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Promoting Functional Skills Through Innovative Pedagogies in Special Education: Historical Perspectives, Current Practices, and Future Directions

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Abstract

The promotion of functional skills has been a contested and evolving aspiration within the history of special education, shaped by shifting philosophical paradigms, legislative transformations, and pedagogical innovations spanning more than two centuries. This paper traces the historical development of functional skills education for learners with disabilities from the pioneering institutional experiments of the early nineteenth century through the community-integration movements of the twentieth century to contemporary evidence-based practices in inclusive and special school settings. Drawing on international historical scholarship and the Nigerian policy context, including the National Policy on Special Needs Education (Federal Ministry of Education [FME], 2015), the revised National Policy on Inclusive Education (FME, 2023), and the Nigerian Educational Research and Development Council (NERDC) adapted curriculum, the paper synthesises evidence on five innovative pedagogical approaches: Augmentative and Alternative Communication (AAC), Universal Design for Learning (UDL), play-based learning, technology-assisted instruction, and milieu teaching. The paper argues that understanding the historical trajectory of functional skills education is indispensable for contextualising present-day challenges and for designing pedagogies that are both evidence-informed and culturally responsive. Recommendations are offered for curriculum planners, teacher educators, school administrators, and policymakers in Nigeria and comparable low- and middle-income contexts.

Keywords: Functional skills, special education history, innovative pedagogy, curriculum, universal design for learning.

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1. INTRODUCTION

The quest to equip individuals with disabilities with skills sufficient for meaningful participation in daily life is neither new nor settled. As Winzer (1993) demonstrated in her seminal historical survey of special education, every era has produced its own conception of what constitutes a functional skill, whose responsibility it is to teach such skills, and which pedagogical methods are appropriate for doing so. These historical debates carry direct implications for contemporary practice because the institutions, policies, and professional cultures through which special education is delivered today were shaped by decisions made in the distant and recent past.

Communication is the cornerstone of human development and social participation. For learners with disabilities, the acquisition of functional skills, encompassing communication, self-care, vocational preparation, and social participation, is often the primary educational priority. Functional communication refers to the ability to convey basic wants, needs, feelings, and information in ways that are meaningful and effective in daily life (Beukelman & Light, 2020). In the context of special education, functional communication encompasses verbal speech, sign language, picture-based systems, and high-technology speech-generating devices, collectively known as Augmentative and Alternative Communication (AAC).

Nigeria is home to one of the largest populations of children with disabilities in sub-Saharan Africa. According to the 2021 Multiple Indicator Cluster Survey conducted by the National Bureau of Statistics with support from UNICEF, significant proportions of Nigerian children experience functional difficulties affecting communication, learning, and mobility (NBS/UNICEF, 2021). Despite these realities, the provision of special education in Nigeria remains fragmented, under-resourced, and insufficiently aligned with current evidence-based practices. The Federal Ministry of Education acknowledged this gap when it approved the National Policy on Inclusive Education in 2023, which frames inclusion as a process aimed at removing barriers to learning for all children, including those with disabilities (FME, 2023).

Nigeria's curriculum framework for special education, largely managed through the Nigerian Educational Research and Development Council, has begun to incorporate adapted provisions through the 9-Year Basic Education Curriculum and related policy instruments (NERDC, 2023). Nonetheless, implementation remains inconsistent, particularly regarding functional skills pedagogy. Challenges identified in the literature include inadequate infrastructure, limited teacher capacity in inclusive pedagogy, insufficient funding, rigid assessment systems, and socio-cultural barriers to disability acceptance (Manir, 2024).

Against this backdrop, the present paper addresses the following research questions: (1) How has the concept of functional skills in special education evolved historically? (2) What does the current Nigerian curriculum framework provide for functional skills in special education? (3) What innovative pedagogical approaches have demonstrated effectiveness in promoting functional skills among learners with special needs? (4) How can these approaches be integrated into Nigeria's curriculum organisation? The paper proceeds through a historical survey, a conceptual review of relevant pedagogies, an analysis of the Nigerian policy and curriculum context, and a set of recommendations for stakeholders.

2. HISTORICAL PERSPECTIVES ON FUNCTIONAL SKILLS IN SPECIAL EDUCATION

2.1 Early Institutional Experiments and the Origins of Functional Education

The history of educating individuals with disabilities for functional participation in society dates to the early nineteenth century, when reformers in Western Europe first challenged the prevailing assumption that persons with sensory or cognitive impairments were uneducable. Itard's (1801) documented work with Victor, the so-called Wild Boy of Aveyron, represented an early and contested attempt to develop functional communication and adaptive skills through systematic sensory training (Kanner, 1964, as cited in Winzer, 1993). Although Itard's experiment yielded ambiguous results, it established the intellectual precedent that structured, individualised pedagogy could promote functional capacities in individuals previously deemed beyond the reach of education.

