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Education for Sustainability: Meaning, History, Strategies and Practices

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ABSTRACT

Education for Sustainability (EfS) equips learners to meet today's complex environmental, social, and economic challenges through essential knowledge, skills, values, and attitudes for sustainable development. This article offers a comprehensive literature review of EfS, drawing on peer-reviewed studies, policy documents, and influential books from 2000 to 2024 to synthesize its key concepts, history, core competencies, and implementation methods. The review uses thematic analysis to highlight leading frameworks, such as UNESCO's Education for Sustainable Development and Wiek et al.,'s competency models, revealing both strengths and gaps. Results underscore the importance of integrating sustainability holistically through strategies like the Whole School Approach and participatory, learner-centered teaching methods including cooperative learning and systems thinking. The article also reflects on enduring challenges, such as applying complex competencies in classrooms, the need for ongoing teacher development, and resource limitations, while stressing the necessity of locally adapted and equitable EfS strategies. By connecting theory and practice, this review guides curriculum development, teacher education, and policymaking to nurture learners ready to advance sustainability worldwide.

Keywords: Education; Sustainable Development; Education for Sustainability; Strategies; Practices

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INTRODUCTION

The 21st century presents unprecedented global challenges that threaten both environmental sustainability and human welfare. International collaborative action is essential to address these challenges and ensure a suitable standard of living for all people. In the context of accelerating climate change, biodiversity loss, and social inequalities exacerbated by the post-pandemic recovery, the urgency of reorienting education toward sustainability has never been greater. With over 1.8 billion learners globally and education systems consuming significant resources, the ecological footprint of educational institutions alone necessitates sustainability integration (UNESCO, 2022). Moreover, as catalysts for societal change, educational institutions have a multiplicative impact on sustainability transitions (Laurie et al., 2016). Despite growing recognition of education's importance in fostering sustainability, current literature presents a significant fragmentation between theoretical frameworks and practical implementation strategies. This disconnect hinders educational institutions from effectively translating sustainability principles into transformative learning experiences.

The evolution of Education for Sustainability reflects an increasingly sophisticated understanding of education's role in addressing global challenges. Beginning with the Decade of Education for Sustainable Development (DESD) from 2005 to 2014 (UNESCO, 2005), UNESCO established a foundation that evolved into the more targeted Global Action Programme (GAP) from 2015 to 2019 (UNESCO, 2014), and currently the comprehensive Education for 2030 framework from 2020 to 2030 (UNESCO, 2020). The Incheon Declaration and subsequent UNESCO initiatives emphasize education as both a fundamental human right and a strategic pathway for attaining the Sustainable Development Goals (SDGs) (UNESCO, 2017). At national levels, policies such as India's National Education Policy (NEP 2020) aim to integrate sustainability principles into educational systems, aligning with SDG 4 while fostering cultural identity, social responsibility, and global citizenship.

Education for Sustainability (EfS) draws on diverse intellectual traditions, including environmentalism, social justice advocacy, and indigenous knowledge systems. This rich tapestry has shaped EfS into a multifaceted approach that not only emphasizes protecting the biophysical environment but also fosters social reasoning, ethical deliberation, and consensus-building skills among learners. These intellectual origins create productive tensions within the field, especially between approaches that seek to change behaviors through instrumental means and those that emphasize critical thinking and learner agency (Vare & Scott, 2007). Recognizing both dimensions as essential, EfS encompasses a broad range of educational practices, such as environmental education, ecological literacy, climate education, social justice education, and global citizenship education. These approaches converge on a shared goal: cultivating transformative learning experiences that empower individuals to embrace sustainable lifestyles and actively engage in their communities.

Despite an expanding body of research and policy attention, significant gaps remain in the field's comprehensive understanding and practical implementation. Existing studies often concentrate on isolated aspects such as curriculum design, pedagogical methods, or competency frameworks without integrating these elements into a unified overview that reflects their interconnections and collective impact. Furthermore, limited exploration has been devoted to synthesizing how theoretical foundations, historical evolution, competencies, and educational strategies together inform effective curriculum development, teacher training, and policy formulation across diverse global contexts.

This article addresses these gaps by conducting a literature review spanning publications from 2000 to 2024. Guided by influential frameworks from UNESCO and Wiek et al., it offers a holistic analysis structured around five key sections: conceptual foundations, historical development, key competencies, implementation strategies, and best practices. By weaving these components into an integrated narrative, this study seeks to bridge the often-fragmented divides between theory and practice in EfS. The insights provided aim to support educators, policymakers, and researchers in designing educational experiences that foster an equitable, resilient, and thriving society for present and future generations, ultimately advancing the global sustainability agenda.

