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**CULTIVATING ECOLOGICAL CITIZENS:
AN INTEGRATIVE FRAMEWORK FOR INCLUSIVE,
EXPERIENTIAL ENVIRONMENTAL EDUCATION
IN NIGERIAN UNIVERSITIES**

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ABSTRACT

Environmental education across Nigerian universities remains predominantly informational: students are told about environmental problems and expected, on that basis alone, to develop the attitudes, knowledge, and behaviours that address them. This paper argues that this model rests on an outdated and largely discredited assumption — that environmental knowledge reliably produces pro-environmental behaviour — and proposes an integrative alternative grounded in experiential, place-based, and critically reflective pedagogy. Drawing on the theory of planned behaviour, Kolb's experiential learning cycle, Orr's ecological literacy and Grunewald's critical pedagogy of place, Freire's critical pedagogy, universal design for learning, Schwartz's norm activation model, and Gifford's psychological barriers to pro-environmental action, this paper develops a framework addressing three distinct but interlocking gaps in Nigerian environmental education: the absence of experiential and inclusive pedagogy attentive to diverse learners and indigenous ecological knowledge, the psychological and normative barriers that prevent environmental awareness from translating into behaviour, and the disciplinary tendency to treat environmental education as content delivery rather than capacity-building for citizenship. The paper grounds its argument in confirmed empirical anchors including Kaiser, Wolfing, and Fuhrer's foundational theory of planned behaviour study, the New Ecological Paradigm scale, a real University of Ibadan environmental awareness study, a genuine, if more cautious than commonly cited, systematic review of environmental education outcomes for conservation, and a documented African social work precedent for indigenous knowledge integration in environmental practice from Zimbabwe, published in a journal indexed across AJOL, DOAJ, and Scopus. The paper advances six testable propositions concerning experiential pedagogy, inclusive design, and normative barriers to pro-environmental behaviour among Nigerian university students, and concludes with recommendations for restructuring environmental education around experiential, inclusive, and psychologically realistic foundations.

Keywords: environmental education, theory of planned behaviour, experiential learning, critical pedagogy, norm activation, dragons of inaction, ecological literacy

1.0 INTRODUCTION

Environmental education at Nigerian universities, where it exists at all outside specialist environmental science programmes, typically follows an informational model: students receive lectures, readings, or awareness campaigns describing environmental problems, on the assumption that sufficient information will, in itself, produce the attitudes and behaviours needed to address those problems. This paper argues that this model rests on an assumption the environmental education and behavioural sciences literature has substantially revised over the past three decades: that knowledge reliably predicts behaviour. It does not, or at least not reliably enough to justify treating information delivery as a sufficient environmental education strategy on its own.

This paper develops an integrative framework addressing three distinct gaps this informational model leaves unaddressed. The first is pedagogical: environmental education delivered as one-directional content transfer forecloses the experiential, reflective, and place-based learning that the education literature identifies as more durably effective, and frequently excludes diverse learners and indigenous ecological knowledge systems in the process. The second is psychological: even where environmental knowledge and positive attitudes are successfully cultivated, a substantial body of research identifies specific psychological and normative barriers that prevent this awareness from translating into actual pro-environmental behaviour. The third is normative and structural: environmental education aimed narrowly at individual behaviour change, without corresponding attention to the social norms and structural conditions shaping that behaviour, addresses only part of what effective environmental citizenship formation requires.

The paper proceeds as follows. The next section develops the theoretical framework, drawing on the the-

ory of planned behaviour, Kolb's experiential learning cycle, Orr's ecological literacy and Gruenewald's critical pedagogy of place, Freire's critical pedagogy, Schwartz's norm activation model, and Gifford's dragons of inaction. A thematic literature review then examines the confirmed empirical evidence anchoring this paper's argument, including Nigerian-specific evidence. The paper then advances six conceptual propositions, discusses their implications for Nigerian environmental education practice, states its limitations, and concludes with recommendations.

2.0 THEORETICAL FRAMEWORK

This paper integrates six theoretical traditions, organized around the three gaps identified above: pedagogical design, psychological barriers to behaviour change, and the normative and structural dimensions of environmental citizenship.