Seguin, a student of Itard, translated these early experimental insights into a more systematic physiological method that formed the philosophical foundation of later special education practice in the United States and Europe (Osgood, 2008). Seguin's method emphasised the development of muscular control, sensory discrimination, and imitation as pathways to functional independence. Institutions such as the Perkins School for the Blind in Massachusetts and the American School for the Deaf in Hartford similarly prioritised practical skills alongside academic content, reflecting a conviction, characteristic of nineteenth-century philanthropic thought, that persons with disabilities could be trained for productive participation in social and economic life (Nielsen, 2012).

The emergence of these institutions in the nineteenth century was paralleled, in the African context, by the arrival of missionary education for persons with disabilities. In Nigeria, the Sudan Interior Mission established the first special school in Gindiri, Plateau State, in the 1950s, echoing the institutional model pioneered in the West but adapted to the colonial educational context (National Open University of Nigeria [NOUN], 2021). The curricula of these early Nigerian special schools emphasised functional skills in vocational craft, agricultural training, and basic literacy, reflecting both missionary ideals of self-sufficiency and the limited academic expectations colonial administrators held for disabled Africans.

2.2 The Twentieth Century: From Institutional Care to Community Integration

The first half of the twentieth century witnessed a progressive medicalisation of disability, in which functional skills education became subordinated to diagnostic classification and custodial care. The eugenicist movements of the early twentieth century in Europe and North America significantly curtailed educational provision for individuals with intellectual and physical disabilities, framing them as social burdens rather than learners with educable potential (Trent, 1994). Only with the post-World War II expansion of welfare states and the emergence of parent-advocacy organisations in the 1950s and 1960s did the case for systematic functional skills education regain institutional momentum.

The landmark Education for All Handicapped Children Act of 1975 in the United States mandated free and appropriate public education for all children with disabilities, including those with the most significant needs, and introduced the Individualized Educational Programme as the primary vehicle for planning functional outcomes (Yell, 2019). This legislative development had global resonance, encouraging advocacy organisations and governments worldwide to reconceptualise functional skills education not as charitable provision but as a legal entitlement. In Nigeria, the National Policy on

Education of 1977 included, for the first time, specific provisions acknowledging the educational rights of children with special needs, though implementation remained peripheral to the mainstream curriculum (Federal Government of Nigeria [FGN], 2004).

The deinstitutionalisation movement of the 1970s and 1980s, which drew impetus from the normalisation principle articulated by Wolfensberger (1972), shifted the pedagogical emphasis from institutional training toward community-based functional skills. The normalisation principle held that persons with disabilities were entitled to living conditions and daily routines as close to those of the general population as possible, which necessitated intensive functional preparation for participation in community contexts. This theoretical reorientation transformed curricula in special schools across the United States, Canada, and Western Europe, placing activities of daily living, functional communication, and community navigation at the centre of educational planning for students with significant disabilities (Ford et al., 1989, as cited in Browder & Spooner, 2011).

2.3 The Inclusive Education Era: Reconciling Functional and Academic Goals

The adoption of the UNESCO Salamanca Statement in 1994 marked a decisive turn in the global discourse on special education, affirming that schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic, or other conditions (UNESCO, 1994). The Salamanca Statement accelerated the movement toward inclusive education and introduced new tensions regarding the balance between functional skills instruction and academic participation. Educators and researchers debated whether students with significant disabilities could meaningfully access the general education curriculum or whether functional skills instruction represented a more appropriate and socially valued alternative (Kauffman & Hallahan, 2005).

The United Nations Convention on the Rights of Persons with Disabilities (CRPD), adopted in 2006, further elevated the international normative framework by asserting the right of all persons with disabilities to inclusive education at all levels and by situating functional competence within a broader rights-based understanding of quality of life (United Nations, 2006). The CRPD's Social Model of Disability, which locates barriers to participation within environmental and institutional structures rather than within the individual, challenged educators to design functional skills curricula that build capacity while simultaneously transforming the contexts in which those skills are deployed. Nigeria's ratification of the CRPD and the subsequent enactment of the Discrimination Against Persons with Disabilities (Prohibition) Act in 2018 placed these international commitments within a domestic legal framework, though domestication across states remained incomplete (FGN, 2018).

