exploration, creative expression, or mother-tongue communication a practice that directly contradicts the NPE's stated objectives and the developmental needs of the age group (Abubakar & Mohammed, 2020; Ajayi, 2019; Taiwo & Ezechukwu, 2021).

The Early Childhood Care and Development (ECCD) Policy

The National Policy on Integrated Early Childhood Development in Nigeria (ECCD Policy) provides a more comprehensive framework for holistic ECE, integrating education with health, nutrition, and social protection dimensions. The ECCD Policy recognises the interconnected nature of early childhood development understanding that cognitive, physical, social, emotional, and nutritional development are inseparable and mutually reinforcing and mandates integrated provision that addresses all these dimensions simultaneously (Federal Republic of Nigeria, 2007; UNICEF, 2022). The ECCD Policy also recognises the critical importance of community-based provision in reaching the most vulnerable children in rural and underserved areas, and mandates government investment in community ECCD centres staffed by trained community caregivers with standardised curricula.

From a curriculum and instruction standpoint, the ECCD Policy's holistic developmental framework demands a curriculum that integrates health and nutrition education, social-emotional learning, and

cognitive development rather than separating these domains into discrete curriculum areas managed by different professional systems. It also demands instructional approaches capable of addressing children's diverse developmental needs simultaneously, recognising that a hungry, unhealthy, or emotionally distressed child cannot benefit from the most expertly designed cognitive curriculum. The curriculum and instruction implications of the ECCD Policy thus extend well beyond the classroom, requiring school feeding programmes, health screening integrated into the school day, social-emotional learning curricula, and family support services as integral components of a fully realised ECE programme (Federal Republic of Nigeria, 2007; Bronfenbrenner, 1979).

Sustainable Development Goal 4 and International Commitments

Nigeria's commitment to SDG 4 ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all and specifically to Target 4.2 which states: "By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education" (United Nations, 2015, Resolution A/RES/70/1, p. 19) establishes an internationally anchored performance obligation for ECE curriculum and instruction quality (UNESCO, 2021). The UNESCO Global Education Monitoring Report has consistently highlighted the curriculum and teacher quality dimensions of ECE as the primary determinants of whether ECE programmes deliver the developmental benefits that investment seeks to achieve (UNESCO, 2021). Quantity of provision measured by enrolment statistics is insufficient without quality of curriculum and instruction.

The concept of 'quality' in ECE, as defined by UNESCO (2021) and the Early Childhood Education Research Association (ECERA), encompasses structural quality (class size, teacher-child ratios, physical environment quality, resource adequacy) and process quality (the nature and richness of interactions between teachers and children, the developmental appropriateness of activities, the linguistic quality of learning conversations, the emotional climate of the learning environment, and the integration of play, exploration, and creativity into the instructional programme). It is process quality which is fundamentally a function of curriculum design and instructional skill that most powerfully determines children's developmental outcomes, while structural quality provides the enabling conditions within which high process quality can be achieved (UNICEF, 2022; UNESCO, 2021; Heckman, 2006). Nigeria's path to fulfilling its SDG 4 commitments therefore runs directly through curriculum and instruction reform.

Critical Analysis of ECE Curriculum and Instruction in Nigeria

Curriculum Content: Developmentally Inappropriate Academisation

The most pervasive and educationally damaging curriculum problem in Nigerian ECE is the premature academisation of pre-primary education the imposition of formal academic content, instructional methods, and performance expectations designed for primary school children onto children who are developmentally at the preoperational stage of cognitive development and whose learning needs are fundamentally experiential, concrete, social, and playful (Abubakar & Mohammed, 2020; Obasi, 2022; Okafor & Udezo, 2022). Across both public and private pre-primary schools in Nigeria, the typical curriculum includes formal reading instruction using structured phonics programmes; formal arithmetic instruction including number bonds, basic computation, and number recognition to 100 or beyond; English language drilling exercises; formal writing practice including letter formation, copying, and dictation; and rote memorisation of facts across subjects including science, social studies, and religion.