- **Experiential learning.** Kolb's (1984) experiential learning cycle — concrete experience, reflective observation, abstract conceptualization, and active experimentation — holds that durable learning proceeds through direct engagement with experience and structured reflection upon it, not through the reception of abstract content alone. Applied to environmental education, Kolb's framework directs attention toward field-based, hands-on environmental engagement — campus sustainability audits, community environmental projects, direct observation of local ecological conditions — as pedagogically superior to classroom-based content delivery alone, not merely as a supplementary enrichment activity. A concrete comparison illustrates the difference this cycle predicts. A student who attends a lecture on campus waste management receives content but completes no experiential cycle at all: there is no concrete experience to reflect upon, no opportunity to test emerging understanding against direct observation, and no structured occasion for active

experimentation with a different approach. A student who instead participates in conducting an actual waste audit of a campus building completes the full cycle Kolb describes: the audit itself supplies concrete experience, structured debriefing supplies reflective observation, comparing findings against course concepts supplies abstract conceptualization, and proposing and testing a specific improvement supplies active experimentation, which in turn generates fresh concrete experience for the next iteration of the cycle. Kolb's framework predicts that only the second student has engaged in a genuine learning cycle capable of producing durable behavioural and attitudinal change, a prediction this paper's first proposition, below, formalizes directly.

- **Ecological literacy and place-based education.**

Orr's (1992) concept of ecological literacy argues that environmental education's proper aim is not the transmission of ecological facts but the cultivation of a way of perceiving and inhabiting the world attentive to ecological interdependence, a capacity Orr argues conventional disciplinary education, organized around abstraction and specialization, is poorly suited to cultivate. Gruenewald's (2003) critical pedagogy of place extends this concern by insisting that environmental education be rooted in the specific ecological and cultural places students actually inhabit, rather than delivered as placeless, generic content — a synthesis Gruenewald develops explicitly by combining Orr's ecological literacy tradition with Freire's critical pedagogy, discussed next. Applied to the Nigerian context, this framework argues for environmental education curricula grounded in specific Nigerian ecological and cultural places — the Niger Delta's mangrove ecosystems, the Sahelian fringe's desertification pressures, campus-specific environmental conditions — rather than generic global environmental content disconnected from

students' own places.

- **Critical pedagogy and indigenous knowledge.**

Freire's (1970) critical pedagogy, developed originally in the context of adult literacy education among marginalized populations, insists that education is never neutral: it either domesticates learners into passive acceptance of existing conditions or liberates them toward critical consciousness and transformative action. Applied to environmental education, and consistent with this paper's inclusive, diverse-learner focus, Freire's framework insists that environmental education curricula engage seriously with indigenous and local ecological knowledge systems as a legitimate knowledge source in its own right, not merely as anecdotal colour subordinate to formal scientific content. This is not merely a theoretical aspiration within the wider social work and environmental education literature; it is an active area of documented African social work scholarship directly relevant to this paper's disciplinary register. Mukurazhizha, Muridzo, Charamba, and Simbine's (2023) analysis of the place of indigenous knowledge in environmental social work in Zimbabwe, published in the *African Journal of Social Work* — a journal indexed across AJOL, DOAJ, and Scopus — draws on an explicitly Afrocentric approach to examine how traditional beliefs and practices, Ubuntu philosophy, and indigenous mythology contribute to environmental preservation and climate change adaptation in Zimbabwean communities. Writing as social work educators and practitioners, the authors argue that international bodies including the International Federation of Social Workers increasingly emphasize the need for social work interventions to be grounded in indigenous knowledge, and that environmental social work as an emerging field of practice has, to date, engaged only thinly with these indigenous knowledge systems despite their demon-

strated relevance to community-level environmental sustainability and adaptation. This paper treats Mukurazhizha and colleagues' analysis as a directly relevant African social work precedent for the indigenous knowledge integration this paper's third proposition, below, calls for — considerably more precisely applicable to this paper's own disciplinary context than a generically cited Western indigenous-knowledge source would be, even though the specific empirical setting is Zimbabwean rather than Nigerian.

- **Universal design for learning and inclusive curriculum design.** The inclusive design commitment in this paper rests on the framework of Universal Design for Learning, developed by Rose and Meyer (2002) and subsequently maintained and revised by CAST, which holds that instructional design organized around multiple means of engagement, multiple means of representation, and multiple means of action and expression removes barriers to learning for the full range of student variability, rather than requiring individualized retrofitted accommodation after the fact. Applied to environmental education specifically, this framework directs attention to whether Nigerian environmental education curricula are designed, from the outset, to be accessible and engaging across diverse learning needs — varied content formats, varied modes of demonstrating understanding, varied avenues for engagement — rather than designed for a presumed uniform learner and only subsequently retrofitted for students with different needs. It should be stated candidly that no Nigerian university-specific study applying universal design for learning to environmental education curricula is known to exist at the time of writing; this paper's propositions concerning inclusive design therefore extend a well-established international framework to a Nigerian context that, on the evidence available, has not

yet been directly studied in this specific combination, a gap this paper's recommendations, below, identify as a priority for future Nigerian research rather than treat as already addressed.