OBJECTIVES

1. To examine the notion of education for sustainability and its history.
2. To identify the key competencies.
3. To identify the strategies and practices adopted for integration of sustainability in education.

METHODOLOGY

This article uses a broad literature review to examine how Education for Sustainability (EfS) has developed and is put into practice in schools today. The research involved systematically searching leading academic databases like ERIC, Scopus, Web of Science, and Google Scholar, focusing on works published in English between 2000 and 2024 that detail

EfS concepts, essential skills, teaching methods, and practical strategies. The selection process prioritized high-quality, peer-reviewed studies, key books, and major policy documents, while excluding non-academic or unrelated materials. The most relevant sources were then analyzed thematically, allowing the article to compare different frameworks, highlight recurring themes and gaps, and thoughtfully assess the strengths and limits of existing research. Findings are shared in a narrative format and, where helpful, with summary tables to make the results accessible and clear. Overall, this transparent and thorough approach ensures the review not only summarizes existing knowledge, but also offers meaningful guidance for educators, policymakers, and researchers seeking to advance sustainability in education.

Meaning of Education for Sustainability

Sustainable development education emerged in1990s as a successor to environmental education, as emphasized in Agenda 21, the 1992 UNCED report. Agenda 21 emphasizes education, public awareness, and training with a focus on youth and children's roles in sustainable development (UNESCO, 1997). Education is vital for developing moral and environmental awareness, values, abilities, and behaviors that support sustainable development and facilitate effective public participation in decision-making (UNESCO, 2002). The Bruntland Commission Report outlines sustainable development as a parity between needs of present and ability of future generation to meet theirs (UNESCO, 2020).This calls for a rethinking of ecosystems as well as information, skills, values, and awareness- more than just political agreements, financial incentives, and technology solutions. Bell (2016) and UNESCO (2014b) emphasize the need for significant changes in public and academic attitudes towards global issues covered by SDGs to effectively address environmental, social, and economic problems. Education plays a crucial role in this process, with Education for Sustainable Development (ESD) aiming to shape a better tomorrow for all. Integrating content, outcomes, pedagogy, and the learning environment, ESD is a lifelong learning process that improves the cognitive, behavioral, social, and emotional aspects of learning (UNESCO 2014; 2020; 2022)

ESD is clearly acknowledged in the SDGs as a part of Target 4.7 on education, which states

> *"By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (United Nations, 2015, pp. 17).*

Wiek et al., (2011), states that education for sustainability encompasses social, economic, and cultural aspects in addition to environmental education. Thus, education for Sustainability is holistic approach to education that aims to achieve the SDGs and promote a sustainable society by equipping learners with knowledge, prowess, values, and attitudes to make decisions on environmental integrity, economic viability, and a just society (UNESCO 2017). It enhances learning's cognitive, social, emotional, and behavioral dimensions by integrating sustainable development into the curriculum and fostering values-driven learning, critical thinking, and problem-solving (UNESCO 2014b, 2020; Wamsler, 2020). It addresses local and global issues using everyday language(s) and focuses on the interconnectedness of ecological, social, and economic systems. Critical components of sustainability education include environmental literacy, social justice, equity, systems thinking, critical thinking and problem-solving, interdisciplinary learning, citizenship, and civic engagement. These components aim to foster a deep understanding of sustainability issues and inspire individuals to take action towards creating a more equitable, resilient, and sustainable world. To advance the ESD agenda GAP (UNESCO, 2017) has identified five action areas: mainstream ESD into education and sustainable development policies; a complete change in learning and training spaces; strengthen instructors' capacities; empower youth; accelerate sustainable solutions at local level with an aim to create an enabling environment. Based on the above discussion it is clear about Education for Sustainability (EfS) that it is a futures-oriented educational approach focusing on protecting environments and creating a just world. It goes beyond imparting knowledge to enable informed decisions and sustainable solutions. Empower individuals to tackle global challenges through developing values, skills, and agency and by promoting critical thinking, systems thinking, and action-oriented learning to understand and navigate interconnected systems rather than focusing solely on isolated problems or symptoms.