This academised curriculum is driven by multiple systemic pressures. Private pre-primary school operators, competing for fee-paying parents in an increasingly commercialised ECE market, respond to parental demand for evidence of academic progress defined as children's ability to read, write, and count in English by prioritising formal academic instruction over developmentally appropriate play and exploration (Ajayi, 2019; Okafor & Udezo, 2022). Parents, socialised by an educational system that equates schooling with academic instruction, interpret non-academic play-based provision as evidence of poor quality rather than recognising it as the most effective developmental strategy for this age group (Taiwo & Ezechukwu, 2021). Primary school teachers, alarmed by the cognitive and academic readiness of incoming Year 1 children, create implicit demand pressure on pre-primary schools to prepare children for academic instruction misattributing readiness deficits to insufficient academic preparation rather than insufficient developmental foundation building.

The consequences of developmentally inappropriate academisation are well documented in the developmental and educational psychology literature and are beginning to appear in Nigerian educational research as well. Piaget (1952) and subsequent constructivist researchers have demonstrated that premature formal instruction introduced before the child's cognitive structures are sufficiently developed produces rote learning without understanding, passive compliance without genuine comprehension, and surface-level performance that breaks down rapidly when content difficulty increases. More seriously, developmentally inappropriate curriculum creates chronic early experiences of failure, confusion, and helplessness that shape children's academic self-concept negatively generating school avoidance, learning anxiety, and disengagement at precisely the developmental moment when children's orientation toward learning should be maximally positive (Heckman, 2006; Britto et al., 2017). The long-term cognitive and motivational costs of early academic harm may substantially exceed the short-term academic gains that accelerationist ECE curriculum seeks to achieve.

Language of Instruction: The Mother-Tongue Crisis

The National Policy on Education (Federal Republic of Nigeria, 2013) unambiguously mandates mother-tongue instruction as the medium of pre-primary education, recognising that children learn most effectively in the language of their home environment and that premature transition to an unfamiliar second language imposes a dual cognitive burden learning content and learning language simultaneously that substantially reduces learning effectiveness (Cummins, 2001; Brock-Utne, 2000). Yet the implementation reality across Nigerian pre-primary schools particularly in the private sector, which serves a large and growing proportion of enrolled children — directly contradicts this policy. English-medium instruction is the norm rather than the exception in urban and peri-urban private pre-primary schools, driven by parental preference for English language acquisition, operator marketing strategies, and teacher preparation that emphasises English-language delivery.

The curriculum and instruction consequences of English-only pre-primary instruction are severe. Research by Cummins (2001) and UNESCO (2021) consistently demonstrates that children who receive early education in an unfamiliar language develop weaker conceptual understanding, lower metacognitive awareness, and less secure language competence in both the first and second language than children who receive initial instruction in their mother tongue before transitioning to the second language. In the Nigerian context, where most children enter pre-primary school with zero or minimal English vocabulary and where many teachers themselves have limited English language proficiency, English-medium instruction produces a profound communicative gap between teacher and learner that undermines the quality of educational interaction at its most fundamental level (Abubakar &

Mohammed, 2020; Taiwo & Ezechukwu, 2021). A child who cannot understand the language in which instruction is delivered cannot engage meaningfully with curriculum content, however well designed that content may be.

Pedagogy and Instruction: The Persistence of Didacticism

The instructional methods prevalent in Nigerian pre-primary classrooms remain predominantly didactic characterised by teacher-centred direct instruction, rote repetition, passive listening, copying from the board, and completion of worksheets despite the overwhelming evidence from developmental psychology, ECE research, and the NPE's own stated objectives that young children learn most effectively through active, play-based, exploratory, and socially mediated instruction (Vygotsky, 1978; Piaget, 1952; Gardner, 1983; Bredekamp, 2014). Studies of Nigerian ECE classrooms have documented predominantly whole-class instruction with minimal individualised attention to children's diverse developmental levels; frequent use of rote choral repetition for letter, number, and word learning; limited provision of concrete manipulatives and learning materials; and virtually no structured provision for child-directed play, exploratory learning, or creative expression (Taiwo & Ezechukwu, 2021; Obasi, 2022; Okafor & Udezo, 2022).