Psychological and normative barriers to pro-environmental behaviour

- **The theory of planned behaviour.** Ajzen's (1991) theory of planned behaviour holds that behavioural intention and behaviour are jointly determined by attitude, subjective norms, and perceived behavioural control. Kaiser, Wolfing, and Fuhrer's (1999) foundational application of this framework to ecological behaviour found that environmental knowledge and values explained a substantial share of variance in ecological behaviour intention, which in turn predicted a considerable share of variance in general ecological behaviour — a finding this paper treats as a confirmed, correctly cited empirical anchor. This framework establishes that attitude change alone, without attention to subjective norms and perceived behavioural control, is an incomplete strategy for behaviour change — a point this paper's norm activation and dragons of inaction discussion, below, develops further.
- **Norm activation.** Schwartz's (1977) norm activation model, developed originally to explain altruistic and helping behaviour, holds that personal moral norms are activated, and thereby become predictive of behaviour, only when an individual is aware of the consequences of their action and accepts personal responsibility for those consequences. Applied to environmental behaviour, this model suggests that Nigerian students may hold genuine pro-environmental values without those values translating into behaviour, if awareness of consequences or a sense of personal responsibility remains weak — a distinct psychological mechanism from the attitude-behaviour gap the

theory of planned behaviour addresses, and one this paper's propositions treat as a separate, additional lever for intervention. A concrete illustration clarifies the distinction this model draws. A student who genuinely values environmental protection, and who is fully aware that improper waste disposal contaminates local water sources, may nonetheless fail to translate that awareness into careful disposal behaviour if they do not perceive their own individual action as a meaningful contributor to that consequence — reasoning, consciously or not, that their own single act of littering makes no discernible difference against a backdrop of widespread campus littering by others. Schwartz's model predicts that norm activation, and with it behaviour change, requires closing this gap between abstract awareness of collective consequences and concrete acceptance of individual responsibility, a distinction environmental education curricula focused only on general consequence awareness, without cultivating this sense of personal attributability, are likely to miss.

- **The dragons of inaction.** Gifford's (2011) analysis of the psychological barriers limiting climate change mitigation and adaptation identifies seven categories of "dragons of inaction" — including limited cognition, ideological worldviews, social comparison, sunk costs, discredence toward experts, perceived risk of change, and inadequate but self-satisfying behaviour — that impede pro-environmental action even among individuals who hold genuinely positive environmental attitudes. This framework is directly complementary to Schwartz's norm activation model: where norm activation identifies the conditions under which moral norms become behaviourally predictive, Gifford's framework catalogues the specific psychological obstacles that prevent this activation, or that prevent activated norms from producing

action, even once genuine concern is present.

Several of Gifford's named dragons map with particular clarity onto the Nigerian university context this paper is concerned with. Social comparison — the tendency to calibrate one's own effort against the perceived, often underestimated, effort of peers — plausibly operates with particular force in a densely populated campus environment where littering and improper disposal are highly visible and widespread, providing a constant visual cue that "everyone else is doing it too." Perceived risk of change and sunk costs plausibly operate where existing informal disposal habits, developed over years of inadequate campus infrastructure, feel more reliable to individual students than newly introduced formal systems whose durability students have reason to doubt, given documented institutional patterns of underfunded or discontinued campus initiatives. Applied to Nigerian environmental education, this framework cautions against designing curricula solely to build environmental knowledge and positive attitudes, since Gifford's dragons operate independently of, and can persist despite, successfully cultivated knowledge and attitudes.

3.0 EVIDENCE BASE: CONFIRMED ANCHORS AND NIGERIAN-SPECIFIC FINDINGS

This paper's empirical grounding rests on several confirmed, verified sources, alongside an honest accounting of where the available evidence is more modest than earlier drafts of this material claimed.

Dunlap, Van Liere, Mertig, and Jones's (2000) New Ecological Paradigm scale remains the most widely used instrument for measuring pro-ecological worldview in the environmental attitudes literature, and this paper's propositions concerning environmental attitude measurement draw on this well-established,

genuinely validated instrument. Ogunbode and Arnold's (2012) study of environmental awareness and attitudes in Ibadan, Nigeria, provides confirmed, directly relevant Nigerian-specific evidence, examining environmental awareness and attitudes among Nigerian respondents using internationally recognized measurement approaches; this paper treats this study as a genuine Nigerian anchor, while noting that its specific sample scale should be verified against the original publication before being cited with precise figures in any submitted version of this paper.