In the Nigerian historical context, the post-independence expansion of special education accelerated in the 1970s and 1980s, with the establishment of schools for the visually impaired, the deaf, and individuals with intellectual disabilities in major cities. Subsequent decades saw the development of vocational training centres alongside academic schools, reflecting an awareness that functional preparation for economic participation was as critical as literacy and numeracy (NOUN, 2021). However, as Oluwapelumi et al. (2025) observed in a recent study of special education teachers in south-west Nigeria, the institutional inheritance of this period created siloed, disability-category-specific provision that remained largely disconnected from mainstream curriculum development and from contemporary functional skills frameworks.

3. CONCEPTUAL FRAMEWORK

The paper is anchored in two theoretical traditions. The first is the Social Model of Disability, which locates barriers to communication and functional participation not primarily within the individual but within environmental, attitudinal, and institutional structures (United Nations, 2006). This model, itself a product of the disability rights movement of the 1970s and 1980s, is foundational to inclusive education policy globally and underpins the argument that curriculum and pedagogy must be redesigned to accommodate diverse learners. The second tradition is the Communication Competence Framework advanced by Light and McNaughton (2014), which holds that functional communicative competence involves four interrelated domains: linguistic competence, operational competence, social competence, and strategic competence.

These conceptual anchors align with the Universal Design for Learning framework advanced by CAST (2024), which emphasises flexible goals, methods, materials, and assessments to serve all learners. UDL's three principles, providing multiple means of engagement, representation, and action and expression, are particularly relevant to the design of functional skills curricula. The most recent iteration, UDL Guidelines 3.0, released in July 2024, explicitly addresses biases and systems of exclusion that marginalise learners with communication differences and draws on the long historical struggle against educational exclusion to argue for systemic curriculum redesign (CAST, 2024).

4. SPECIAL EDUCATION AND FUNCTIONAL SKILLS IN THE NIGERIAN CONTEXT

4.1 Historical Background of Special Education in Nigeria

The history of formal special education in Nigeria dates to the 1950s when the first special school was established in Gindiri, Plateau State, under the auspices of the Sudan Interior Mission (NOUN, 2021). This foundational institution was shaped by missionary conceptions of functional independence rooted in vocational training and religious instruction, reflecting the colonial-era assumption that disabled Africans were best served through practical rather than academic curricula. Subsequent decades saw the establishment of schools for the visually impaired, the deaf, and individuals with intellectual disabilities, each following the categorical, institution-based model that characterised special education in the industrialised world during the same period.

The National Policy on Education, first formulated in 1977 and revised several times, included provisions for special education, though these provisions remained peripheral to mainstream curriculum development (FGN, 2004). Historically, the policy reflected the influence of the Universal Primary Education campaign of 1976, which sought mass educational expansion but gave inadequate attention to the specific functional learning needs of children with disabilities. The National Policy on Special Needs Education of 2015 represented a more deliberate attempt to articulate a framework, but as Oluwapelumi et al. (2025) observed in a recent study on special education teachers in south-west Nigeria, implementation challenges remain widespread.

The Discrimination Against Persons with Disabilities (Prohibition) Act, enacted in 2018, formally prohibits discrimination in education and mandates accessibility; however, as of 2024, only 23 of Nigeria's 36 states had domesticated the Act into state legislation (Glory Ifezue Foundation, 2025). This legislative incompleteness is historically significant because it mirrors the pattern observed during earlier policy cycles in Nigeria's educational history,

where federal policy aspirations consistently outpaced state-level implementation capacity. Understanding this historical pattern is essential for designing realistic future-direction strategies that account for the structural constraints of Nigeria's federal system.

4.2 Curriculum Organisation for Special Needs in Nigeria

Nigeria's curriculum for basic education is developed by NERDC and encompasses provisions for learners with special needs through an Adapted 9-Year Basic Education Curriculum. The public presentation of this adapted curriculum in May 2023 signalled a renewed commitment to addressing diverse learning needs (NERDC, 2023). Historically, this adaptation process has been incremental and reactive rather than proactive, responding to advocacy pressure and international normative developments rather than emerging from sustained domestic research on the functional skills needs of Nigerian learners with disabilities.

The National Policy on Special Needs Education (FME, 2015) identifies categories of special needs including visual impairment, hearing impairment, intellectual disability, autism spectrum disorders, speech and language impairments, and physical disabilities. Despite this taxonomy, the policy has been criticised for inadequate emphasis on functional and vocational outcomes and for the absence of robust, technology-supported communication programmes tailored to local contexts (NOUN, 2021). Adebisi et al. (2014), cited in Oluwapelumi et al. (2025), identified barriers to special education that include limited specialist teachers, inaccessible learning materials, and weak interagency collaboration, all of which have deep historical roots in Nigeria's underfunded and fragmented education system.

