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# Integrating transformative learning approaches in higher education for sustainable development

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The idea that education plays a crucial role in global development, particularly through the concepts of Higher Education for Sustainable Development (HESD) and Transformative Learning (TL), has gained significant attention in research, policy, and practice over the past few decades. Theoretically grounded in the principles of creative and deep learning, transformative learning involves the development of key competencies such as critical thinking, creativity, self-reflexivity, and individual awareness. Education for Sustainable Development (ESD) has evolved within international policy discussions as a key mechanism for achieving the United Nations Sustainable Development Goals (SDGs). Shaped mostly by UNESCO's initiatives, namely the UN Decade of Education for Sustainable Development (UNDESD, 2005–2014), and the Global Action Programme (GAP) on ESD (2015–2019), the ESD agenda has been introduced through five priority action areas, and the ESD for 2030 Framework (2020–2030), as part of the UN 2030 Agenda for Sustainable Development. International policy frameworks – particularly those framed by UNESCO – emphasize education's potential to foster values, competences, and forms of agency required for sustainable and just societal transitions. However, ESD faces profound challenges, not only in developing competencies such as critical and adaptive pedagogies and participatory teaching methods but also in addressing structural barriers within higher education, particularly those imposed by neoliberal policies. As a response to these tensions, this paper proposes an analytical framework that integrates UNESCO's five ESD priority action areas with Wals's four dimensions of transformative learning (transcultural, transgenerational, transdisciplinary, and transgeographical). The framework provides a critical perspective to examine how higher education can move beyond normative or instrumental interpretations of sustainability towards more emancipatory, systemic, and transformative approaches. By using a hermeneutic and conceptual-framework analysis of UNESCO policy documents and scholarly literature on ESD and TL, the paper presents the evolution of ESD and identifies limitations in its current implementations. The paper outlines key challenges and offers policy perspectives for embedding critical transformative learning approaches in higher education environments.

### KEYWORDS

ESD, higher education, policy frameworks, qualitative analysis, sustainability

## Introduction

“If we humans have become victims of our own paradigmatic inadequacies in a manner that now threatens the very sustainability of life on earth, then higher education is duty-bound to do all it can to transform prevailing epistemic assumptions and to liberate human and social development in the further pursuit of the considered and inclusively responsible life.” (Bawden, 2008: 65).

In the last decade, the world has faced unprecedented social, environmental and economic crises with far-reaching consequences. A growing sense of urgency signals the need to shift prevailing trajectories of global development toward more sustainable and resilient futures. As nations respond to climate change and systemic instability, many have adopted strategies aligned with “green deal” agendas that seek to reconcile economic growth with environmental limits (Dryzek, 2013). Within this broader transition, education has been increasingly recognized as a crucial driver for societal transformation by equipping individuals and communities with the knowledge, skills, and values necessary for sustainability (Bina and Pereira, 2020; Wals and Corcoran, 2012; Varela Losada et al., 2022).

Yet the role of education in society remains contested. While education is expected to foster transformative learning and empower citizens, in many societal contexts higher education systems continue reproducing neoliberal logics, reinforcing marketizations, and sustaining existing inequities (Jickling and Wals, 2008; Hlatshwayo and Moloi, 2024; Del Cerro Santamaría, 2020). This tension raises critical questions about whether higher education can meaningfully contribute to sustainability transitions without rethinking its epistemic, institutional, and political foundations.

Higher education institutions (HEIs) influence sustainability not only through teaching and research, but also through broader economic, cultural, and policy impacts (Filho Leal, 2011; Findler et al., 2019). Without substantive change, educational systems risk remaining maladaptive agents of “business as usual” (Huckle and Wals, 2015), perpetuating what Sterling (2021) warns is “a dystopian future that nobody wants.”

Education for Sustainable Development (ESD) has emerged at the intersection of two processes: the increasing integration of sustainability into education, and the recognition of the transformative potential of learning in global sustainability efforts (Leicht and Byun, 2018; Leicht and Byun, 2021: 90). At the international scale, UNESCO took the leading role in shaping this agenda through initiatives such as the UN Decade of ESD (2005–2014), the Global Action Programme (2015–2019), and the ESD for 2030 framework (2020–2030).

