STRATEGIC PLANNING AND WHOLE-INSTITUTION APPROACHES: A FRAMEWORK FOR MAINSTREAMING SUSTAINABILITY

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Abstract

Mainstreaming sustainability within educational institutions requires a systemic transformation that extends beyond curriculum reform toward a whole-institution orientation that integrates governance, operations, pedagogy, culture, and community relationships. This paper develops an evidence-based framework for embedding sustainability across school systems by combining strategic planning principles with established whole-school approaches to Education for Sustainable Development (ESD). Drawing on global research, competency frameworks, and implementation models, the paper conceptualises sustainability mainstreaming through eight domains: vision and leadership, curriculum and pedagogy, campus operations, staff capacity, student agency, governance and accountability, community partnerships, and monitoring and evaluation. The article also provides a staged implementation pathway and highlights the conditions necessary for institutionalisation. The proposed framework seeks to support practitioners, policymakers, and researchers in designing sustainable, equitable, and measurable ESD initiatives.

Keywords: *Whole-institution Approach, Whole-school Approach, Education for Sustainable Development, Strategic Planning, Sustainability Mainstreaming.*

Introduction

Educational institutions increasingly recognise sustainability as a core mandate, yet attempts to embed it meaningfully across school systems remain fragmented, inconsistent, and frequently short-lived. In many contexts, sustainability is still interpreted narrowly as environmental awareness activities such as tree-planting, recycling drives, or commemorative ecological events rather than as a transformative agenda that reshapes the structural, pedagogical and cultural foundations of education (Tilbury & Henderson, 2004). Such isolated interventions rarely precipitate deeper institutional change because they do not challenge the underlying assumptions and organisational routines that shape teaching, leadership, resource allocation and the general functioning of the school environment (Wals, 2011). The literature increasingly recognises that transformative sustainability learning requires a holistic integration across curriculum, governance, operations, staff development, assessment systems and community engagement. When sustainability is positioned merely as an add-on or confined to specific subject areas such as science or social studies, students receive fragmented messages that undermine the systemic, interconnected nature of sustainability challenges (UNESCO, 2024). In contrast, whole-institution approaches frame sustainability as a unifying lens through which the entire educational ecosystem is organised. This involves aligning pedagogy, school policies, resource management practices, and institutional culture with broader societal aspirations for ecological integrity, social equity, and economic resilience (Barth et al., 2007).

This systemic orientation aligns with global commitments to the Sustainable Development Goals (SDGs), particularly SDG 4, which positions education as a critical pathway toward achieving all other sustainability goals. Scholars consistently argue that transformative education not only develops learners' capacities but also reconfigures institutional structures to embody sustainable values and practices (Wiek et al., 2011). By cultivating systems thinking, problem-solving skills and participatory competencies, schools serve as microcosms of sustainable societies, modelling behaviours and relationships that extend beyond the classroom into the broader community (Wals, 2011). Within this discourse, strategic planning emerges as a vital mechanism for achieving coherence, direction, and long-term continuity. Strategic planning helps educational institutions move beyond sporadic initiatives toward structured and measurable sustainability commitments. Without a deliberate planning process, sustainability efforts tend to rely on the enthusiasm of individual champions often teachers, administrators or external partners whose departure or reassignment can derail momentum (Mogren, 2019). Strategic planning counteracts this

vulnerability by embedding sustainability in formal policies, development plans, and accountability structures, ensuring institutional ownership and resilience.