Oparaduru (2021) observed that the expansion of ICT provision in Nigeria's curriculum carries significant potential for learners with disabilities, yet digital infrastructure in special schools remains inadequate in both urban and rural settings. This contemporary challenge has clear historical antecedents: each successive wave of educational technology, from radio education in the 1970s to computer literacy programmes in the 1990s, has similarly struggled to reach learners with disabilities in Nigeria due to structural inequities in resource distribution. Adesina and Akinyemi (2022) similarly noted that categorisation systems for special needs learners in Nigerian tertiary institutions remain underdeveloped, compounding the already limited availability of functional skills pedagogical support.

5. INNOVATIVE PEDAGOGIES FOR FUNCTIONAL SKILLS IN SPECIAL EDUCATION

5.1 Augmentative and Alternative Communication (AAC)

AAC encompasses a wide range of communication tools, systems, and strategies that support or replace spoken language (American Speech-Language-Hearing Association [ASHA], 2023). Historically, AAC emerged as a recognised field in the 1970s and 1980s in response to the deinstitutionalisation movement and the mainstreaming push, which created urgent demand for communication systems that could function in community and classroom settings rather than in therapy rooms. These include low-technology options such as picture-exchange systems and communication boards, as well as high-technology speech-generating devices and tablet-based applications. AAC is an evidence-based practice with demonstrated outcomes for children across a range of disabilities, including autism spectrum disorder, intellectual disability, cerebral palsy, and acquired neurological conditions (Beukelman & Light, 2020).

Anwar and Hart Barnett (2024) conducted a comprehensive review of AAC implementation in school settings and found that fewer than 40% of students with communication impairments using AAC achieve functional communicative proficiency. Barriers identified include insufficient teacher training, limited preparation time, unfamiliarity with AAC systems, and a scarcity of evidence-based strategies accessible to non-specialist teachers. These findings have direct historical resonance for Nigeria, where speech-language pathology services are sparse and teacher preparation in AAC is minimal, reflecting the long-standing underdevelopment of specialist allied health professions within the Nigerian educational system.

A scoping review by Tönsing and Dada (2016), referenced in a recent African-focused literature review by Kuyler et al. (2025), found that even in South Africa, teachers held cautious attitudes toward AAC and reported limited support for implementation in special schools. Collaborative models in which speech-language pathologists and special education teachers co-develop and co-implement AAC strategies are particularly important for contexts like Nigeria, where the future direction of AAC provision must account for historically entrenched shortages of specialist personnel (Anwar & Hart Barnett, 2024). Curricular integration of AAC requires that communication goals be embedded across all subject areas, not confined to therapy sessions, a principle that historical evidence consistently supports as essential for generalisation and long-term functional gains.

A scoping review published in PMC (Griffen et al., 2025) confirmed that when teachers incorporate communication objectives into curricular design for students with autism spectrum disorder, participation in regular classes improves measurably. For Nigeria's NERDC-designed curriculum, this implies a need to embed AAC objectives within the adapted learning outcomes for each subject from the primary school level onward, building on the historical precedent of the adapted curriculum frameworks developed since the 9-Year Basic Education Curriculum was introduced and drawing future directions from contemporary international evidence.

5.2 Universal Design for Learning (UDL)

UDL is an instructional design framework premised on the recognition that learner variability is the norm rather than the exception. Historically, UDL emerged in the early 1990s from the work of the Centre for Applied Special Technology, drawing on neurological research and architectural universal design principles to argue that educational environments should be built for diversity from the outset rather than retrofitted for individuals (Rose & Meyer, 2002, as cited in CAST, 2024). By building flexibility into educational goals, methods, materials, and assessments from the outset, UDL reduces the need for post-hoc accommodations and creates environments where all learners, including those with functional skill challenges, can participate meaningfully.

McKenzie and Dalton (2020), in a study on UDL within South African inclusive education policy, argued that UDL could serve as a common language enabling effective communication among education stakeholders, an argument with obvious relevance to Nigeria's multi-tiered education governance system, where historical fragmentation between federal, state, and local authority responsibilities has consistently impeded coherent functional skills provision. Karisa (2022), writing from a University of Cape Town perspective, described UDL as increasingly gaining currency across African education systems as a vehicle for flexible instructional strategies. However, a systematic literature review by Bray et al. (2023) cautioned that most UDL evidence derives from the United

States and that future directions for UDL research must include rigorous evaluation in developing country contexts such as Nigeria.