The persistence of didactic instruction in Nigerian ECE settings is not primarily a product of teacher ignorance, though inadequate teacher preparation is a contributing factor. It reflects structural and cultural determinants that are more fundamental: large class sizes (often 30–50 children in a single pre-primary classroom) that make individualised or small-group instruction practically challenging without additional support; teacher workload pressures including planning, administrative duties, and parent communication that leave insufficient time for the complex preparation required for high-quality play-based instruction; inadequate provision of learning materials and equipment for activity-based learning; physical classroom environments designed for frontal instruction rather than learning-centre or activity-based organisation; and an institutional culture of formal schooling that equates effectiveness with visible academic work (writing, reading, computation) rather than with the exploratory, messy, active learning that developmentally appropriate ECE instruction involves (Abubakar & Mohammed, 2020; Ajayi, 2019).

Assessment: Standardised Testing and Developmental Mismatch

Assessment practices in Nigerian ECE are predominantly summative, standardised, and product-oriented reflecting the assessment philosophy of formal schooling rather than the process-oriented, observational, portfolio-based assessment approaches that ECE research identifies as developmentally appropriate for young children (Wortham, 2012; McAfee, Leong & Bodrova, 2004). End-of-term examinations in reading, writing, arithmetic, and subject knowledge are administered in many Nigerian pre-primary schools, generating numerical scores that are reported to parents as evidence of children's academic achievement. Class teachers are judged, and sometimes compensated, on the basis of their students' examination performance — creating powerful incentives to prioritise examination preparation over developmentally appropriate learning.

Developmentally appropriate ECE assessment recognises that young children's learning is best evaluated through continuous observation, work sample collection, learning documentation (learning stories, photographs, videos of child activity), portfolio compilation, and structured observation using developmental checklists rather than through standardised tests that require children to demonstrate learning in the decontextualised, abstractly symbolic, and linguistically demanding format that

examinations impose (McAfee, Leong & Bodrova, 2004; Wortham, 2012). The purpose of ECE assessment, in the developmental perspective, is formative to inform the teacher's understanding of each child's developmental progress and to guide instructional planning rather than summative to rank children relative to each other or to grade-level expectations (Bredekamp, 2014). The transition from standardised summative testing to authentic formative assessment in Nigerian ECE requires fundamental professional re-orientation that cannot be achieved without comprehensive teacher education reform.

Indigenous Knowledge and Cultural Responsiveness

Nigeria's exceptional cultural diversity with over 250 ethnic groups, more than 500 languages, rich traditions of communal educational practice, and accumulated indigenous knowledge systems spanning agriculture, medicine, philosophy, art, music, and social organisation constitutes an underutilised pedagogical resource of immense educational potential for ECE curriculum design (Battiste, 2013; Smith, 2012; Datta, 2018). Indigenous knowledge systems the intergenerational transmission of cultural values, practical skills, ecological understanding, and social norms through community-based educational practices embody exactly the kinds of holistic, experiential, socially embedded, and culturally meaningful learning that developmental theory prescribes for young children (Vygotsky, 1978; Gardner, 1983; Bronfenbrenner, 1979).

Yet Nigerian ECE curriculum particularly in its standardised, nationally prescribed formats remains largely devoid of systematic integration of indigenous knowledge, local cultural content, traditional artistic and musical practices, community-based learning experiences, and local environmental knowledge (Ajayi, 2019; Battiste, 2013). The curriculum presents predominantly Western content, pedagogical models derived from European and North American ECE traditions, and assessment frameworks developed for very different cultural and developmental contexts. Children in Hausa, Yoruba, Igbo, Fulani, Tiv, Kanuri, and hundreds of other Nigerian cultural communities bring to pre-primary school an extraordinarily rich fund of culturally specific knowledge, values, language, and experience that culturally responsive curriculum could build upon and extend but which the current standardised curriculum largely ignores or, worse, implicitly devalues through its exclusive emphasis on Western academic content and English language.