Yet significant gap remains between policy aspirations and conceptual understanding of the role of TL and ESD in critical reconsideration of the epistemic, structural, and political conditions of higher education. The purpose of this paper is to address this gap by developing a conceptual framework that

cross-references UNESCO’s five ESD priority action areas with Wals (2006), Wals (2011) four dimensions of transformative learning. The framework aims to engage with critical perspectives of ESD, and propose directions for embedding emancipatory transformative learning in higher education settings. The paper argues for reimagining higher education as a public good that cultivates the capacities required for sustainable and just futures.

## Design/methodology/approach

This study employs a hermeneutic interpretative approach to analyze international policy documents and scholarly literature on ESD and TL. This approach enables a critical examination and reflection of the underlying assumptions and discursive shifts in ESD and TL within the evolving global ESD agenda. The hermeneutic analysis complements with a conceptual analysis to propose an integrative analytical framework for transformative Higher Education for Sustainable Development (HESD).

Academic sources for the conceptual framework were identified through a targeted literature review from Scopus, Web of Science, and Google Scholar. Keyword search included “Education for Sustainable Development,” “transformative learning,” “higher education sustainability,” and “sustainable education.” Sources were selected based on conceptual relevance rather than empirical research insights, consistent with the aims of a conceptual-analytical study. UNESCO and UN policy documents were selected using the following criteria: importance in shaping ESD policy discourse, relevance to transformative learning, sustainability competences and SDGs, as well as their endorsement by UNESCO or UN bodies in full-text format.

The units of analysis thus include: conceptual definitions of ESD, UNESCO’s ESD priority action areas, transformative learning dimensions, institutional frameworks, and sustainability-related pedagogical models in higher education.

The analytical framework is developed through several steps. First, conceptual building blocks are identified from UNESCO’s five priority action areas for Education for Sustainable Development (ESD) and Wals’s four dimensions of transformative learning. These concepts are then applied through hermeneutic thematic coding of policy documents to map how sustainability, learning, and transformation are articulated, followed by cross-referencing the transformative learning dimensions with the ESD priority areas. As an outcome, these insights are turned into a diagnostic and generative framework that identifies structural challenges and policy opportunities for transformative higher education for sustainable development (HESD).

Sustainable Education (SE) is used in this paper to denote a broader philosophical paradigm emphasizing ecological thinking, relationality, and systemic awareness (Sterling, 2001). Education for Sustainable Development (ESD), by contrast, refers to the

internationally coordinated, policy-driven framework promoted by UNESCO. Thus, SE provides a conceptual foundation, while ESD represents its institutionalized policy expression.

## Evolution of education for sustainable development: UNESCO's framework

“A truly transformative education should build on what communities, families, parents, and children treasure most, and respond to local, national, and global needs, cultures, and capacities.” (United Nations, 2022).

Education for Sustainable Development (ESD) has evolved over several decades as a fundamental component of international education policy, with UNESCO as its principal advocacy actor. ESD is conceptualized as a holistic approach embedding sustainability principles across educational systems, from governance and curriculum to pedagogy and university practices. Its purpose is not only to expand knowledge but also to cultivate agency, critical thinking, and action for the SDGs.

The conceptual basis of ESD can be traced back to international efforts in environmental education (EE) during the 1970s. The 1972 Stockholm Conference on the Human Environment marked a significant moment in recognizing the interdependence of human activities and environmental sustainability. The 1977 Tbilisi Conference (UNESCO and UNEP) articulated foundational principles of environmental education, emphasizing interdisciplinary learning, ethical responsibility, and action orientation. These early efforts established a broad framework for sustainability in education, which later evolved into ESD (UNESCO, 2013; UNESCO, 2018). *Our Common Future* (WCED - World Commission on Environment and Development, 1987) framed sustainable development as intergenerational responsibility focusing on the role of education. This report influenced global sustainability discourse and drafted the future agenda of ESD, as necessary educational reforms for the support of sustainable development. The Earth Summit (UN, 1992) further formalized education's role via Agenda 21, Chapter 36, calling for: integration of sustainability across educational systems, teacher training reform, public awareness efforts, and cross-sectoral cooperation.