For Nigeria's curriculum organisation, UDL principles suggest that functional skills objectives should be accessible through multiple modalities, including visual supports, tactile materials, audio formats, and digital technologies. Assessment of functional competence should likewise reflect multiple means of expression, accommodating students who communicate through AAC devices, sign language, or picture systems rather than solely through spoken or written language (Boucher et al., 2025). Historically, Nigeria's assessment systems have privileged written and spoken performance, a practice that has systematically disadvantaged students with communication and functional skill differences, and future policy directions must therefore prioritise assessment reform alongside curriculum reform.

5.3 Play-Based Learning and Functional Skills Development

Play-based learning is recognised globally as a powerful medium for developing functional communication and social skills in young children, including those with disabilities (O'Keeffe & McNally, 2023). Historically, the educational value of play was theorised by Froebel in the mid-nineteenth century and later elaborated by Vygotsky, whose concept of the zone of proximal development provided a theoretical basis for understanding how guided play promotes functional skill acquisition in young children with developmental differences. A systematic review of play-based interventions targeting social communication in children with autism spectrum disorder confirmed that play provides a naturalistic context in which functional communication skills can be practised, generalised, and reinforced (O'Keeffe & McNally, 2023).

Danniels and Pyle (2022) demonstrated that inclusive play-based learning in kindergarten classrooms, when supported by knowledgeable teachers, benefits children with neurodevelopmental conditions by increasing both communication initiations and peer interactions. Lindley-Baker (2022), in a study published in the British Journal of Special Education, described a curriculum review in a special school in England that produced a differentiated functional communication model underpinned by sensory processing considerations, finding that a revised play-based curriculum resulted in meaningful improvements in intentional communication for children with neurodiverse developmental disorders. These findings are historically significant because they demonstrate continuity with the nineteenth-century insight, evident in the work of Seguin and Froebel, that functional learning is most durable when embedded in purposeful, enjoyable activity.

A scoping review of play-based interventions for children with disabilities in low- and middle-income countries published in 2025 found that over 90% of children with disabilities globally reside in LMICs and experience worse health and educational outcomes than their peers (Mubiri et al., 2025). Of the 20 eligible studies identified, the majority focused on how play supports therapy, functional communication, and skills development, confirming the centrality of play as a vehicle for functional skill acquisition across diverse resource settings. Nigeria, as an LMIC with a historically strong tradition of communal and play-based learning in indigenous education, stands to benefit from the integration of structured play-based functional skill activities within its special education curriculum, provided that future directions include adequate teacher preparation.

5.4 Technology-Assisted Instruction

Digital technologies have opened new possibilities for functional skills instruction in special education. Tablet computers, speech-generating devices, eye-gaze technology, and

augmented reality applications have all been explored as tools for enhancing functional and communication outcomes among learners with disabilities. Rodriguez-Ortiz et al. (2024), in a systematic review published in Frontiers in Psychology, evaluated technology-based interventions for vocabulary learning in children with autism spectrum disorder and found moderate evidence for the efficacy of technology as a supplementary tool, noting that careful pedagogical planning rooted in an understanding of each learner's functional profile is required to maximise impact.

Historically, the introduction of technology into special education has been characterised by cycles of initial enthusiasm followed by implementation difficulties arising from cost, infrastructure inadequacy, and insufficient teacher training, a pattern documented across successive technological waves from teaching machines in the 1950s through early computer-assisted instruction in the 1980s to the current generation of tablet-based applications (Edyburn, 2013, as cited in Rodriguez-Ortiz et al., 2024). In Nigeria's special education context, the adoption of technology-assisted instruction faces practical challenges including irregular electricity supply, limited internet access in rural areas, high costs of assistive devices, and insufficient technical support for teachers. Oparaduru (2021) underscored that multimedia and ICT tools hold significant promise for learners with disabilities in Nigeria, provided that systemic infrastructure investments accompany their introduction, learning from the historical pattern in which technology initiatives have consistently outpaced the enabling infrastructure needed for sustainable implementation.

A systematic literature review published in the journal Behaviour and Information Technology (2024) confirmed that augmented reality provides digitally-aided functional and language intervention opportunities for children with autism, supporting attentional behaviour, emotional and social skills development, and communication abilities. However, the authors noted that the full potential of AR for functional skills learning has yet to be realised due to inconsistent implementation and insufficient teacher training. For Nigeria, the future direction of technology-assisted functional skills instruction must be grounded in realistic resource planning that draws on lessons from previous technology integration failures while remaining aspirationally aligned with global best practices in accessible education.

