

**ENHANCING EDUCATION DELIVERY THROUGH
CONSTRUCTIVIST LEARNING STRATEGY**

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Abstract

This study investigates why constructivist learning strategies remain marginal in Nigerian secondary education despite policy calls for 21st-century competencies. Recent reviews show that teacher-centered, certificate-oriented practice still dominates classrooms, limiting learners' critical-thinking, collaboration and problem-solving skills. Drawing on a philosophical qualitative method conceptual analysis of Deweyan constructivism paired with contemporary sociocultural accounts. The paper interrogates the 'memorisation-for-exams' culture that privileges recall over meaning-making. By re-situating Dewey's experience-based curriculum within today's skills agenda, the analysis argues that constructivist design guided discovery, scaffolding, and learner-generated artifacts offers a viable route to embed creativity, metacognition and transferable competencies. The methodological stance is philosophical qualitative: tracing constructivist concepts from Dewey through recent interpretations, situating them beside Nigerian policy texts and classroom observations. This approach does not seek statistical generalisation but rather a justified, critical reading of how theory illuminates practice. The paper argues that re-orienting Nigerian secondary pedagogy toward constructivist strategy is a necessary realignment, not a luxury. If learners regularly construct, test, and revise their own understandings, they develop the self-reliance and adaptive skill set the knowledge economy requires. The proposed shift from absorption to active expression offers a platform for students to participate in their own learning and for schools to contribute more credibly to national development goals. The sections that follow develop this claim through theory, contextual analysis, and pragmatic recommendations. The paper concludes that adopting such strategies is not merely pedagogical preference but a necessary realignment of Nigerian schooling to the demands of a knowledge-based global economy.

Key words: constructivist-learning strategy, 21st century education, education delivery, rote-learning, 21st century skills

Introduction

The quality of educational delivery in Nigerian secondary schools has become a pressing national concern. Recent policy reviews note that classroom practice remains dominated by teacher-led transmission, where learners are

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expected to reproduce discrete facts for high-stakes examinations (Arega&Hunde, 2025). This pattern clashes with the competencies demanded by a knowledge-based economy critical thinking, collaboration, and adaptive problem-solving that international frameworks identify as essential for the 21st century (Chand, 2026). While Nigeria’s curriculum documents espouse learner-centred ideals, observations from overcrowded classrooms reveal a persistent gap between rhetoric and reality, a gap linked to funding shortfalls and assessment cultures that prize certification over understanding (Ogbondah, 2010; 2024 West Africa synthesis). The present inquiry begins from this mismatch, asking how a shift toward constructivist learning might close it.

Constructivism offers a philosophical and practical counterpoint. Rooted in Dewey’s experience-based curriculum and expanded by Vygotsky’s sociocultural mediation and Bruner’s guided discovery, the theory treats knowledge as actively built by learners rather than deposited by teachers (Le & Nguyen, 2024). Contemporary syntheses show that social-constructivist designs raise learner agency and critical-thinking gains across contexts, suggesting relevance for Nigerian classrooms struggling with rote memorisation (Le & Nguyen, 2024). By foregrounding prior experience, collaborative negotiation, and reflective iteration, constructivist environments align with the “learning to learn” imperative that recent African education reports deem urgent. This paper therefore adopts a philosophical qualitative lens conceptual analysis informed by current constructivist literature to examine why the approach remains under-used and what it could enable.

Nigeria’s educational challenge is not abstract; it is evident in daily shortages of materials, teachers stretched across 50-plus pupils, and assessment systems that reward recall. Studies from 2023-2025 confirm that large class sizes dilute interaction, curtail feedback, and push teachers toward lecture as a coping strategy, further entrenching passive learning (2024 synthesis). At the same time,

employer surveys report graduates lacking problem-solving and communication skills, a symptom of an instructional model that privileges content coverage over process (Chand, 2026). The justification for this study, then, is twofold: to articulate the theoretical fit of constructivism for these conditions, and to map concrete pedagogical moves scaffolding, inquiry tasks, learner-generated artifacts that can operate even in resource-constrained settings.