Obizue (2022), strategic planning creates the conditions for monitoring and evaluation, resource mobilisation, and stakeholder participation, which are crucial for sustainability mainstreaming. It aligns vision with action, enabling schools to prioritise interventions, develop capacity-building pathways, and integrate sustainability indicators into performance management (UNESCO, 2024). In this way, strategic planning becomes the bridge between philosophical commitments to sustainability and the practical realities of implementation across different institutional domains. In light of these developments, this paper argues that sustainable institutional change occurs at the intersection of strategic planning and whole-institution thinking. Both approaches are grounded in robust empirical research and reinforced by contemporary international frameworks on Education for Sustainable Development (ESD). The objective of this article is to develop and elaborate a comprehensive, scalable framework that guides schools in mainstreaming sustainability through coherent, integrated, and future-oriented institutional strategies. This framework serves as both an analytical tool and a practical guide for policymakers, researchers, school leaders and practitioners seeking to transform educational institutions into drivers of sustainable development (Obizue, Abu, Agba & Babatunde, 2025).

Literature Review: Rationale for Whole-Institution Approaches

Decades of scholarship in Education for Sustainable Development (ESD) reaffirm that sustainability challenges are multidimensional, interconnected and fundamentally value-laden. Consequently, learners must develop competencies that transcend disciplinary boundaries and equip them to navigate complex socio-ecological systems (Wiek et al., 2011). Traditional subject-based instruction, particularly when isolated from real-world contexts, is increasingly inadequate for equipping learners with systems thinking, anticipatory reasoning, ethical decision-making and collaborative problem-solving skills. To address this gap, whole-institution approaches create learning ecosystems in which sustainability becomes an experiential, embodied, and relational practice rather than a solely cognitive exercise (Barth et al., 2007). This experiential dimension is particularly critical. Rather than treating the school as merely a site for teaching sustainability, whole-institution approaches position the school itself as a learning system where students observe, practise and internalise sustainable behaviours through daily interactions with campus infrastructure, governance practices, and social norms (Wals, 2011). For instance, sustainable procurement, energy-use policies, waste reduction systems and biodiversity protection on the school grounds become pedagogical tools that reinforce classroom content, thereby strengthening cognitive, behavioural and affective learning outcomes (Tilbury & Henderson, 200).

International reviews further demonstrate that schools adopting whole-institution strategies tend to show higher organisational coherence, collaborative cultures and improved staff morale. This is

because whole-school sustainability initiatives require collective responsibility, shared leadership and long-term visioning elements that foster a sense of ownership and institutional identity (UNESCO, 2024). When curriculum, governance, infrastructure and school culture are aligned, sustainability is normalised as part of everyday educational practice rather than treated as a special project or extracurricular activity (Barth et al., 2007). Leadership, staff development and community participation emerge repeatedly as critical enablers. Research shows that schools with strong, visionary leadership are more likely to establish sustainability steering committees, allocate resources effectively and integrate sustainability into professional development programmes (Mogren, 2019). Similarly, teacher professional development supports educators in adopting innovative pedagogies, integrating interdisciplinary learning and cultivating sustainability competencies among students (Rieckmann, 2012). Community partnerships enrich this process by providing real-world learning contexts, mobilising external expertise and reinforcing the social relevance of sustainability education. For example, collaborations with environmental agencies, NGOs, local industries and municipalities broaden learning opportunities and embed schools within local sustainable development networks (UNESCO, 2024). Altogether, the literature converges on the view that whole-institution approaches offer a practical, theoretically grounded and empirically supported pathway for achieving transformative sustainability in education. These insights provide the foundation for the framework developed and presented in the later sections of this paper.

Conceptual Foundations of the Framework

According to (Obizue, Enomah & Onyebu, 2025), the proposed framework for mainstreaming sustainability through whole-institution approaches is anchored in three complementary bodies of scholarship, each contributing to its conceptual and operational robustness. First, global policy instruments on Education for Sustainable Development (ESD) emphasise that sustainability should permeate all educational functions, from governance and management to curriculum and community engagement. For example, the UNESCO ESD for 2030 roadmap explicitly positions whole-institution approaches as a strategic priority, advocating for structural reforms and leadership engagement to ensure that sustainability becomes embedded in organisational culture rather than treated as a peripheral concern (UNESCO, 2024). This integrated perspective underscores the need for comprehensive institutional strategies that align mission, vision, operational policies, and learning outcomes with broader societal goals.