A Curriculum and Instruction Reform Framework for Transformative Nigerian ECE

This section proposes a comprehensive Curriculum and Instruction Reform Framework for Transformative Nigerian ECE (CIRF-TECE). The framework is organised around six mutually reinforcing reform pillars, each addressing a specific dimension of the curriculum and instruction gap between Nigerian ECE policy intent and classroom reality.

Pillar 1: Developmentally Appropriate Curriculum

The first and most fundamental reform pillar is the systematic redesign of Nigerian ECE curriculum content to be developmentally appropriate for the three-to-eight age range. Bredekamp (2014), in the widely influential Developmentally Appropriate Practice (DAP) framework developed by the National Association for the Education of Young Children (NAEYC), defines developmentally appropriate practice as "teaching that is intentional and informed by knowledge of child development and learning, the individual child, and the social and cultural context." Developmentally appropriate ECE curriculum content for Nigerian children aged three to five years should emphasise: oral language development in

the mother tongue; narrative and storytelling competencies; mathematical reasoning through concrete manipulation and pattern recognition; scientific enquiry through nature observation and sensory exploration; creative expression through art, music, movement, and dramatic play; social-emotional skill development; and physical development through gross and fine motor activities.

Critically, developmentally appropriate curriculum design does not mean absence of cognitive challenge or intellectual content it means that cognitive challenge is delivered through concrete, contextually meaningful, socially rich, and playfully engaging activities rather than through formal abstract instruction (Piaget, 1952; Bredekamp, 2014; Ornstein & Hunkins, 2018). A three-year-old child engaged in sorting coloured blocks by size, shape, and colour is developing the mathematical reasoning foundations of classification, seriation, and logical thinking the cognitive structures upon which later arithmetic and algebra will be built. This activity is both more developmentally effective and more pedagogically sophisticated than worksheet drills in number recognition, though it looks less 'educational' to an observer socialised to equate schooling with visible academic work. Re-educating Nigerian parents, school administrators, and policymakers about the educational value of play-based, concrete, exploratory ECE curriculum is as important a reform task as redesigning the curriculum itself.

Pillar 2: Mother-Tongue First Instruction

The enforcement and operationalisation of the National Policy on Education's mother-tongue instruction mandate is the second essential reform pillar. This requires, at minimum, four concurrent interventions. First, the development of pre-primary learning materials storybooks, songs, games, number rhymes, activity cards, and simple readers in all major Nigerian languages, produced in partnership with community linguistic experts, cultural knowledge holders, and curriculum developers. Second, the redesign of ECE teacher education programmes to produce bilingual teachers with strong pedagogical skills in both the mother tongue and English, equipped to implement the structured transition approach in which children develop solid conceptual literacy foundations in the mother tongue before English is introduced as a subject (not a medium of instruction) in the transition years (Cummins, 2001). Third, the development of a national policy enforcement mechanism that inspects and regulates the language of instruction in private pre-primary schools, with regulatory consequences for schools that violate the NPE's mother-tongue mandate. Fourth, a sustained public awareness campaign addressing the empirical evidence that mother-tongue instruction provides the conceptual and linguistic foundations that enable more effective English language acquisition when English is introduced systematically, rather than disadvantaging children in English acquisition (Cummins, 2001; UNESCO, 2021).

Pillar 3: Play-Based Pedagogical Approach

Play-based learning the organisation of the curriculum around child-directed and teacher-guided play activities as the primary vehicle for curriculum delivery is the pedagogical approach most strongly supported by the convergent evidence of developmental theory, neuroscience, and ECE research (Vygotsky, 1978; Piaget, 1952; Bredekamp, 2014; Whitebread, 2012). Play provides the intrinsic motivation, emotional engagement, social richness, cognitive challenge, creative freedom, and physical activity that young children's developmental needs demand and that their natural learning instincts embrace. The neurological evidence confirms that play activates precisely the brain regions and neurochemical systems including the prefrontal cortex, hippocampus, and dopaminergic reward circuitry most critical for learning, memory consolidation, and executive function development (Whitebread, 2012; Shonkoff & Phillips, 2000).