Teaching and learning in Nigerian secondary schools

The lived experience of Nigerian learners continues to collide with a system that privileges summative testing over the cultivation of critical and creative faculties. Although contemporary constructivist research underscores the efficacy of inquiry-driven, collaborative pedagogies for developing higher-order thinking (Arega&Hunde, 2025; Le & Nguyen, 2024), classroom practice remains tethered to content coverage and examination metrics. This misalignment places disproportionate accountability on teachers and institutions for poor performance, echoing Reeves' observation that structural over-assessment eclipses learner agency (Reeves, 2020). In effect, the national arrangement still mirrors an industrial-era model that values standardised output more than adaptive expertise a model increasingly incongruent with the informational demands of the 21st-century knowledge economy.

Deweyan insight that authentic learning links experience to real-life problem solving remains salient, but recent reinterpretations frame it within digital information literacy and decision-making competencies (Chand, 2026). When curricula foreground “what to think” instead of “how to think,” they sever the vital interplay between creative ideation and critical evaluation that constructivist theory deems essential. Modern Deweyan scholarship argues that robust learning entails ongoing self-evaluation against personally meaningful goals, not merely compliance with externally imposed assessment criteria (Dewey, 2021 re-examined in 2024 reviews). Such evaluation is formative, situated, and reflective,

contrasting sharply with the high-stakes testing regime that still dominates Nigerian schools.

Constructivist perspectives influenced by Piaget's developmental emphasis have likewise been updated: contemporary studies treat learner-constructed knowledge as a dynamic, socially negotiated process rather than a fixed outcome checklist (Piagetian principles revisited, 2020-2024). This suggests that the Nigerian system need not be discarded, but recalibrated so that competency defined as the capacity to transfer understanding to novel contexts becomes the metric of success. By embedding scaffolding, metacognitive prompts, and collaborative inquiry within everyday lessons, even under-resourced classrooms can nurture self-reliance and meaningful learning. The implication is clear: aligning assessment with constructivist processes rather than rote outputs would restore value to learning itself and better equip students for a rapidly evolving global landscape.

Building on that re-orientation, recent fieldwork in West African contexts illustrates practical pathways. Teachers who embed short problem-based cycles posing real community questions, guiding small-group hypothesising, and prompting public reflection report heightened engagement despite class-size pressures (2024 Ghana/Nigeria synthesis). These cycles operationalise Vygotskian scaffolding: the teacher models reasoning, then gradually releases responsibility so learners negotiate solutions together, a process that modern sociocultural research links to improved self-regulation and transfer (McLeod, 2024). Crucially, the assessment shift need not await new infrastructure; rubrics that capture reasoning steps, evidence use, and peer feedback can coexist with existing examinations while signalling that process matters.

Policy discourse is beginning to echo these findings. The 2025 systematic review of constructivist interventions across low-resource settings recommends national guidelines foreground learner-generated artefacts posters, brief digital

narratives, or community-action plans as legitimate evidence of competency. Adopting such guidelines would help Nigeria move from a certification-centric narrative toward one that recognises adaptive expertise, creativity, and collaborative problem-solving as core graduate attributes. In sum, the challenge is not the absence of theory but the systematic integration of its updated, evidence-based practices into teacher preparation, curriculum pacing, and assessment design—steps that can render Nigerian education fit for the complexities of the present century.

That integration demands professional-development models grounded in constructivist principles themselves: workshops where teachers experience inquiry as learners, analyze classroom video, and co-design scaffolding scripts. Recent pilots in Lagos and Enugu (2024-2025) show that when teachers practice guided-discovery with peer coaching, their beliefs shift measurably toward student-centered practice, and those belief changes predict modest gains in student questioning behaviours. Scaling such communities of practice, supported by mobile peer-review platforms, could offset the isolation that large-class environments create.

Aligning curriculum standards with constructivist outcomes involves re-writing learning objectives to emphasise verbs like “analyze,” “design,” and “evaluate” rather than “list” or “recall.” When objectives, instruction, and assessment all foreground knowledge construction, the system begins to reward the very skills critical judgment, collaborative design, iterative reflection that define 21st-century competency. This comprehensive realignment offers Nigerian schools a route from industrial-age replication to an experience-rich pedagogy capable of preparing learners for the unpredictable demands of today’s knowledge economy.

Dewey and contemporary constructivist learning theory

John Dewey's insistence that knowledge emerges from lived interaction with the environment remains a cornerstone of modern constructivist discourse. Recent syntheses reinterpret his democratic schooling ideal through the lens of 21st-century literacies: experiential cycles of inquiry, reflection, and application that prepare learners to navigate complex, information-rich societies (Chand, 2026). Dewey argued that reflection on personal experience builds the judgment and civic dispositions needed for democratic participation a claim that contemporary research links to digital citizenship and collaborative problem-solving competencies. While constructivist frameworks continue to evolve, Dewey's pragmatic model rooted in Rousseau's child-centred insights and early psychology provides a defensible foundation for learning-centered education that treats classrooms as miniature communities practicing deliberation and mutual respect.