The 2002 Johannesburg Summit established the UN Decade of ESD (2005–2014) under UNESCO leadership (United Nations, 2002). In 2005, UNESCO launched the UNDESD, marking a significant step toward embedding sustainability within education systems across the world. The primary objectives of the Decade included strengthening collaboration among ESD advocates, enhancing the quality of sustainability education, supporting countries in integrating ESD into their education policies, and contributing to the achievement of the Millennium Development Goals (MDGs). In the mid-decade,

UNESCO convened the World Conference on ESD, with the Bonn Declaration, highlighting the quality and inclusive education, lifelong learning, and systemic integration of ESD into educational policy (UNESCO, 2009).

UNESCO's final Decade report *Shaping the Future We Want*, emphasized the need for structural monitoring and deeper institutional commitment (UNESCO, 2014a). This guided the development of the Roadmap for Implementing Global Action Programme (GAP) on ESD, establishing five priority action areas: advancing policy integration, transforming learning environments, building educator capacity, empowering and mobilizing youth, and accelerating sustainable solutions at the local level (UNESCO, 2014b).

The GAP Key Partners' Report (2015–2018) presented a quantitative assessment of progress in implementing ESD across its priority areas. In policy integration - 959 policy documents, 1.486 programmes were supported. In transforming learning environments - over 150.000 schools and institutions were integrated, reaching over 26 million learners. In educator capacity building - 48.000 teacher-training institutions were supported, while in youth empowerment - 3.4 million individuals engaged. For local solutions, there were 5.685 stakeholders and 2.390 initiatives identified (UNESCO, 2019).

The Higher Education Sustainability Initiative (HESI), launched at Rio+20 Conference in 2012 received commitments from nearly 300 universities to integrate sustainability into teaching, research, operations, and community engagement. The further adoption of the 2030 Agenda for Sustainable Development in 2015 formally embedded ESD within global education priorities. The Incheon Declaration reaffirmed the essential role of education in achieving sustainable development and called for bold and innovative policy measures to enhance the global education agenda (UNESCO, 2016).

The framework of Sustainable Development Goal 4 (SDG 4) explicitly positioned ESD as fundamental to achieving sustainable, peaceful, and equitable societies. UNESCO took the lead in coordination and monitoring progress toward target 4.7 of SDG 4 (United Nations, 2016; United Nations, 2019).

Built upon the lessons learned and experiences of the GAP and of the UNDESD, the UNESCO ESD for 2030 Framework set the strategic directions and policy priorities with the ambition to reconceptualize education as a driver of structural transformation (UNESCO, 2020). In May 2021, the UNESCO World Conference on ESD was held in Berlin, calling for urgent action to integrate ESD into all levels of education. The Berlin declaration was the first document that explicitly emphasized the need for transformative learning as essential for addressing global crises and highlighted ESD as a key enabler for achieving all SDGs (UNESCO, 2023). In October 2022, UNESCO launched the ESD for 2030 Global Network (ESD-Net 2030), with more

than 80 Member States and 50 international partners to coordinate national implementation efforts. However, the latest reports by UNESCO show that the progress toward achieving the SDG Target 4.7 faces persistent challenges, including: limited cross-sectoral coordination, slow curriculum integration, insufficient educator preparation, dominance of transmissive pedagogies, neoliberal institutional pressures, and Eurocentric epistemic frameworks (UNESCO, 2023: 2–4).

Effective ESD policy demands cultural awareness, historical consciousness, and long-term responsibility to address urgent global issues, challenge power structures, and advocate for equity and justice as key values of sustainability (Moore, 2005; Sipsos et al., 2008; Sterling, 2011; Wals, 2020). Without these, policy risks perpetuating short-term, Eurocentric, or technocratic approaches. Despite institutional progress, significant gaps persist between ESD policy aspirations and transformative practice. This emphasizes the need for an analytical framework linking UNESCO's ESD priorities with transformative learning theory, developed in the next section.

## Anchoring education for sustainable development and transformative learning theory

Sustainability-oriented education, as Gadotti (2008: 28) argues, requires reconceptualizing the human-environment relationship as interdependent and ethical rather than exploitative, thereby positioning environmental knowledge as inherently political.