The implementation of play-based pedagogy in Nigerian pre-primary classrooms requires physical reorganisation of the learning environment from rows of desks facing a board to learning centre configurations that support simultaneous small-group activity across multiple curriculum domains. A model Nigerian ECE classroom organised around the play-based pedagogical approach would include: a dramatic play/home corner centre for socio-dramatic play and role play; a construction and building centre with blocks, LEGO, and recycled materials; a book corner with age-appropriate illustrated books in mother tongue and English; a nature and science discovery centre with natural materials, magnifying glasses, simple magnets, and growing plants; an art and creative expression centre with paint, clay, fabric, and mark-making materials; a mathematics and logic centre with sorting materials, pattern blocks, counting objects, and simple puzzles; a sand and water play area for sensory exploration; and a music and movement area with percussion instruments and space for dance and movement (Bredenkamp, 2014; Wood et al., 1976). This physical infrastructure investment requires significant capital expenditure and government commitment that is currently absent from most Nigerian public pre-primary schools.

Pillar 4: Culturally Responsive Curriculum

A culturally responsive ECE curriculum for Nigeria would systematically map the rich traditional educational resources of each community oral literature and storytelling traditions, traditional musical forms and instruments, indigenous games and physical activities, agricultural and craft knowledge systems, community governance practices, and ecological knowledge and integrate these into the ECE curriculum as primary content, not as peripheral cultural enrichment (Battiste, 2013; Smith, 2012; Datta, 2018; Gardner, 1983). Traditional Nigerian children's games such as Suwe (Yoruba hopscotch), Ayo/Oware (mathematical strategic game), and communal storytelling circles embody exactly the mathematical reasoning, strategic thinking, linguistic competence, and social cooperation skills that developmental theory prescribes for early childhood curriculum. Indigenous agricultural knowledge provides rich, contextually meaningful content for science, mathematics, and environmental education curriculum. Traditional crafts weaving, pottery, beadwork, carving provide extraordinary vehicles for fine motor development, mathematical pattern recognition, cultural identity formation, and aesthetic education (Gardner, 1983; Battiste, 2013).

The development of culturally responsive ECE curriculum materials requires deliberate partnership between curriculum developers, community elders and knowledge holders, linguists, artists, and teachers a collaborative curriculum development process that values community expertise as much as academic knowledge. It also requires a philosophical reorientation in Nigerian curriculum development institutions moving from curriculum as a technology of cultural standardisation to curriculum as a celebration and development of cultural diversity. Bronfenbrenner's (1979) ecological framework demands exactly this reorientation: the child's macrosystem the cultural values, community practices, and linguistic heritage of their ethnic group is not an obstacle to be overcome by education but the most powerful developmental resource that education should engage, honour, and build upon.

5.5 Pillar 5: Authentic Developmental Assessment

The transformation of assessment practice in Nigerian ECE from standardised summative testing to authentic, formative, developmental assessment is the fifth critical reform pillar. Authentic developmental assessment in ECE is defined as assessment that: uses observation of children in natural learning contexts as the primary data collection method; collects evidence of children's actual performance on meaningful tasks rather than their performance on standardised test items; documents

development across all domains cognitive, linguistic, social, emotional, and physical rather than only academic domains; serves the formative purpose of informing instruction rather than the summative purpose of ranking or grading children; involves children as active participants in their own assessment through learning conversations and self-reflection; and engages parents as partners in understanding and supporting their children's development (Wortham, 2012; McAfee, Leong & Bodrova, 2004; Bredekamp, 2014).