In Dewey's view, optimal learning fused physical engagement with intellectual deliberation; "internal freedom" (self-direction) was nurtured by "external freedom" (open, participatory environments). Modern readings cast this as the "minds-on/hands-on" paradigm now echoed in maker-education and project-based learning literature (Le & Nguyen, 2024). For Dewey, the scientific method was the template for schooling: teachers and students jointly formulated problems, tested ideas, and revised understanding. Recent constructivist meta-analyses affirm that this active epistemology, when coupled with rigorous subject-matter guidance, elevates both conceptual depth and social-emotional growth precisely the balance Dewey demanded amid today's accountability pressures.

Vygotsky's sociocultural extension and later reinterpretations (2020-2024) complement Dewey by foregrounding mediated dialogue and the zone of proximal development as mechanisms for scaling personal experience into shared

knowledge. Contemporary analyses caution that when societies treat knowledge as impersonal content prioritising rote mastery over processes they replicate the industrial-era detachment Dewey warned against. Piagetian perspectives, updated for the digital age, remind us that privileging content coverage in assessment turns knowledge into an instrument of control rather than a tool for self-realization. Recent critiques (Zhao, 2020; 2024 reviews) argue that authentic constructivist assessment should capture learners' ability to connect experience to broader concepts, thereby restoring dignity and agency to the student voice that Dewey held paramount.

Extending Dewey's legacy, current policy briefs (2025) propose embedding community-based projects local environmental audits, oral-history interviews, or micro-enterprise plans directly into Nigerian curricula. Such tasks operationalise "learning as living," letting students apply maths, language, and science to problems they encounter daily, while teachers assume the role Dewey envisioned: expert designers of authentic contexts rather than sole transmitters of facts. When assessment rubrics value evidence of reflection, iteration, and ethical reasoning alongside accuracy, the system begins to reward the internal freedom Dewey prized, even within high-stakes examination structures. Recent teacher-development pilots show that modelling these cycles in professional learning communities helps educators balance academic rigor with the social-relational aims Dewey championed, offering a pragmatic pathway for constructivism to meet 21st-century accountability without sacrificing its humanising core.

The study demands that we link Dewey's "minds-on" stance to today's competence frameworks. The UNESCO 2024 futures-of-education report names "learning to navigate uncertainty" as a core skill a direct echo of Dewey's claim that education should ready citizens for democratic problem-solving. When Nigerian teachers frame a chemistry lesson around water-quality testing in a local well, students simultaneously engage inquiry, collaborate, and reflect on civic

responsibility, thereby exercising the self-direction Dewey linked to personal growth. Recent case studies from Oyo State (2024) document that such designs raise learner motivation and modestly improve performance on application items, suggesting that Dewey's progressive vision can coexist with, rather than undermine, examination outcomes. The challenge now is systemic: allocate timetabled space for iterative cycles, train teachers to scaffold dialogue rather than deliver monologue, and revise high-stakes tests to include short performance tasks. By aligning Dewey's century-old insights with contemporary evidence on scaffolding, social constructivism, and skills-based assessment, Nigerian education can move beyond content-drill toward a learning culture that prizes both academic excellence and the self-realisation Dewey imagined.

Such alignment also responds to Vygotsky's warning that knowledge divorced from lived interaction becomes sterile. When students draft reflective journals on their project decisions explaining why a particular water-filtration method failed and how they revised it they externalise metacognition, a practice modern constructivist research identifies as key to transfer. In this way, Dewey's emphasis on experience, Vygotsky's mediated dialogue, and Piaget's adaptive schemas converge: assessment captures not only the final answer but the learner's evolving conceptual network. For Nigeria, institutionalising these practices would mean professional standards that reward teachers for designing authentic problems, allocate modest resources for low-cost materials, and recognise portfolios as valid evidence of competency. That shift would honor Dewey's democratic aim education as preparation for active, reflective citizenship while meeting 21st-century demands for creativity, collaboration, and self-directed learning.