However, conceptualizations of ESD as a guiding framework for environmental education (EE), remain contested and criticized in academic literature, as ambiguous terms leading to risks of conceptual dilution and neoliberal co-optation. Critical scholars argue that dominant institutional structures often undermine sustainability's transformative potential (Baker, 2015; Nielsen et al., 2012; Jickling and Wals, 2008; Gadotti, 2008; Dallaire and Colbert, 2012; Boström et al., 2018; Filho et al., 2015). Some scholars emphasize the need for a pluralistic approach to both EE and ESD - one that embraces diverse values, interests, and epistemological perspectives - although with concerns about whether these concepts are adequate to address urgent sustainability challenges (Wals and Corcoran, 2012; Kopnina and Shoreman-Ouimet, 2015).

In the context of both ESD conceptualization and practical implementation, transformative learning (TL) plays an important role by fostering systems thinking, critical consciousness, and social responsibility. This theory has become increasingly influential in higher education, where these components are operationalized through pedagogical practices that promote critical thinking, interdisciplinary learning, and active engagement with real-world issues.

Mezirow's TL theory positions learning as a process of critically examining assumptions, experiencing disorienting dilemmas, and

developing more inclusive and integrative perspectives. This approach emphasizes the need to uncover and challenge hidden assumptions that shape mindsets, values, and goals (Mezirow, 1991; Mezirow, 1997), critical understanding of power structures (Morrell and O'Connor, 2002: 17), as well as reconsidering the "imaginative background of a culture" (Jackson, 2008: 21).

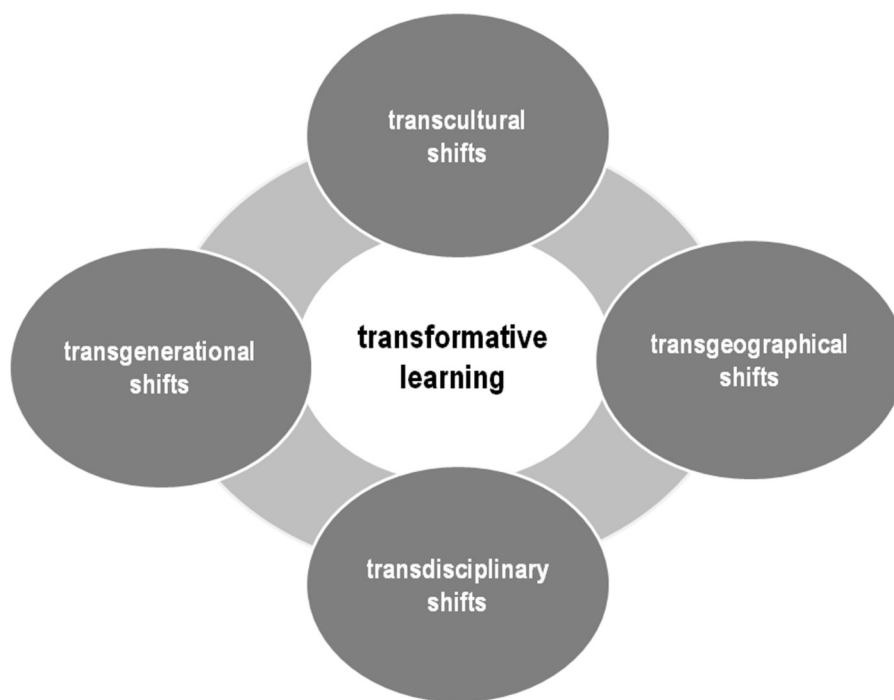
Transformative learning has been referred to in various contexts as a holistic approach that involves intellectual, emotional, and intuitive ways of knowing and acting in the world (Taylor, 1998; Brookfield, 2000; Wals, 2006; Sipsos et al., 2008; O'Sullivan et al., 2002). Critical reflection enables learners to interrogate assumptions and power relations - conditions necessary for transformative and emancipatory learning.

Wals (2006), Wals (2011) argues that transformative learning is necessary to achieve sustainability, through social learning and educational approaches that not only impart knowledge but also fundamentally change learners' perspectives and behaviors. Through the perspective of social learning theory and environmental education, Wals proposes a framework of four "Gestaltswitching" (with the meaning of "mind-set shifts") - the dimensions of transformative learning that inform the competences needed for engaging in sustainability issues (Wals, 2011: 182). The transcultural dimension refers to multiple cultural mindsets, shifts between the one culture and the other (and the notion of otherness), the transgenerational - between now and then, the transdisciplinary - to a range of social science and natural science (beyond disciplinary silos), while the transgeographical refers to spatial relations (global-local/North-South/East-West) (Wals, 2006: 53) (See Figure 1). These dimensions support both cognitive flexibility and ethical awareness required for transformative and emancipatory learning.