HISTORY OF ESD

Environmental movements of the 1960s and 1970s raised awareness of urgent environmental challenges and the need for revolutionary action, where Education for Sustainability started. Thus, Education for Sustainability (EfS) has developed through a series of influential global initiatives and milestones (Table 1), each extending the concept's reach and depth in educational contexts:

Table 1: Historical Background of ESD

Sl. No.	Year	Key Points
1.	1987	The Brundtland Report, also known as 'Our Common Future,' is a proponent of sustainable development that balances the present's requirements and future generations' capacity to meet theirs.
2.	1992	The Rio Summit emphasizes the role that education play in promoting sustainable development, addressing environmental issues, and conserving biological diversity.
3.	2000	The Millennium Development Goals, issued by the UN to address issues like hunger, poverty, and environmental degradation, placed a strong emphasis on education as a vital element of sustainable development.
4.	2002	The Johannesburg Summit proposed a Decade of Education for Sustainable Development (DESD), with UN General Assembly Resolution 57/254 designating DESD and UNESCO as lead agencies from 2005-2014.
5.	2005	The United Nations DESD 2005-2014 aimed to reorient global education towards sustainable living and work by encouraging individuals.
6.	2009	The Bonn Declaration from UNESCO World Conference on ESD emphasized ESD as a future investment and life-saving measure, empowering people to effect change.
7.	2012	The United Nations Conference on Sustainable Development aimed to advocate education for sustainable development and integrate it into education beyond the UN DESD.
8.	2014	Global Action Programme (GAP) on ESD (2015-2019) launched in UNESCO World Conference in Aichi-Nagoya, Japan on ESD, to accelerate sustainable development at all levels and areas of education, focusing on five priorities.
9.	2015	The Sustainable Development Goals and 2030 Agenda aimed to promote sustainable development by 2030, with targets 4.7, 12.8, 13.3, and 13.3 focusing on education, awareness, and climate change. Incheon Declaration on Education 2030 and the GAP on ESD aimed to transform lives through education.
10.	2017	Resolution 72/222 of UN General Assembly acknowledges ESD's role in accomplishment of Sustainable Development Goals (SDG) on quality education and other sustainable development objectives.
11.	2019	The UNESCO General Conference's 40th session focused on adopting a framework for implementing ESD beyond 2019 (ESD for 2030) from 2020-2030.

Source: Based on UNESCO 2020

Despite notable progress, Education for Sustainability (EfS) continues to face significant challenges that shape its ongoing development. Although global initiatives have set ambitious goals, the practical integration of EfS in schools remains uneven due to limited resources, inadequate teacher training, and pressured curricula. The expansion of EfS from a primarily environmental focus to include social, economic, and cultural dimensions adds valuable complexity but also creates difficulties for schools especially those with fewer resources in balancing these priorities and translating them into clear learning outcomes. Additionally, while many EfS frameworks promote universal competencies, meaningful implementation requires adapting these to local cultures, knowledge systems, and community contexts, striking a balance between global standards and local relevance. Moreover, EfS aspires to foster critical thinking and learner agency beyond mere behavior change, yet in practice, many programs still focus on surface-level actions like recycling, underscoring the need to build teacher capacity and nurture reflective learning cultures. Finally, persistent disparities in access mean that marginalized and underserved students often face barriers to fully benefiting from sustainability education, calling for inclusive, context-sensitive policies and practices that enable equitable participation for all learners.

Key Competencies for Sustainability

The rise of technology and globalization has introduced new challenges, such as increased individualization, societal diversity, economic and cultural uniformity, information availability, and complexity. According to Weik et al., (2011), competencies are vital for self-organization in complicated contexts encompasses cognitive, emotional, volitional, and motivational components. These competencies are developed through experience and reflection and are influenced by performance. The emancipatory ESD approach identifies essential competencies for learners to become sustainable citizens, focusing on insight analysis, collective decision-making, and accountability for present and future generations (UNESCO, 2014; Brundiers et al., 2021). Researchers are increasingly studying the interrelated facets of ESD and related competencies. De Haan's (2006; 2010) Gestaltungskompetenz framework emphasizes the importance of critical competencies for individuals to change their way of living and contribute in community sustainability. These competencies include acquiring knowledge openly, thinking forward, interdisciplinary, dealing with convoluted