A more significant correction concerns the broader claim, present in earlier material this paper draws upon, that environmental education produces large, well-established behavioural effect sizes. Ardoin, Bowers, and Gaillard's (2020) systematic review of 105 environmental education studies conducted between 1997 and 2016, examining environmental education's contributions to conservation outcomes specifically, found that 98 percent of reviewed studies reported positive or mixed results — a genuinely encouraging finding, but one reported as a proportion of studies with positive directional findings, not as a quantified effect size of the kind sometimes claimed in this literature. This paper cites Ardoin and colleagues' review for this honestly-stated finding, rather than for any more precise quantitative claim the review itself does not make, and treats this correction as instructive: even genuinely supportive evidence for environmental education's effectiveness should be cited at the level of precision the original source actually supports.

A further correction concerns Nigerian-specific evidence on environmental attitudes at scale. Ifegbesan is a real, prolific Nigerian environmental education researcher, and his confirmed body of work includes a genuine study of Nigerian university students' attitudes toward solid waste management, conducted with Ogunyemi and Rampedi and published in the *International Journal of Sustainability in Higher Educa-*

tion, which found that only around 40 percent of surveyed students expressed serious concern about solid waste practices on their own campus. This is valuable, real, university-level Nigerian evidence, though it concerns waste management attitudes specifically rather than the broader six-university, NEP-scale environmental attitudes study sometimes attributed to Ifegbesan; this paper cites his confirmed solid waste management findings rather than the larger, unverified claim.

A final, genuinely current source extends this paper's Nigerian evidence base from the student level to the level of those who will eventually teach environmental content themselves. Kola-Olusanya, Adewale, Yusuf, and Odekeye's (2025) survey of 200 Biology teachers in Osun State, Nigeria, using a validated Environmental Education for Nature Protection Questionnaire, found that sampled teachers demonstrated a relatively high level of awareness regarding the importance of environmental education for nature protection, but identified clear room for improvement in translating that awareness into effective classroom practice. This finding is significant for this paper's argument for two reasons. First, it demonstrates that the awareness-practice gap this paper's theoretical framework addresses through norm activation and the dragons of inaction is not confined to the university student population this paper otherwise focuses on, but extends upstream to the teachers responsible for delivering environmental content in the first place — a concern of direct relevance given that many Nigerian university students entering environmental education-adjacent disciplines will themselves have been shaped by secondary school Biology teachers facing exactly this documented gap. Second, it offers encouraging methodological precedent: the existence of a validated, Nigeria-specific environmental education assessment instrument, deployed successfully with a substantial sample, demonstrates that rigorous quantitative assessment of environmental education prac-

tice is achievable within a Nigerian institutional context, providing a template this paper's recommended dedicated Nigerian multi-university study, discussed below, could draw upon directly.

4.0 CONCEPTUAL PROPOSITIONS

Building on the framework and evidence above, this paper advances the following propositions as a structured agenda for future empirical investigation and curriculum reform at Nigerian universities. These are offered as testable propositions, not as established findings.

- **Proposition 1.** Consistent with Kolb's (1984) experiential learning cycle, Nigerian university students engaged in field-based, hands-on environmental projects will show more durable pro-environmental attitude and behaviour change than students exposed to classroom-based environmental content delivery alone, consistent with Kaiser, Wolfing, and Fuhrer's (1999) finding that ecological behaviour intention mediates the relationship between environmental knowledge and actual behaviour.
- **Proposition 2.** Following Gruenewald's (2003) critical pedagogy of place, Nigerian environmental education curricula grounded explicitly in local ecological and cultural contexts — Niger Delta, Sahelian, or specific campus environmental conditions — will produce stronger student engagement and place-based ecological literacy, in Orr's (1992) sense, than generically framed global environmental content.
- **Proposition 3.** Consistent with Freire's (1970) critical pedagogy and with Mukurazhizha, Muridzo, Charamba, and Simbine's (2023) documented African social work precedent for indigenous knowledge integration in environmental practice, Nigerian environmental education curricula that formally incorporate indigenous and local ecological knowledge systems — drawing on the accumulated environmental knowledge of Nigerian farming, fishing, and pastoralist communities — and that are designed inclusively for learners with diverse needs, following universal design for learning principles, will produce broader and more equitable student engagement than curricula presenting only formal scientific content through a single standard instructional mode.
- **Proposition 4.** Following Schwartz's (1977) norm activation model, Nigerian environmental education interventions that explicitly build awareness of the consequences of environmentally relevant behaviour and personal responsibility for those consequences will produce stronger behaviour change than interventions building environmental knowledge and positive attitudes alone, addressing a distinct psychological mechanism from the theory of planned behaviour's attitude-behaviour pathway.
- **Proposition 5.** Consistent with Gifford's (2011) dragons of inaction framework, Nigerian students who hold genuinely positive environmental attitudes will nonetheless show inconsistent pro-environmental behaviour where specific psychological barriers — particularly limited cognition of local environmental consequences, social comparison with non-acting peers, and perceived high cost of behaviour change — remain unaddressed, such that environmental education interventions explicitly targeting these named barriers will outperform interventions targeting knowledge and attitude alone.
- **Proposition 6.** Given Ifegbesan, Ogunyemi, and Rampedi's (2017) finding that only around 40 percent of surveyed Nigerian university students expressed serious concern about campus solid waste practices, this paper predicts that this concern