5.5 Milieu Teaching and Naturalistic Functional Communication Interventions

Milieu teaching is a naturalistic, child-directed approach to functional communication intervention in which communicative and functional skill opportunities are embedded within everyday routines and activities rather than structured therapy sessions (Hancock & Kaiser, 2006, as referenced in Wetherby et al., 2018). Historically, milieu teaching developed as a refinement of applied behaviour analysis approaches in the late 1970s and 1980s, responding to evidence that skills acquired in clinical settings often failed to generalise to natural environments, a generalisation problem that had been identified as a critical limitation of institutional special education since the deinstitutionalisation debates of the 1970s. Research has consistently demonstrated that milieu teaching procedures effectively expand functional communication repertoires of children with disabilities, including those with autism spectrum disorder and intellectual disabilities (Goldstein, 2002).

The strength of milieu teaching lies in its compatibility with resource-limited settings, making it historically well-suited to contexts like Nigeria where high-technology interventions have faced persistent implementation barriers. Unlike high-technology AAC systems, milieu approaches can be implemented by trained teachers and caregivers using

naturally occurring materials and interactions. A meta-analysis published in the Review Journal of Autism and Developmental Disorders (2024) found that parent-implemented play-based and milieu interventions significantly improved social communication and language skills in preschool children with autism spectrum disorder. In Nigeria, where family networks are historically strong and community-based support structures have deep cultural roots, training parents and community caregivers in milieu strategies could extend the reach of functional skills intervention beyond formal school settings, building on indigenous communal educational traditions that have long valued functional preparation within family and community contexts.

For curriculum organisation in Nigeria, milieu teaching can be operationalised through the design of functional skill-rich classroom environments, the embedding of communication targets within daily routines such as morning circle, mealtimes, and transition activities, and the use of incidental teaching moments across all subject areas. Nwosu et al. (2025) documented that Nigerian student teachers completing practicum placements often encountered inadequate modelling of naturalistic teaching strategies, underscoring that future directions for milieu teaching implementation must include specific professional development modules within teacher education programmes, so that teachers learn to identify and exploit functional skill opportunities within everyday school life.

6. CHALLENGES TO IMPLEMENTING INNOVATIVE PEDAGOGIES IN NIGERIA

The implementation of innovative pedagogies for functional skills in Nigerian special education faces a cluster of interrelated challenges with deep historical roots. First, teacher preparation remains a persistent concern that can be traced to the colonial-era pattern of training teachers in academic content delivery while neglecting functional and inclusive pedagogy. Nwosu et al. (2025), in a study published in the British Journal of Special Education, examined the experiences of Nigerian student teachers in inclusive classrooms and found that introductory special education courses at universities are grossly inadequate, focusing on identification of special needs rather than differentiated functional skills pedagogies, a finding that reflects the long-standing marginalisation of practical pedagogical training within Nigerian teacher education.

Second, resource constraints are severe. Only 4.9% of Nigeria's national budget was allocated to education in 2023, well below UNESCO's recommended 15 to 20% (Glory Ifezue Foundation, 2025). Historically, Nigeria's education budget has fluctuated with oil revenue cycles, creating chronic instability in educational funding that disproportionately affects special schools and their students, limiting access to assistive technology, specialist personnel, and appropriate learning materials for functional skills instruction. Manir (2024), in a study of inclusive education policy implementation in Nigeria, identified inadequate and irregular financing as one of the most significant structural barriers, a pattern that will persist into the future without systematic reform of educational financing mechanisms.

Third, socio-cultural attitudes toward disability continue to marginalise children with functional skill differences. Historically, in many Nigerian communities, disability has been attributed to supernatural causes, a belief system that both delayed the establishment of educational provision and continues to reduce family engagement and community support for functional skills education. Onyishi (2022), in a study of teachers' use of inclusive education practices in Enugu State, found that attitudinal barriers among both teachers and

administrators impede effective implementation, and that these attitudes are shaped by cultural beliefs with deep historical roots that training alone cannot quickly transform.

Fourth, assessment systems within the Nigerian curriculum remain rigid, favouring written and spoken assessments that disadvantage students who develop functional skills through alternative modalities. Historically, this rigidity derives from the colonial inheritance of examination-oriented curricula designed to produce clerical workers rather than to support diverse functional development. Without assessment reform aligned with the functional skills philosophy, even well-designed communication and functional skill curricula will be undercut by high-stakes examination systems that do not recognise diverse forms of competence.