information, cooperating in decision-making processes, coping with individual and collective predicaments, motivating oneself and others, reflecting on one's principles, referring to equity in decision-making, planning autonomously, and showing empathy for the disadvantaged. Wiek et al., (2011) framework comprises of five competencies: systems thinking, strategic, anticipatory, normative, interpersonal, and updated integrated problem-solving competence in 2016 (Weik et al., 2016 as cited in Brundiers et al., 2021). Rieckmann (2012) and Lozano et al., (2017) identified competencies related to pedagogical approaches, including systems thinking, interdisciplinary work, anticipatory thinking, justice, responsibility, ethics, critical thinking, interpersonal relations, empathy, communication, strategic action, personal involvement, assessment, evaluation, and tolerance for ambiguity and uncertainty. Despite the variations, the global discourse on ESD usually agreed on the essential sustainability competencies for sustainable development. To think and act in a way that promotes sustainable development, one must possess specific competencies:

The key competency frameworks in Education for Sustainability (EfS) provide a well-rounded approach that moves beyond simple knowledge acquisition to emphasize essential skills and attitudes such as systems thinking, anticipatory abilities, collaboration, and ethical reflection. These competencies prepare learners to engage effectively with complex, interconnected sustainability challenges through participatory and action-oriented learning. However, translating these broad and sometimes abstract competencies into everyday classroom practice presents significant challenges. For instance, competencies like normative reflection dealing with values and ethics are difficult to teach and assess using traditional methods, and many educators lack the training or resources to implement them fully. Moreover, competency models often assume a universal approach to learning, which may overlook cultural diversity and local contexts, necessitating flexible adaptation to different educational settings. The difficulty in reliably assessing such skills further complicates their integration. Despite clear policy endorsements, many schools continue to rely predominantly on rote learning and standardized assessments, limiting the uptake of transformative competency-based education. To address these obstacles, ongoing teacher professional development focused on reflective pedagogy, the integration of competencies across curricula rather than as isolated add-ons, and exploration of context-specific implementation strategies are critical. Ultimately, fostering a culture of critical reflection among educators and students is vital to shift EfS from surface-level activities toward meaningful, lasting change in knowledge, skills, and values, empowering learners to become informed and responsible agents of sustainability.

Table 2: Key Competencies associated with Sustainability

Sl. No.	Key competencies	Description
1.	Systems thinking competency	The competency to comprehend relationships, assesses complex systems, comprehend their interconnections, and deal with ambiguity.
2.	Anticipatory competency	The competency involves managing risks and changes, assessing repercussions, evaluating multiple futures, developing visions, and using precautionary principles while nurturing personal visions and putting the precautionary principle into practice.
3.	Normative competency	Understanding and considering norms and values, as well as negotiating sustainability principles and purpose in the face of inconsistencies and equivocal knowledge, are all part of this competency.
4.	Strategic competency	The competency to plan and implement orginative initiatives that support sustainability on both local and global scale.
5.	Collaboration competency	Competency of learning from others, acknowledging and respecting their needs, opinions, and behaviour, being sensitive, resolve group problems, and promoting participatory problem-solving.
6.	Critical thinking competency	Competency to inquire accepted beliefs, customs, and viewpoints; to consider own principles, attitudes, and behaviour; and to participate in discussions on sustainability.
7.	Self-awareness competency	In local as well as global society, having the ability for self-reflection, continuous assessment, and emotional control is essential.
8.	Integrated problem-solving competency	The ability to use several frameworks for problem-solving to tackle difficult sustainability problems and integrate this expertise to create workable, just, and fair solutions that advance sustainable development.

Source: Based on UNESCO 2018

Strategies and Practices to Foster Education for Sustainability

The Global Action Programme (GAP) on Education for Sustainable Development, launched by UNESCO, aims to bring education and sustainable development closer together by reshaping education to equip individuals with the essential skills, values, and attitudes for positive sustainable development contributions (UNESCO, 2017). This involves embedding sustainability throughout learning activities and schedules to reinforce its importance. Education for Sustainability (EfS) broadly integrates sustainability principles into school curricula and culture, encouraging teacher development, practical projects, and active community participation so students can apply what they learn to real-world challenges. A key policy focus is on the Whole School Approach (WSA), also known as the Whole Institution Approach, which UNESCO and other international organizations recommend for embedding sustainability in all aspects of school life from governance and curriculum to partnerships with families and community outreach (UNESCO, 2018; 2020). The WSA fosters a sustainability culture by "helping students live what they learn and learn what they live" (UNESCO, 2020), providing authentic learning experiences that connect classroom knowledge to everyday life.