TL and ESD converge on the need for education that fosters agency, justice, and systemic transformation. This notion underpins the analytical framework that is proposed in the next section.

## Discussion: from transmissive towards transformative framework for HESD

Traditionally, sustainability education (SE) and ESD have been dominated by natural-science paradigms focused on environmental knowledge, resource management, and technological innovation. The social sciences, humanities and arts (SSHA) remain essential for addressing sustainability's cultural, ethical, political, and affective dimensions, despite their historic marginalization in ESD discourses (Sterling, 2011; Brookfield, 2000; Plumwood, 2002; Wals and Corcoran, 2012; Dryzek, 2013; Kopnina and Shoreman-Ouimet, 2015; Asikainen et al., 2017; Rodrigues, 2024; Ranczakowska and Kuznetsova-Bogdanovitch, 2025, etc.). For ESD to become genuinely transformative - not merely adaptive - it must incorporate SSHA perspectives that foreground meaning-



**FIGURE 1**  
Dimensions of transformative learning for sustainability (Wals, 2006, Wals, 2011).

making, imagination, values, identity, and the critique of power structures.

Sustainability pedagogy is shaped by multiple paradigms. Sterling (2001) distinguishes the mechanistic/transmissive models, from the ecological/transformative ones, both instrumental, with the former taking a top-down approach and the latter a bottom-up (59). It was noted by other scholars that instrumental and transformative learning may coexist, depending on context and intention (Papenfuss, et al., 2019). However, transformative learning often “disappears” in systems dominated by standardization, managerialism, and market pressures (Wals et al., 2008: 62). Neoliberal governance structures in higher education – prioritizing employability, competitiveness, and quantifiable outputs – further constrain dialogic, participatory, and critically oriented pedagogies. Some scholars advocate transgressive learning, which challenges normative assumptions and institutional boundaries (Lotz-Sisitka et al., 2015). Transgressive pedagogies are essential for sustainability challenges that require systemic disruption rather than incremental adaptation. As (Wals and Jickling (2002): 230) note, sustainability education requires the creation of space for alternative ways of thinking, valuing, imagining, and acting – an ethos that underpins contemporary commitments to transformative and emancipatory pedagogies in higher education.

The analytical framework developed in this paper responds to a gap in the literature: while ESD policy frameworks and

transformative learning theory are well developed individually, their intersection remains insufficiently theorized. A perspective that enables understanding how transformative learning can operationalize UNESCO’s ESD priorities in higher education has been lacking. By linking Wals (2006), Wals (2011) four TL dimensions (transcultural, transgenerational, transdisciplinary, transgeographical) with UNESCO’s five ESD priority action areas, this framework reveals underexplores intersections and tensions that shape TL potential in HESD. In order to articulate a critical perspective that is action-oriented, these dimensions of TL are cross-referenced with ESD priority areas defined by the UNESCO (2014b): advancing policy integration, transforming learning environments, building educator capacity, empowering and mobilizing youth, and accelerating sustainable solutions at the local level (see Table 1).

The framework offers insights through ESD priority action areas and TL dimensions.

The Advancing Policy Integration area aims to integrate ESD into education policies and governance frameworks at national, institutional, and international levels. In the past decade, the majority of member states had reflected ESD in their national education policy documents (UNESCO, 2016). Effective ESD policy demands cultural awareness, historical consciousness, and long-term responsibility to address urgent global issues, challenge power structures, and advocate for equity and justice as key values of sustainability (Moore, 2005; Sipos et al., 2008;



TABLE 1 Framework for transformative HESD.