Second, competency-based frameworks provide a theoretical foundation for what sustainability education should achieve at the learner level. Wiek et al. (2011) identify a set of key sustainability competencies, including systems thinking, anticipatory competence, strategic competence, normative competence, and interpersonal competence, which together form the epistemic core of ESD. These competencies require learning environments that mirror the complexity and interconnectivity of real-world socio-ecological systems. By cultivating these competencies,

schools prepare students not only to understand sustainability challenges but to actively participate in solutions, engage in ethical reasoning, and collaborate effectively in diverse social contexts (Wiek et al., 2011; Barth et al, 2007). Third, empirical studies examining whole-school sustainability implementation offer insights into the enabling conditions that support long-term change. Research consistently highlights the importance of leadership continuity, participatory governance, sustained teacher professional development, school-community partnerships, and iterative monitoring and evaluation processes (Mogren, 2019). Lessons from these studies inform the operationalisation of the framework, emphasising distributed leadership, systematic capacity-building, and integrated evaluation mechanisms to ensure the durability and adaptability of sustainability initiatives (Rieckmann, 2012). Taken together, these three knowledge streams provide both the normative rationale and practical guidance for designing a framework that integrates sustainability holistically across all school functions.

A Framework for Mainstreaming Sustainability Through Whole-Institution Approaches

Vision and Leadership

A strong and coherent sustainability vision is foundational for institutional transformation. Leadership commitment directly shapes institutional culture, sets strategic priorities, and determines the allocation of resources necessary for sustainability initiatives to succeed (Tilbury & Henderson, 2004). Effective leaders articulate a clear sustainability mission, embed sustainability goals in the school's development plans, and designate coordinators or committees to oversee implementation. Beyond formal mechanisms, leadership also fosters a culture of shared responsibility and encourages innovative practices across departments, helping to ensure that sustainability is not dependent on isolated individuals but becomes embedded in collective organisational routines (UNESCO, 2024). Evidence indicates that leadership engagement correlates strongly with staff motivation, program continuity, and student outcomes in sustainability education (Mogren, 2019).

Curriculum and Pedagogy

Integrating sustainability into curriculum and pedagogy ensures that learners develop both the knowledge and the competencies needed to navigate complex socio-ecological systems. Pedagogical approaches such as interdisciplinary learning, project-based instruction, and place-based education are widely acknowledged as effective strategies for connecting theory with real-world sustainability challenges (Jabareen, 2012). Curriculum mapping and cross-departmental collaboration further enhance coherence, ensuring that sustainability principles are reinforced across subjects rather than siloed within individual courses (Barth et al., 2007). The sustainability competencies framework proposed by Wiek et al. (2011), provides guidance for designing learning

outcomes, instructional strategies, and assessment tools that foster systems thinking, anticipatory reasoning, and ethical engagement.

Campus Operations as Learning Laboratories

The physical campus offers a unique opportunity for experiential learning, serving as a "living laboratory" where operational practices and pedagogical activities are integrated (Tilbury & Henderson, 2004). Operational interventions such as energy efficiency programs, water management initiatives, waste reduction systems, and biodiversity projects can be linked directly to student inquiry and classroom learning. Research shows that when students engage with campus sustainability practices, their environmental behaviours and understanding of systems thinking improve significantly (European Commission input, 2022). Aligning operations with pedagogy not only strengthens sustainability culture but also reinforces the principle that sustainability is lived and practised, not just studied (UNESCO, 2024).

Staff Capacity and Professional Development

Teacher competence is a critical determinant of success in whole-institution sustainability efforts. Professional development programs help educators deepen their understanding of sustainability concepts, adopt innovative pedagogical strategies, and integrate interdisciplinary approaches (Rieckmann, 2012). Effective programs often include mentoring systems, professional learning communities, and performance appraisal mechanisms that recognise leadership and innovation in sustainability education (Mogren, 2019). Capacity-building initiatives reduce resistance to change, enhance confidence, and foster a culture of continuous learning, positioning teachers as agents of institutional transformation (Barth et al., 2007).