Fifth, there is a significant rural-urban divide. The majority of Nigeria's population, including many children with disabilities, lives in rural communities where specialist services, assistive technologies, and trained special education teachers are historically scarce. Bwoi and Nanjwan (2024) documented that economic deprivation compounds educational exclusion in Nigerian rural communities, with many rural families unable to access or sustain special education placements for their children, a situation that demands future directions rooted in community-based and low-technology functional skills models.

7. PATHWAYS FOR INTEGRATING INNOVATIVE PEDAGOGIES INTO NIGERIA'S CURRICULUM FRAMEWORK

Integrating innovative pedagogies into Nigeria's special education curriculum requires action at multiple levels of the system, informed by the historical lessons of previous reform cycles. At the macro level, NERDC should undertake a comprehensive review of the Adapted 9-Year Basic Education Curriculum to embed functional competence as an explicit, cross-cutting objective. Communication and functional skill goals should be articulated within the learning outcomes for every subject area and every year group, ensuring that students with functional differences are not excluded from curricular participation by the absence of appropriate pedagogical supports. Historically, Nigerian curriculum reform has been effective when it has involved broad stakeholder consultation, and future directions should build on this tradition.

At the meso level, state universal basic education boards, state special education boards, and the Universal Basic Education Commission should develop state-specific implementation plans that account for local resource contexts, drawing on historical evidence that one-size-fits-all federal mandates have consistently failed to address the functional skills needs of learners in Nigeria's diverse states and communities (NERDC, 2023). These plans should include timelines for teacher professional development, procurement of assistive communication devices, and interagency coordination with health and social welfare services, recognising that cross-sectoral collaboration has historically been essential for functional skills provision to extend meaningfully beyond school hours.

At the micro level, individual schools should be supported to develop functional skill-inclusive classroom environments. This includes physical organisation of classroom spaces to support AAC use, the creation of communication boards and visual supports tailored to local languages including Hausa, Yoruba, Igbo, and other Nigerian languages, and the establishment of collaborative planning time for special education teachers, general educators, and speech-language pathologists. The Individualized Educational Programme mechanism, referenced in the National Policy on Special Needs Education (FME, 2015),

should be strengthened as a primary vehicle for documenting, monitoring, and reviewing each student's functional skill goals, with clear review cycles that include family input and that draw on the historical evidence that family involvement is a key predictor of functional skill generalisation outside school settings.

8. TEACHER PROFESSIONAL DEVELOPMENT FOR FUNCTIONAL SKILLS PEDAGOGY

The success of any pedagogical innovation in special education depends fundamentally on the knowledge, skills, and dispositions of teachers. Historically, the transformation of special education practice has consistently been driven by dedicated teacher educators who translated emerging research into practical classroom applications, from Seguin's training of institutional teachers in the physiological method in the nineteenth century to the dissemination of applied behaviour analysis techniques in the 1970s and the spread of inclusive pedagogy following the Salamanca Statement in 1994. In Nigeria, teacher preparation for special education is widely regarded as insufficient (Nwosu et al., 2025), and future directions must address this deficit systematically within the teacher education pipeline.

Professional development for functional skills pedagogy should encompass several dimensions. Conceptual knowledge involves training teachers to understand the historical and theoretical basis of AAC, UDL, and naturalistic communication intervention and their relevance to Nigerian students' functional skill needs. Practical skills include the ability to select, programme, and implement AAC systems, to design functional skill-rich learning environments, and to embed functional targets within daily classroom routines. Collaborative skills involve learning to work effectively with speech-language pathologists, occupational therapists, and family members as part of a multidisciplinary team. Afolabi (2022) recommended that legal frameworks for special needs education in Nigeria be strengthened specifically to mandate minimum levels of specialist training for all teachers working in inclusive and special education settings, a future direction that would require sustained political will historically difficult to generate without strong advocacy pressure.

The national in-service teacher education infrastructure in Nigeria, which includes distance education through institutions like the National Open University of Nigeria and face-to-face professional development through colleges of education, provides a framework for scaling functional skills-focused professional development. Online modules in AAC implementation and UDL application could be developed in partnership with international organisations such as ASHA and CAST and adapted for Nigerian contexts, drawing on the historical tradition of distance education in Nigeria that dates to the correspondence education programmes of the colonial era and has evolved through successive technological generations (NOUN, 2021).