The Whole School Approach's power lies in its capacity to involve the entire school community cohesively, creating a shared commitment to sustainability values and practices beyond isolated lessons. However, this approach requires strong leadership, sustained teacher training, and adequate resources needs that present challenges in many under-resourced schools. Without these supports, sustainability efforts risk remaining superficial or treated as extra tasks rather than becoming an embedded part of daily school culture.

Education for Sustainability (EfS) aims to transform educational culture by adopting a sustainability-oriented approach that focuses on long-term thinking, personal growth, and active citizenship. It embraces a holistic, future-oriented, and interdisciplinary methodology, empowering learners to become engaged, critical citizens through learner-centered, action-oriented, and transformative pedagogies (UNESCO, 2018; Lewis et al., 2019).Within this strategic framework, a variety of teaching practices play a crucial role in translating high-level policies into meaningful, real-world learning experiences. Learner-centered pedagogy emphasizes autonomy where learners actively construct knowledge and critically reflect on their own understanding. The action-oriented approach encourages learning through doing and reflecting on personal experiences, which enhances knowledge acquisition and competence development. Transformative learning supports learners in questioning and reshaping their worldviews, fostering disruptive thinking and collaborative knowledge creation (Tilbury, 2011).

Tilbury's review (2011) underscored the importance of Education for Sustainable Development (ESD) learning processes that promote critical reflection, value clarification, and systems thinking. Effective curricula foster interactive environments that encourage self-directed learning, collaboration, problem-solving, and the cultivation of sustainability competencies. This shift calls for a move from traditional teacher-centered lessons to student-centered learning that also incorporates creative elements such as arts to enhance engagement and innovation (UNESCO, 2012; 2014b). Tejedor et al., (2019) proposed five key learning approaches that are especially effective in EfS contexts: case studies, problem-based learning, simulation games, project-oriented learning, and service learning. Additionally, Lozano et al., (2019) categorize twelve pedagogical approaches into three groups highlighting diverse educational aims:

1. Universal-broadly applicable approaches include lectures, case studies, interdisciplinary team teaching, mind and concept mapping, and problem-based learning, which can be applied across various disciplines and contexts.
2. Community and social justice approaches focus on social justice and community engagement, featuring methods like community service learning, jigsaw/interlinked teams, and participatory action research.
3. Environmental education approaches derive from environmental sciences, including eco-justice and community-based education, place-based environmental education, supply chain/life cycle analysis, and traditional ecological knowledge.

Based on the literature reviewed (Tilbury, 2011; UNESCO, 2018; Lozano et al., 2019; Tejedor et al., 2019; Wamsler, 2020; Wang, 2022; Cornet et al., 2024) the following teaching practices are integral to advancing EfS:

1. **Experiential Learning:** Experiential learning emphasizes practical experiences, real-world applications, and problem-solving tasks. It entails a cyclical process of experiencing, reflecting, conceptualizing, and applying knowledge, leading to deeper understanding, personal growth, and practical competencies. It acknowledges cognitive and affective dimensions of learning, allowing learners to construct meaning and connect theory and practice.