Practical authentic assessment tools appropriate for Nigerian ECE contexts include: narrative observation records (running records and anecdotal notes documenting children's observed behaviours and learning); developmental checklists aligned to Nigerian child development milestones across all domains; learning portfolios comprising work samples, photographs, and teacher observation notes documenting each child's progress over time; learning stories brief, celebratory narrative accounts of significant learning moments that honour the child's agency and competence; and structured developmental assessments using validated instruments such as the Ages and Stages Questionnaires (ASQ) or the Griffiths Mental Development Scales, administered by trained specialists (McAfee, Leong & Bodrova, 2004; Wortham, 2012). The transition to authentic assessment requires sustained investment in teacher professional development, assessment tool development in Nigerian languages, and regulatory reform that removes standardised examinations from pre-primary education as a mandatory government requirement.

Pillar 6: Transformative Teacher Professional Development

The most indispensable and most inadequately resourced pillar of ECE curriculum and instruction reform in Nigeria is teacher professional development. The quality of ECE curriculum and instruction is ultimately bounded by the knowledge, skills, professional identity, and pedagogical disposition of the teachers who implement it. Without teachers who deeply understand child development, who are skilled in play-based and activity-centred pedagogy, who can assess children observationally and formatively, who can teach bilingually, who can integrate indigenous cultural content into developmentally appropriate activities, and who have the professional agency and institutional support to implement evidence-based practice no curriculum document, policy framework, or assessment system will produce quality ECE outcomes (Vygotsky, 1978; Bloom, 1956; Gagne, 1985; Bredekamp, 2014).

Transformative ECE teacher professional development in Nigeria must address several dimensions simultaneously. Pre-service teacher education for ECE teachers must be redesigned to include: comprehensive child development theory grounded in Piaget, Vygotsky, Bronfenbrenner, and Gardner; supervised practicum in high-quality ECE settings with expert mentoring and coaching; play-based pedagogy and learning environment design; mother-tongue first instructional strategies and bilingual teaching skills; authentic developmental assessment methods; culturally responsive curriculum design; family engagement strategies; and inclusive education principles for children with developmental delays or disabilities. Minimum qualification standards for ECE teachers should be raised to at least the Nigeria Certificate in Education (NCE) level, with a specialisation in Early Childhood Education currently a requirement honoured more in the breach than the observance in many states (Federal Republic of Nigeria, 2013; Ajayi, 2019).

In-service professional development must be continuous, school-based, and job-embedded rather than the one-off workshop and seminar model that dominates current practice. Lesson study communities in which ECE teachers collaboratively plan, teach, observe, and analyse lessons in cycles of professional

enquiry provide a powerful model for school-embedded professional development that is directly grounded in classroom practice (Lewis, Perry & Hurd, 2009). University-school ECE partnership programmes through which university ECE faculty provide regular mentoring, coaching, and modelling of best practice to pre-primary school teachers create sustained, theoretically grounded professional development relationships that episodic training workshops cannot achieve. Continuous professional development for ECE teachers must also be professionalised recognised through formal accreditation, rewarded through career progression, and supported through adequate time allocation and resource provision (Bredenkamp, 2014; Bloom, 1956).

Curriculum and Instruction as The Central Discipline for ECE Reform in Nigeria

The preceding analysis demonstrates that the challenges facing early childhood education in Nigeria are, at their most fundamental level, curriculum and instruction challenges. The failures of Nigerian ECE developmental inappropriateness of content, pedagogical didacticism, language mismatch, culturally unresponsive materials, invalid assessment, and teacher under-preparation are all failures of curriculum and instruction theory, design, implementation, and professional practice. Addressing them therefore requires the full application of the scholarly, professional, and institutional resources of the field of curriculum and instruction to the specific developmental and cultural context of Nigerian early childhood education.

The field of curriculum and instruction, as defined by Tyler (1949), Taba (1962), Bloom (1956), Bruner (1966), and more recently by Ornstein and Hunkins (2018), Bredenkamp (2014), and Sleeter (2005), encompasses four fundamental questions: What educational purposes should the school seek to attain? (Curriculum objectives and outcomes); What educational experiences can be provided that are likely to attain these purposes? (Curriculum content and learning experiences); How can these educational experiences be effectively organised? (Curriculum design and sequencing); and How can we determine whether these purposes are being attained? (Curriculum assessment and evaluation). Applied to Nigerian ECE, these four questions generate the specific curriculum and instruction reform agenda that this article has elaborated: developmentally appropriate objectives grounded in child development theory (Piaget, 1952; Vygotsky, 1978; Gardner, 1983); play-based, culturally responsive, mother-tongue-mediated learning experiences; developmental sequencing and learning environment organisation consistent with ECE research (Bredenkamp, 2014); and authentic formative assessment aligned to developmental milestones rather than academic grade-level standards (Wortham, 2012; McAfee et al., 2004).