Student Agency and Engagement

Students are not passive recipients in sustainability education; they are central actors in shaping school culture and implementing sustainable practices (Wals, 2011). When students participate in decision-making, lead projects, and organise sustainability initiatives such as environmental clubs, energy audits, and awareness campaigns, they develop strategic, interpersonal, and problem-solving competencies (European Commission input, 2022). Empowering students to take initiative strengthens their sense of agency and aligns with transformative learning principles that prioritise active engagement, reflection, and real-world problem solving (UNESCO, 2024).

Governance, Policy, and Accountability

Governance systems play a pivotal role in embedding sustainability across institutional structures. Whole-institution approaches integrate sustainability into school policies, strategic plans, procurement guidelines, and annual reporting frameworks (Tilbury & Henderson, 2004).

Incorporating performance indicators and mechanisms for community representation ensures accountability and transparency while sustaining initiatives beyond leadership transitions (Holst, 2025). Strong governance frameworks support continuity, facilitate resource allocation, and encourage institutional learning, making sustainability a core operational value rather than a peripheral agenda.

Community Partnerships and Stakeholder Collaboration

According (Obizue, Chukwuemeka & Iwezu, 2025), collaboration with external stakeholders enriches sustainability learning and enhances institutional capacity. Partnerships with local organisations, environmental agencies, municipalities, and industry create authentic learning opportunities, facilitate co-design of curriculum activities, and provide avenues for service learning (Finnegan, 2023). Schools embedded in supportive community networks are more resilient, capable of sustaining initiatives, and able to demonstrate tangible social and environmental impact (Tilbury & Henderson, 2004).

Monitoring, Evaluation, and Learning

Monitoring, evaluation, and learning (MEL) systems are essential for iterative improvement, adaptive management, and institutional accountability. Sustainability transformation is inherently nonlinear, requiring mechanisms that can capture both qualitative and quantitative data to inform decision-making (Wiek et al., 2011). Structured reflection through annual audits, student assessments, staff reviews, and policy evaluations strengthens institutional learning, ensures evidence-based adaptation, and consolidates sustainability gains (UNESCO, 2024). Empirical studies highlight that schools with robust MEL systems demonstrate greater resilience and deeper integration of sustainability principles (Mogren, 2019).

Implementation Pathway

Implementing sustainability through a whole-institution approach requires a carefully phased strategy that allows schools to manage complexity while building institutional momentum. A phased implementation approach acknowledges that systemic change is nonlinear and iterative, requiring time for cultural adaptation, capacity building, and alignment of organisational processes (Tilbury & Henderson, 2004).

The **initial phase** typically involves visioning, stakeholder mapping, and pilot initiatives. Visioning exercises facilitate the articulation of a shared sustainability mission, while stakeholder mapping identifies key actors both within the school (e.g., administrators, teachers, students) and externally (e.g., local community groups, NGOs, municipal authorities) whose engagement is crucial for success. Pilot projects serve as practical testbeds for sustainability interventions, allowing schools to experiment with innovative practices in manageable contexts. These early-

stage activities generate evidence of feasibility, showcase tangible results, and foster enthusiasm among staff and students for broader institutionalisation (Tilbury & Henderson, 2004).

The **scaling phase** builds on these early successes, leveraging strategic planning to align policies, budgets, and professional development systems with sustainability goals (European Commission input, 2022). This phase often requires formal integration of sustainability objectives into school development plans, resource allocation processes, and professional learning programs. Alignment ensures that sustainability initiatives are embedded within institutional structures rather than remaining dependent on ad hoc projects or individual champions (Mogren, 2019). Moreover, this stage involves broadening participation across departments, encouraging cross-curricular collaboration, and connecting operational practices such as energy management, waste reduction, and sustainable procurement to pedagogical objectives (UNESCO, 2024).