2. **Cooperative Learning:** An educational method in which students work together in small groups to complete tasks or achieve common goals. It places strong emphasis on collaboration, communication, and mutual support, fostering more profound understanding, critical thinking, and social skills development. It encourages shared responsibility for learning outcomes and promotes a positive, inclusive classroom environment.
3. **Systems Thinking:** Systems thinking is a comprehensive approach to understanding and addressing complex problems, focusing on interconnected components and feedback loops. It encourages effective problem-solving and decision-making and is incorporated into educational practices to deepen students' understanding of complex systems and their dynamics.
4. **Project-Based Learning:** It is a teaching method influenced by constructivism focusing on personal experiences and structures. It allows students to develop mental networks, fostering meaningful relationships with the environment and society. It is essential for integrated knowledge implementation and problem-solving, placing students at the center and empowering them.
5. **Community Engagement:** An experiential teaching strategy that integrates community service with the curriculum, promoting academic development through social action. It involves active student participation and coordination between institutions. Its practices include addressing community needs, fostering interpersonal relationships, allowing collaborative tasks, analyzing institutional context values, and involving all participants in the evaluation.
6. **Simulation:** Simulation is a teaching strategy replicating the context, promoting experiential learning and the development of communication skills, group work, cognition, and meta cognition. It has its roots in dramatization and can be applied to realism in the classroom. Simulation games provide context knowledge and social and educational understanding and prepare individuals for similar situations.
7. **Lecture:** A lecture is a teaching method where an expert or instructor delivers information to an audience. It involves verbal communication of knowledge, concepts, ideas, or instructions on a specific topic. Lectures can be structured and delivered formally, such as in a classroom or auditorium. The main goal is to impart knowledge, stimulate critical thinking, and facilitate learning.
8. **Inquiry-Based Learning:** An educational method that encourages active exploration and questioning, fostering curiosity, critical thinking, and problem-solving skills. It enables learners to engage with content by asking questions, seeking answers, and connecting to real-world contexts. This approach empowers students to drive learning processes, leading to deeper understanding and knowledge retention.
9. **Case studies:** A case study is a strategy that presents a real-life problem, allowing students to discuss, analyze, and propose solutions. Case studies can be individual or collective activities, providing various learning opportunities. They can be simple or complex, requiring detailed documentation and inquiry into other sources of information.
10. **Problem-based learning (PBL):** Teaching strategy where students, under tutor supervision, analyze information to solve problems. It emphasizes critical analysis and problem-solving skills, with the tutor as a facilitator. PBL aims to equip future professionals with intellectual problem-solving tools and skills, highlighting students' responsibility, transdisciplinary nature, and the importance of self-evaluation and peer evaluation.
11. **Class Discussion:** Class discussions facilitate information transfer between pupils and teachers by incorporating diverse life experiences into the curriculum. They enrich teaching by incorporating sustainability observations from students' neighborhoods. ESD skills, such as oral and written communication, are developed through discussions, focus enhancement, active listening, and building on others' ideas.
12. **Storytelling:** Storytelling is a powerful teaching method that effectively conveys sustainability ideas, drawing from various sources like events, history, literature, and personal experiences. It has been used for generations, promoting moral values, cultural preservation, and respect for heritage and the environment. It adds a human element to information, benefiting auditory learners.

All these practices are most effective when embedded in a supportive school culture that aligns with the Whole School Approach (WSA), a systemic strategy that integrates sustainability into leadership, governance, curriculum, teaching, operations, and community partnerships (UNESCO, 2020). This approach ensures that sustainability education is not a disconnected add-on but a lived experience permeating all aspects of school life. Effective implementation demands strong leadership, teacher professional development, adequate resources, and ongoing reflective assessment to foster continuous improvement. When done well, these strategies and pedagogical methods collectively prepare learners to navigate and act within the complex social, ecological, and economic systems shaping today’s and tomorrow’s world.

CONCLUSION

Education for Sustainability (EfS) has grown from a narrow focus on the environment into a rich, forward-thinking approach that embraces the full complexity of our social, economic, and ecological worlds. This article has taken a close look at EfS's journey—tracing its roots, clarifying its essential competencies, and exploring proven strategies and teaching methods that help bring sustainability to life in classrooms and communities. Through this exploration, it's clear that progress in EfS is real, but so are the challenges. International frameworks, such as UNESCO's Global Action Programme and the Whole School Approach, offer bold roadmaps and visions. However, turning these ideas into everyday practice is not always straightforward: many schools and teachers still face limited resources, lack of ongoing training, and pressure to stick with traditional, exam-driven methods. As a result, the promise of EfS can be diluted or unevenly realized across different contexts. At the same time, the variety of teaching approaches highlighted here including cooperative learning, systems thinking, project-based learning, storytelling, and more demonstrate practical, powerful ways to make sustainability engaging and meaningful for students. These approaches work best when supported by strong leadership, a school culture committed to continuous learning, and assessments that recognize growth in skills like problem-solving, collaboration, and critical reflection.

Looking ahead, EfS must stay responsive. Future research and school practice should explore how sustainability competencies can be developed in varied cultural and community settings, particularly for learners who have been historically marginalized or under-resourced. Developing better ways to assess these broad, lifelong skills and not just academic knowledge remains a key goal. Moving forward also means investing in teacher development, building more inclusive and creative school environments, and strengthening connections with families and local communities. It is through these combined efforts guided by critical self-reflection, adaptability, and a commitment to justice and equity that Education for Sustainability can truly empower today's learners to shape a more fair, resilient, and sustainable world for all. By weaving together both theory and hands-on strategies, this article serves as a guide for educators, policymakers, and researchers striving not just to inform classrooms, but to inspire real, lasting change toward sustainability.

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