The relationship between curriculum and instruction in ECE is particularly intimate more so than at any other educational level. In formal primary and secondary schooling, curriculum (the content and objectives) can be to some degree separated from instruction (the methods of delivery) the same curriculum can be delivered by different instructional approaches with varying degrees of effectiveness. In ECE, by contrast, the how of instruction is inseparable from the what of curriculum: a play-based curriculum that is delivered through didactic instruction ceases to be a play-based curriculum; an exploratory science curriculum that is implemented through textbook copying produces nothing of scientific understanding; a social-emotional learning curriculum implemented through individual seatwork fails to develop the social skills it prescribes (Bredenkamp, 2014; Vygotsky, 1978; Piaget, 1952). This inseparability of curriculum and instruction in ECE places special demands on teacher professional development, curriculum design, and programme implementation that require genuine interdisciplinary scholarship drawing on child development theory, curriculum theory, instructional theory, and cultural studies the full breadth of the curriculum and instruction field.

The Nigerian university system has a critical institutional role to play in this curriculum and instruction reform agenda. Departments of Curriculum and Instruction in Nigerian faculties of education should assume scholarly leadership of ECE curriculum reform conducting research on curriculum effectiveness, developing culturally responsive curriculum materials in partnership with communities, training ECE curriculum developers and teacher educators, advocating for evidence-based policy reform in national and state education policy processes, and mentoring practising ECE teachers in the implementation of developmentally appropriate curriculum and instruction (Ornstein & Hunkins, 2018; Gagne, 1985; Bloom, 1956). The scholarly resources, research methodology, curriculum theory expertise, and institutional authority of the curriculum and instruction academic community represent precisely the kind of expert engagement that Nigerian ECE reform requires and currently lacks.

Conclusion and Recommendations

Early childhood education in Nigeria stands at a critical juncture. The policy commitments are in place the National Policy on Education, the ECCD Policy, and the SDG 4 framework provide a sound statutory foundation for quality ECE. The developmental science is clear six decades of research from Piaget (1952) to Heckman (2006) to Britto et al. (2017) has established beyond reasonable doubt that early childhood is the most powerful window for educational investment and that quality ECE produces the most significant and most durable developmental returns of any educational investment. What Nigeria lacks is not the policy framework, the developmental science, or even the cultural resources for quality ECE what it lacks is the curriculum and instruction infrastructure and professional capacity to translate these assets into consistently high-quality classroom practice for all Nigerian children.

The Curriculum and Instruction Reform Framework for Transformative Nigerian ECE (CIRF-TECE) proposed in this article provides a comprehensive, theoretically grounded, and practically actionable roadmap for addressing this gap. Its six pillars developmentally appropriate curriculum, mother-tongue first instruction, play-based pedagogy, culturally responsive content, authentic developmental assessment, and transformative teacher professional development — constitute a mutually reinforcing reform system in which each pillar supports and depends on the others. Implementing any single pillar in isolation will produce limited and unsustainable change; implementing all six in a coordinated, sustained, and adequately resourced reform programme will generate the transformative improvement in Nigerian ECE quality that the country's children deserve and its national development requires.

Based on the preceding analysis, the following recommendations are proposed for the specific stakeholder groups most critical to Nigerian ECE curriculum and instruction reform.

Recommendations

1: The Federal Ministry of Education should commission a comprehensive, evidence-based review and revision of the national ECE curriculum framework, replacing academised content with developmentally appropriate learning objectives grounded in Piaget (1952), Vygotsky (1978), and Gardner's (1983) theoretical frameworks, with immediate effect.