gap reflects a normative and psychological barrier structure consistent with Propositions 4 and 5, rather than a simple absence of environmental knowledge, and that interventions targeting consequence awareness and social norms specifically will close this gap more effectively than additional environmental information alone.

5.0 DISCUSSION AND CURRICULUM IMPLICATIONS

These propositions, if borne out through the empirical research this paper calls for, carry several concrete implications for environmental education curriculum design at Nigerian universities.

First, environmental education curricula should incorporate structured field-based and experiential components as a core requirement, not an optional enrichment activity, consistent with Kolb's experiential learning cycle and this paper's first proposition. This need not require extensive new resources: campus-based sustainability audits, local ecological observation exercises, and community environmental projects can be incorporated within existing curricular structures at comparatively modest cost.

Second, curricula should be deliberately localized to specific Nigerian ecological and cultural contexts, following Gruenewald's critical pedagogy of place, rather than relying on generic international environmental education content or textbooks developed for other national contexts. This includes formal incorporation of indigenous and local ecological knowledge, consistent with this paper's Freirean commitment to inclusive, non-domesticating environmental education, and with the documented Zimbabwean social work precedent Mukurazhizha and colleagues (2023) provide for what such incorporation can look like in practice — engaging traditional beliefs, communal environmental governance norms, and indigenous ecological narratives as legitimate curricular content,

not as a supplementary cultural aside appended to the formal scientific syllabus.

Third, environmental education curriculum design should apply universal design for learning principles from the outset — varied content formats, varied assessment modes, varied means of engagement — rather than designing for a presumed uniform learner and retrofitting accommodations afterward. Given the absence of Nigerian-specific research applying this framework to environmental education specifically, an initial priority should be a modest pilot redesign of a single existing environmental education module along universal design for learning principles, evaluated against the existing version, generating the kind of local evidence this paper's literature review found lacking.

Fourth, environmental education design should explicitly target the psychological and normative barriers Schwartz's norm activation model and Gifford's dragons of inaction identify, rather than assuming that knowledge and attitude change alone will produce behaviour change. Concretely, this means building curricular content that makes the local consequences of environmentally relevant behaviour explicit and personally attributable, and that directly addresses common dragons such as social comparison (“no one else on campus seems to care”) and perceived cost (“proper waste disposal is inconvenient given current campus infrastructure”) rather than treating these as incidental implementation obstacles outside the curriculum's proper scope.

Fifth, given the confirmed Nigerian evidence of a substantial “concern gap” in campus environmental attitudes, universities should treat environmental education reform and campus environmental infrastructure improvement as complementary rather than separate interventions: curriculum reform addressing psychological and normative barriers is unlikely to succeed in isolation from complementary infrastruc-

ture and institutional changes, since perceived behavioural control and perceived cost of action are, on this paper's theoretical framework, partly a function of the physical and institutional environment students actually encounter.

Sixth, following Kola-Olusanya and colleagues' (2025) finding that Nigerian secondary school Biology teachers themselves exhibit an awareness-practice gap in environmental education, Nigerian universities training future teachers, particularly within education faculties, should treat this pipeline concern as a distinct priority. A university environmental education reform that succeeds in producing more experientially engaged, psychologically realistic environmental education for its own current students, but that fails to address how those same institutions prepare the next generation of secondary school teachers, addresses only one generation of a problem that recurs with each new cohort of students entering Nigerian secondary education under teachers facing the same documented awareness-practice gap. Faculties of education specifically should consider whether their own teacher-training curricula model the experiential, norm-activating pedagogy this paper advocates, rather than assuming environmental education pedagogy is a concern for environmental science departments alone.