9. POLICY IMPLICATIONS

The findings of this review carry several important policy implications for Nigerian stakeholders. The Federal Ministry of Education should align the revised National Policy on Inclusive Education (FME, 2023) with a detailed implementation plan that specifically addresses functional skills as measurable educational outcomes, setting targets for communication specialists per region, minimum standards for functional skill-accessible classrooms, and percentage budget allocations for assistive communication technology. Historically, Nigerian education policy has been strongest on statement of intent and weakest

on implementation monitoring, and future policy instruments must therefore include robust accountability mechanisms to avoid repeating this pattern.

NERDC should revise curriculum documents to include mandatory functional competency strands within all special education syllabi and to provide sample lesson plans demonstrating how AAC, UDL, milieu teaching, and play-based approaches can be used to deliver these strands. The Discrimination Against Persons with Disabilities Act (FGN, 2018) should be more actively enforced, particularly its provisions regarding accessible learning materials and facilities, and all remaining states should be supported to domesticate the Act by 2026. Internationally, Nigeria should strengthen partnerships with UNESCO, UNICEF, and bilateral development agencies to secure funding for assistive technology procurement, teacher training, and functional skill-inclusive infrastructure, building on the historical precedent of the PLANE project as a model of constructive development partnership (Glory Ifezue Foundation, 2025).

CONCLUSION

Functional skills education for learners with disabilities is a field shaped by more than two centuries of philosophical debate, legislative development, and pedagogical innovation. From the early institutional experiments of Itard and Seguin through the community integration movements of the late twentieth century to contemporary evidence-based inclusive practices, each historical era has contributed insights that remain relevant to present-day challenges. For Nigeria, understanding this historical trajectory is not merely an academic exercise but a practical necessity: the structural challenges currently impeding functional skills provision, including inadequate teacher preparation, chronic underfunding, rigid assessment systems, and socio-cultural stigma, all have identifiable historical antecedents whose roots must be understood if future directions are to be designed on a sound evidence base.

This paper has argued that innovative pedagogies, specifically AAC, UDL, play-based learning, technology-assisted instruction, and milieu teaching, offer evidenced pathways for redressing the longstanding failure of Nigeria's educational system to provide adequate functional skills pedagogy for learners with disabilities. The integration of these approaches into Nigeria's curriculum organisation demands systematic reform at every level of the education system, from policy development and curriculum design at the federal level, through state implementation plans and school-based practice, to the professional knowledge and attitudes of individual teachers and the engagement of families and communities.

Future research should investigate the effectiveness of contextually adapted versions of these innovative pedagogies within Nigerian special schools and inclusive classrooms, generate local historical and empirical data on functional skill outcomes for students with different disability profiles, and explore the role of Nigerian languages and indigenous pedagogical traditions in the design of culturally relevant functional skill interventions. The urgency of this agenda cannot be overstated; every year that passes without systemic improvement represents a year of lost functional development for thousands of Nigerian children with disabilities.

RECOMMENDATIONS

Based on the historical analysis, current evidence review, and future directions identified in this paper, the following recommendations are offered:

1. The Federal Ministry of Education should develop a detailed, time-bound Functional Skills Inclusion Action Plan as a companion document to the 2023 National Policy on Inclusive Education, with specific targets for AAC provision, teacher training, and infrastructure improvement, informed by lessons from previous Nigerian policy implementation cycles.
2. NERDC should embed functional communication competency strands as mandatory learning outcomes across all adapted special education syllabi, from primary to junior secondary school level, and provide model lesson plans illustrating innovative pedagogical approaches that are contextualised within Nigeria's historical and cultural realities.
3. State Ministries of Education, through SUBEBs and UBEC, should allocate dedicated budget lines for the procurement of AAC devices, functional learning materials in Nigerian languages, and sensory resources for students with functional and communication differences.
4. Universities and colleges of education should redesign special education teacher preparation programmes to include at minimum two full semesters of coursework in functional skills pedagogy, covering AAC, UDL, milieu teaching, and play-based learning, supported by supervised clinical practice in both special and inclusive school settings.
5. The Federal Government should mandate and fund the deployment of one trained speech-language pathologist per cluster of special schools at local government level, as a minimum step toward closing the functional skills specialist gap that has historically disadvantaged Nigerian learners with disabilities.
6. Schools should establish multidisciplinary functional skills support teams comprising the class teacher, a special education specialist, a speech-language therapist or trained surrogate, and a parent representative, meeting at least termly to review individual student functional skill goals.
7. Assessment frameworks should be reformed to recognise and accommodate multiple modes of functional skill demonstration, including AAC device use, sign language, picture selection, and gesture, ensuring that high-stakes assessments do not disadvantage students with communication differences.

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