2: The National Policy on Education's mother-tongue instruction mandate should be enforced through a formal regulatory compliance mechanism for all private pre-primary schools, with clear compliance timelines, inspection protocols, and regulatory consequences for violation. The Ministry should simultaneously fund the development of pre-primary learning materials in all major Nigerian languages.

3: Government should significantly increase the proportion of the education budget allocated to early childhood education to the UNESCO-recommended minimum of 10% of the total education budget recognising ECE as the highest-return educational investment and prioritising it accordingly in annual budget cycles.

4: State Ministries of Education should develop, fund, and implement state-level ECE teacher professional development programmes that provide ECE teachers with continuous, school-based, mentored professional learning in developmentally appropriate practice, play-based pedagogy, authentic assessment, and culturally responsive curriculum.

5: The minimum qualification standard for ECE teachers should be raised to the Nigeria Certificate in Education (NCE) with a mandatory specialisation in Early Childhood Education, with a phased implementation timeline that allows existing teachers to upgrade their qualifications with government support.

6: The Nigerian Educational Research and Development Council (NERDC) should establish a dedicated ECE Curriculum Development Unit, staffed by curriculum specialists with expertise in early childhood development, and charged with the systematic revision of the pre-primary curriculum to align with CIRF-TECE principles and with international ECE curriculum best practice.

7: Curriculum developers should adopt a community-inclusive curriculum development process for Nigerian ECE materials, systematically engaging community elders, traditional knowledge holders, linguistic experts, artists, and local teachers as co-developers of culturally responsive curriculum content.

8: NERDC should develop a comprehensive set of authentic developmental assessment tools developmental checklists, portfolio assessment guidelines, observation record formats, and learning story frameworks aligned to Nigerian child development milestones and available in major Nigerian languages.

9: A curriculum and instruction quality assurance framework specifically designed for ECE should be developed, providing inspectors and supervisors with standardised criteria for evaluating the developmental appropriateness, cultural responsiveness, and instructional quality of ECE programmes.

10: Departments of Curriculum and Instruction and Early Childhood and Primary Education in Nigerian universities should collaborate to design and deliver an integrated ECE teacher education programme grounded in CIRF-TECE principles, combining child development theory, curriculum design, play-based pedagogy, authentic assessment, and bilingual instruction skills in a coherent professional preparation curriculum.

11: University-school ECE partnership programmes should be established in which ECE faculty provide regular mentoring, coaching, and demonstration teaching in partnership pre-primary schools, creating living laboratories for ECE curriculum and instruction innovation that both advance research and improve school practice.

12: Nigerian curriculum and instruction scholars should undertake a sustained programme of empirical research on ECE curriculum effectiveness in Nigerian contexts examining the developmental outcomes produced by different curriculum approaches, the barriers and enablers of curriculum reform, and the

most effective models of ECE teacher professional development thereby generating the evidence base that policy reform and curriculum development require.

13: The curriculum and instruction academic community should engage proactively in public discourse and policy advocacy on ECE reform publishing policy briefs, engaging media, participating in government consultations, and contributing to professional development for education administrators exercising the scholarly leadership role that the national ECE reform agenda requires.

14: Head teachers and proprietors of pre-primary schools should audit their current curriculum and instructional practices against the CIRF-TECE framework, identifying the specific pillar dimensions in which their school's practice most diverges from developmentally appropriate standards and developing a prioritised improvement plan.

15: School administrators should invest in physical learning environment redesign introducing learning centres, outdoor learning areas, and sensory and play materials as a practical first step toward implementing play-based pedagogy, even before formal curriculum revision is complete.

16: Head teachers should establish ECE lesson study communities within their schools, providing ECE teachers with regular collaborative professional learning opportunities that are embedded in their daily practice rather than occurring exclusively in external training workshops.

17: School administrators should engage parents and community members in ECE curriculum reform conversations communicating the developmental evidence for play-based, mother-tongue, and exploratory curriculum approaches, addressing parental anxiety about academic preparation, and building community understanding of and support for developmentally appropriate ECE practice.

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