The **institutionalisation phase** is achieved when sustainability principles are fully embedded into governance structures, performance indicators, and organisational culture (Holst, 2025). At this stage, sustainability becomes part of routine decision-making, long-term planning, and staff appraisal systems, reflecting a mature whole-institution orientation. Institutionalisation also implies the development of mechanisms for continuous evaluation and adaptive learning, ensuring that sustainability practices evolve in response to changing environmental, social, and pedagogical contexts (Wals, 2011). Schools at this stage are characterised by distributed leadership, active student participation, engaged staff, and strong community partnerships, collectively sustaining a culture of transformation rather than isolated interventions. A phased approach ensures that implementation is **manageable, iterative, and evidence-informed**, reducing the risk of initiative fatigue and enabling schools to learn and adapt from experience. This aligns with models of transformative learning and organisational change, which emphasise the importance of incremental cultural, structural, and procedural reforms for long-term sustainability integration (Wals, 201).

Barriers, Equity Considerations, and Limitations

Despite the compelling evidence supporting whole-institution approaches, multiple barriers can impede successful implementation. Common obstacles include **inadequate funding**, which restricts the acquisition of necessary resources and infrastructure; **limited teacher preparation**, which constrains the effective integration of sustainability concepts into pedagogy; **competing academic priorities**, which often position sustainability initiatives as secondary to core curriculum demands; and **leadership turnover**, which can undermine continuity and institutional memory (Rieckmann, 2012). These challenges underscore the need for strategic planning, clear governance structures, and systemic capacity-building to maintain momentum over time (Tilbury & Henderson, 2004). **Equity considerations** are essential in ensuring that whole-institution sustainability strategies do not exacerbate existing disparities. Resource-constrained schools,

particularly in rural or underfunded urban settings, may face disproportionately greater difficulties in implementing comprehensive sustainability programs (Barth et al., 2007). Contextual adaptation is therefore critical, requiring flexible frameworks that respect local capacities, cultural values, and social conditions. Strategies should be inclusive, ensuring that all students, staff, and community members benefit from sustainability initiatives rather than concentrating advantages among well-resourced groups (Holst, 2025). Moreover, **limitations in empirical evidence** must be acknowledged. While numerous case studies and pilot projects document positive outcomes, longitudinal, causal evidence on the impact of whole-institution sustainability approaches on student competencies, organisational change, and community outcomes remains limited (Holst, 2025). Further research is necessary to quantify learning gains, assess behavioural outcomes, and evaluate the scalability and adaptability of the proposed frameworks across diverse socio-economic and cultural contexts. Nevertheless, despite these barriers and limitations, the proposed framework offers a robust foundation for research, practice, and policy. Its emphasis on phased implementation, participatory governance, strategic planning, and iterative evaluation ensures both flexibility and durability, supporting systemic change that is responsive to local conditions while aligned with global sustainability objectives (Wals, 2011; UNESCO, 2024).

Conclusion

Strategic planning, when combined with whole-institution approaches, provides a powerful and practical pathway for mainstreaming sustainability in educational institutions. By aligning curriculum, pedagogy, governance, operational practices, and community engagement, schools can create coherent and transformative learning environments that prepare students to navigate the complex social, environmental, and economic challenges of sustainable development. The eight-domain framework presented in this paper encompassing vision and leadership, curriculum and pedagogy, campus operations, staff capacity, student agency, governance, community partnerships, and monitoring and evaluation offers actionable guidance for policymakers, school leaders, and researchers seeking to institutionalise ESD at scale. Its phased implementation pathway ensures that initiatives are manageable, evidence-informed, and capable of adapting to diverse institutional and socio-cultural contexts. For sustainability aspirations to translate into **durable educational transformation**, continued empirical validation, equitable resourcing, professional development, and sustained leadership commitment are essential. Schools that successfully integrate these elements not only enhance student learning outcomes but also contribute to wider societal transformation, modelling sustainable practices and cultivating the competencies needed for future generations to thrive in an increasingly complex and interdependent world.

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