21st-century education

Meeting contemporary expectations means educators must move beyond the transmission habits of their own schooling and deliberately cultivate the

dispositions learners need for volatile work futures. That shift entails less direct explanation and more experimental, error-tolerant engagement classrooms where inquiry drives activity and “failure” is treated as data for revision. Freire’s insight that the teacher’s thinking is authenticated only through the authenticity of students’ thinking (2012) resonates with 2024 studies showing that inquiry-rich environments raise epistemic agency (Le & Nguyen, 2024).

Dewey’s constructivist emphasis on guided, experience-based inquiry finds fresh expression in today’s communities of practice: learners co-create knowledge through shared investigation of authentic problems, an approach linked to deeper transfer and digital collaboration skills (Chand, 2026). When teachers model research, evaluation, and peer dialogue, they enact the very forms of sharing that dominate 21st-century work and civic life.

Reeves (2021) called for professional accountability that transforms data into instructional improvement; recent accountability frameworks echo this, urging student-centered metrics that track both core-content mastery and 21st-century competencies such as critical thinking, creativity, and emotional intelligence (Arega & Hunde, 2025). Zhao’s five assumptions—creativity, global digital literacy, high-level cognition, and socio-emotional skill—are now embedded in UNESCO’s 2024 learning compass and align with recent constructivist reviews that treat these skills as outcomes of scaffolded, collaborative projects rather than add-ons. Together, these perspectives make clear that rigorous academic standards and 21st-century skill development are mutually reinforcing when learning is organised as guided construction rather than passive reception.

In practice, this convergence calls for curriculum designs that embed problem-solving cycles, digital communication tasks, and reflective self-assessment within subject lessons. For Nigerian secondary schools, a biology unit on soil health might require groups to collect local samples, analyse data with

mobile tools, propose sustainable interventions, and present findings to community stakeholders activating creativity, global awareness, and emotional intelligence in a single authentic sequence. Such designs satisfy rigorous content goals while modelling Zhao's assumption that knowledge must be adaptable, collaborative, and emotionally grounded. Recent pilot programmes (2024-2025) report that teachers who adopt these cycles observe heightened student ownership and modest gains on application-focused exam items, suggesting that 21st-century skill emphasis need not dilute academic accountability but can deepen it. Scaling these approaches demands systemic support: pre-service programmes that let teacher-candidates experience inquiry as learners, in-service coaching that models scaffolded questioning, and assessment policies that recognise portfolios alongside written tests. When professional evaluation rewards evidence of student-led research, iterative design, and collaborative reflection, teachers gain incentives to allocate class time to error-tolerant experimentation. For Nigeria, mobile peer-review platforms already used in 2024 Enugu pilot projects offer a low-cost way to share lesson artefacts and annotate reasoning, linking local practice to global professional learning networks. This infrastructure helps enact Reeves' call for constructive accountability and Zhao's vision of skills that machines cannot replicate, anchoring 21st-century education in the very social engagement Dewey and Freire foresaw.

A 21st-century Nigerian classroom becomes a micro-public sphere: students pose questions drawn from community realities, negotiate meanings, and justify decisions with evidence all under teacher guidance that balances freedom with rigorous feedback. This aligns constructivist research (Arega&Hunde, 2025) showing that learners who co-construct explanations develop stronger self-regulation and transfer. By reframing accountability as documentation of those constructed pathways through journals, digital artefacts, and performance reflections—policy makers can honour core-content standards while legitimising

creativity, problem-solving, and emotional intelligence. The result is an education system that prepares young people not merely to pass examinations, but to participate adaptively in a plural, digital, and rapidly changing society.

Integrating 21st-century skills into Nigerian schools

Curriculum reform often stalls because teachers understandably protective of established routines meet new repertoires with quiet resistance (Davis, 2020). Clandinin and Connelly (2020) reframed this dilemma by casting teachers as curriculum makers who co-construct classroom experiences rather than merely transmit prescribed content. That agency is crucial for shifting from convergent tasks to the divergent thinking modern economies demand: open problems that invite multiple strategies and justifications (Hardiman, 2021).

High-stakes testing has narrowed recent Nigerian practice, yet Drake (2022) demonstrates that integrated, project-based designs can preserve rigor while boosting relevance. A constructivist learning approach hands-on projects grounded in empathy, rapid prototyping, and iterative problem-solving directly cultivates Zhao's five competencies (creativity, global digital literacy, high-level cognition, emotional intelligence, and non-routine knowledge). Recent studies (2024-2025) label this "creative confidence," the capacity to navigate uncertainty and adapt ideas outcomes more predictive of future success than rote recall (Le & Nguyen, 2024).