Transformative learning Approach				
ESD for HEI priorities	Transcultural Shifts	Transgenerational shifts	Transdisciplinary shifts	Transgeographical shifts
Advancing policy integration	Move beyond Western-dominated sustainability paradigms to establish holistic Eco-social and justice-oriented participatory governance	Incorporate intergenerational justice principles into policy frameworks, and adopt indigenous long-term thinking models, like the seventh generation principle	Embed relational sustainability and systems thinking into equity-centered Transdisciplinary research to address real-world policy challenges	Recognize decolonizing policies beyond eurocentric frameworks to include local, indigenous and global south perspectives
Transforming learning environments	Recognize Inclusive pedagogies to create learning environments that encourage marginalized voices in environmental issues	Establish learning environments and models that respond to different generational needs, as 'safe spaces' for experiential learning	Transform campuses into living sustainability labs (zero waste, renewable energy, food sovereignty) to engage students in environmental initiatives	Foster regional and global sustainability solidarity networks to support knowledge exchange, and create adaptive learning environments
Building educator capacity	Challenge hegemonic pedagogies, to promote emancipatory teaching that fosters social justice and participatory education	Support educators in teaching to co-create knowledge with students and communities, intergenerational knowledge exchange, and critical self-reflection	Restructure curricula to integrate sustainability through storytelling, arts-based methods, and oral traditions in action-oriented experiential learning	Facilitate cross-border knowledge exchange through international collaborations ensuring equitable distribution of pedagogical resources
Empowering and mobilizing youth	Encourage youth from diverse cultural backgrounds in reshaping sustainability through decolonial and intersectional perspectives	Support initiatives to foster inter-generational dialogue, to ensure young people have a voice in education system sustainability governance	Support student-led initiatives and activism that challenge institutional and societal unsustainability beyond academia	Foster cross-border youth networks that link higher education with grassroots movements, and amplify local voices on global platforms
Accelerating sustainable solutions at the local level	Acknowledge diverse values and knowledge systems to strengthen bottom-up sustainability education models	Integrate community-based initiatives To co-create integrated sustainability solutions at the local level	Encourage university partnerships with local and grassroots movements and local initiatives for shared sustainability goals	Embed local sustainability solutions within global frameworks, to ensure models rooted in collective action

Sterling, 2011; Wals, 2020). Without these, policy risks perpetuating short-term, Eurocentric, or technocratic approaches.

The Transforming Learning and Training Environments area seeks to create sustainable campus environments through changes in learning content, pedagogical strategies, and institutional management (UNESCO, 2016). Many universities have promoted non-formal sustainability education through “green” campus initiatives and movements, including waste management programs, and carbon neutrality plans, (Wals and Blewitt, 2010; Schoolman et al., 2016), while some developed formal sustainability curricula (Barlett and Chase, 2004; Glavič, 2020). Nevertheless, campus initiatives remain superficial without epistemological change. This is reflected in transdisciplinarity that integrates diverse knowledge systems, and transgeographical thinking that situates local challenges within global interdependencies.

The Building Capacities of Educators and Trainers area shows that educators require support to facilitate uncertainty, ethical deliberation, and dialogic learning - capacities that are fundamental to transformative pedagogy. Universities are increasingly responding by developing experiential emancipatory and transformative pedagogies, advancing curricula and involving students in experiential problem-solving initiatives (Brundiers and Wiek, 2011).

The Empowering and Mobilizing Youth area suggests that genuine youth empowerment involves supporting political agency, leadership, and the capacity to critique institutional norms – not merely participation in predefined sustainability activities. Universities are fostering student-led sustainability movements, and providing support for youth-led sustainability research and startups (Xypaki, 2015; Wu, 2024).

The Accelerating Sustainable Solutions at the Local Level area focuses on promoting sustainability within local communities and businesses through HEI-led initiatives. HEIs must reconceive their civic role by co-creating sustainability solutions with communities, embedding action-oriented and experiential learning into curriculum and research.

Despite growing interest, HEIs face persistent structural barriers that constrain transformative ESD, such as disciplinary fragmentation, neoliberal policy pressures, and lack of institutional sustainability planning, audit cultures limiting pedagogical experimentation, Western epistemic dominance, and limited funding for participatory or community-based learning (Blanco-Portela et al., 2017; Tilbury, 2011).

These constraints risk reducing ESD to technical competencies rather than enabling critical consciousness, collective responsibility, and systemic transformation (Jickling and Wals, 2008; Selby and

Kagawa, 2010; Shore and Wright, 2000). Universities are not only HE institutions but also cultural institutions that shape societal values, norms, and knowledge systems, and play a critical role in promoting or hindering sustainability-oriented TL.