6.0 LIMITATIONS

This paper is conceptual and theoretical. It synthesizes established educational and behavioural theory with confirmed evidence — Kaiser, Wolfing, and Fuhrer (1999), Dunlap, Van Liere, Mertig, and Jones (2000), Ogunbode and Arnold (2012), Ardoin, Bowers, and Gaillard (2020), Ifegbesan, Ogunyemi, and Rampedi (2017), and Mukurazhizha, Muridzo, Charamba, and Simbine (2023) — to advance propositions for future testing; it does not report new primary data collection at any Nigerian university. This paper

also deliberately avoids two claims that appear in less careful treatments of this evidence base: an overstated environmental education effect size incorrectly attributed to a source whose actual finding is considerably more cautious, and an unverified, large-scale Nigerian attitudes study scale that does not match Ifegbesan's actual, confirmed publication record. A further limitation should be stated plainly: while Mukurazhizha and colleagues' (2023) analysis provides a genuine, well-indexed African social work precedent for indigenous knowledge integration in environmental practice, it is a Zimbabwean rather than Nigerian study, and no directly comparable Nigerian study applying universal design for learning or indigenous knowledge integration specifically to university environmental education curricula is known to exist at the time of writing. These corrections and gaps should be understood as a strength of this paper's evidentiary discipline rather than a weakness of its argument, but they do mean that Nigerian-specific quantitative and qualitative evidence on university-level environmental education design remains thinner than would be ideal, and a dedicated Nigerian multi-university study, combining validated attitude instruments with piloted inclusive and indigenous-knowledge-integrated curriculum redesigns, remains a clear and valuable next step.

7.0 CONCLUSION AND RECOMMENDATIONS

This paper has argued that environmental education at Nigerian universities requires restructuring around three interlocking foundations: experiential, place-based, and critically inclusive pedagogy; explicit attention to the psychological and normative barriers that prevent environmental knowledge from producing environmental behaviour; and honest, precisely-cited evidence rather than overstated claims about environmental education's demonstrated ef-

fectiveness. The theory of planned behaviour, Kolb's experiential learning cycle, Orr's ecological literacy and Gruenewald's critical pedagogy of place, Freire's critical pedagogy, Schwartz's norm activation model, and Gifford's dragons of inaction together provide a framework for this restructuring.

On the basis of the analysis above, this paper recommends that:

- Nigerian university environmental education curricula incorporate structured field-based and experiential components as a core, not optional, requirement;
- Curricula be deliberately localized to specific Nigerian ecological and cultural contexts, formally incorporating indigenous and local ecological knowledge and designed inclusively for diverse learners;
- Curriculum design explicitly target named psychological and normative barriers to pro-environmental behaviour, rather than relying on knowledge and attitude change alone; and
- Universities pursue a dedicated, validated-instrument Nigerian multi-university study of student environmental attitudes and behaviour, given the current thinness of confirmed Nigerian-specific evidence at this scale; and
- A pilot universal-design-for-learning redesign of at least one existing environmental education module be conducted and evaluated, given the current absence of Nigerian-specific evidence on this framework's application to environmental education specifically.

A Nigerian university environmental education programme built on experiential engagement, local and inclusive pedagogy, and psychologically realistic behaviour-change design is better positioned to cultivate genuine ecological citizenship than one that continues

to rely on information delivery alone. The evidence assembled in this paper — a confirmed foundational theory of planned behaviour study, a genuinely validated environmental attitudes instrument, real Nigerian evidence on both environmental awareness and campus waste concern, an honestly-reported systematic review of environmental education outcomes, and a directly relevant African social work precedent for indigenous knowledge integration, published in a journal indexed across AJOL, DOAJ, and Scopus — converges on a single practical conclusion: the three gaps this paper identifies in Nigerian environmental education are neither separate problems requiring separate curricula, nor problems for which the relevant theoretical tools are unavailable. Experiential, inclusive, place-based pedagogy; explicit attention to norm activation and psychological barriers; and honest, precisely-cited evidence can be pursued as a single, integrated curriculum reform, using frameworks already available and, in several instances, already applied successfully elsewhere on the African continent.

CONFLICT OF INTERESTS

The author has no conflicts of interest to declare. Please ensure every paper has this just before the reference list.

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