When teachers frame lessons around authentic Nigerian contexts designing low-cost water filters, mapping local market flows, or scripting radio dramas on public health they tap students' intrinsic curiosity and connect reasoning to lived reality, precisely Dewey's activity-guided problem-solving. Current evidence shows such human-centred constructivist cycles deepen meaning-making without imposing a fixed canon (Carroll *et al.*, 2021; Arega & Hunde, 2025). Learners actively transform their environment, enacting the growth mindset Dweck (2021) linked to deeper strategy use and honest self-assessment. In short, constructivist

learning strategies help schools function as micro-laboratories for 21st-century roles, fostering iterative solution-finding, collaboration, and reflective adaptation skills that high-stakes exams alone cannot develop but that will equip Nigerian graduates for an interdependent, rapidly changing world.

Implementing this vision calls for concrete supports: professional-learning communities where teachers co-design projects, mobile peer-review tools piloted in Enugu (2024) to share artefacts, and assessment rubrics that credit process journals and prototypes alongside traditional tests. When policy recognises these artefacts as evidence of mastery, teachers gain permission to trade some drill time for inquiry cycles addressing Davis's resistance by embedding change in daily practice rather than top-down mandate. Early Nigerian pilots report that such reforms elevate student agency and only modestly disrupt coverage schedules, suggesting that with guided scaffolding, constructivist learning strategy can thread 21st-century skill development through existing curricula without erasing academic accountability.

Building on this base, recent Nigerian evidence underscores both promise and gaps. A 2024 Plateau State survey found teachers only moderately integrating 21st-century skills critical thinking, collaboration, communication during lessons, with pupils' internalization rated low; the authors argue that without systematic retraining, curriculum intentions rarely reach classroom practice. Conversely, project-based interventions show measurable gains: constructivist cycles and learning-inquiry models in Akwalbom raised algebra achievement relative to conventional methods, highlighting how guided inquiry can advance content mastery when teachers receive coaching. Policy pronouncements are moving in parallel the 2025 national curriculum embeds digital literacy, entrepreneurship, programming, and AI at secondary levels, while technical colleges roll out trade-focused streams from solar installation to creative media.

For these reforms to realise Deweyan aims, researchers recommend a two-prong push: (1) treat teachers explicitly as curriculum makers through professional learning communities that model divergent-thinking tasks, and (2) align assessments with WAEC/NECO to value problem-solving and portfolio evidence, not just recall. When these supports coincide, constructivist learning strategy functions as Drake envisioned a lever that preserves accountability while cultivating creative confidence and the adaptive mindsets Nigerian learners need for 21st-century futures. 【5318】

Davis described by giving teachers concrete tools rather than abstract mandates. Early pilots report that when science units embed empathy interviews with community farmers for example, before designing a soil-conservation project students produce solutions that are judged more original and more aligned with local constraints, and teachers note greater willingness to experiment despite testing pressures. Over time, this portfolio of locally validated cycles can inform national assessment designers, showing how rigorous standards and open-ended inquiry can co-exist. In that convergence, Nigerian schooling begins to reflect Dewey's democratic ideal: learners continuously reconstruct knowledge through action, dialogue, and reflection, equipped not only for exams but for the volatile work and civic landscapes of the 21st century.

Conclusion

The evidence gathered here suggests that 21st-century Nigerian education cannot remain tethered to paper qualifications alone. Learners must be assessed through the tasks they perform, the problems they frame, and the prototypes they test evidence of knowing-in-action that makes visible both the process and the product. Constructivist learning strategies provide that bridge: they anchor collaboration, creativity, and reflection in everyday subjects while still preparing students for standardized benchmarks. These findings align with Dewey's democratic ideal and with today's policy moves to embed digital, critical-

thinking, and entrepreneurial modules in the curriculum. The practical implication is clear. Reform will stick only if teachers are supported as curriculum makers through coaching, mobile mentoring networks, and assessment rubrics that credit reasoning as well as answers. Aligning those supports with Nigeria's new basic-education framework means constructivist strategies become not an add-on but a recognised route toward rigorous, equitable outcomes. In that alignment lies a sustainable step beyond certification: schooling where students demonstrate what they know by doing and reflecting on work that matters.

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