Transformative learning extends beyond individual growth to encompass cultural, social, and political transformation. It requires learning environments that support dialogue, emotion, vulnerability, and ethical inquiry. As TL requires inclusive environments where diverse voices are represented and valued (Giroux, 2014), more advocacy for policies that ensure fair access to higher education, particularly for marginalized communities should be ensured. Decolonizing sustainability learning requires recognizing Indigenous and subaltern epistemologies (Frandy, 2018; Dragicevic Sestic, 2024; Adeate and Sewchurran, 2023; Padayachee, et al., 2018), which expand the conceptual and ethical horizons of ESD while challenging dominant paradigms. Thus, universities must cultivate dialogic supportive pedagogical environments (Singer-Brodowski et al., 2022), inter- and transdisciplinary collaboration (Barth et al., 2007), and institutional cultures that treat HE as a public good.

This framework reflects both the promise and the limitations of contemporary ESD in higher education. Although many institutions adopt sustainability initiatives, transformative change requires deep shifts in governance, pedagogy, institutional culture, and epistemology. By linking UNESCO's ESD priorities and TL theory, this framework provides a forward-looking roadmap for advancing justice-oriented sustainability learning in higher education.

## Conclusion: the education we need for the world we want

As global ecological and social crises intensify, education's role in shaping sustainable, just, and resilient societies becomes increasingly vital. The manifesto *The Education We Need for the World We Want* (Rio 20 Education Group, 2012) called for paradigms that surpass human-capital frameworks and cultivate critical, reflective, and transformative learning. This call resonates even stronger today.

This paper makes contributions to the field of transformative HESD on three levels: a conceptual analysis linking transformative learning theory with UNESCO's ESD frameworks; an analytical framework mapping ESD priority action areas to TL dimensions (Table 1), and a critical perspective on the structural and epistemic barriers limiting transformative ESD in higher education.

Implications for policy and practice include the need to pluralize knowledge systems, reimagine learning environments, strengthen educator capacities, expand youth empowerment, and embed community-engaged learning. Higher education institutions should broaden epistemic horizons by incorporating Indigenous, community-based, and intercultural perspectives, alongside principles of intergenerational justice. Learning environments should be modelled as safe, experiential spaces

that function as hubs for dialogue, reflexivity, co-creation, and emotional engagement. Educators require institutional support to enact critical pedagogies, systems thinking, and collaborative learning practices. Youth empowerment should move beyond formal participation toward sustained support for student-led initiatives, activism, and grassroots movements. Finally, education models grounded in subaltern and bottom-up approaches to sustainability should be formally recognized and valued within policy and practice frameworks.

To contribute meaningfully to societal transformation, higher education must adopt new paradigms that function not only conceptually but also through institutional practices, governance, and culture. Transformative ESD requires viewing higher education as a public good committed to justice, dignity, and responsibility. By cultivating imagination and collective agency, higher education can meaningfully contribute to "the world we want" – a future in which sustainability is not merely taught but lived, contested, and continually reimaged.

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The author confirms being the sole contributor of this work and has approved it for publication.

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## References

- Adeate, T., and Sewchurran, A. (2023). African epistemologies and the decolonial curriculum. *Acta Acad.* 55 (1), 1–18. doi:10.38140/aa.v55i1.5762
- Asikainen, S., Brites, C., Plebańczyk, K., Rogač Mijatović, Lj, and Soini, K. (2017). SoPhi no. 139, culture in sustainability: towards a transdisciplinary approach (Jyväskylä: University of Jyväskylä, Department of Social Sciences and Philosophy).
- Baker, S. (2015). *Sustainable development*. London: Routledge.
- Barlett, P. F., and Chase, G. W. (2004). *Sustainability on campus: stories and strategies for change* (Cambridge, MA: MIT Press).
- Barth, M., Godemann, J., Rieckmann, M., and Stoltenberg, U. (2007). Developing key competencies for sustainable development in higher education. *Int. J. Sustain. High. Educ.* 8 (4), 416–430. doi:10.1108/14676370710823582
- Bawden, R. (2008). The educative purpose of higher education for human and social development in the context of globalization. Available online at: <http://upcommons.upc.edu/revistes/bitstream/2099/8112/1/bawden.pdf> (Accessed November 10, 2024).
- Bina, O., and Pereira, L. (2020). Transforming the role of universities: from being part of the problem to becoming part of the solution. *Environ. Sci. Policy Sustain. Dev.* 62 (4), 16–29. doi:10.1080/00139157.2020.1764286
- Blanco-Portela, N., Benayas, J., Perterra, L. R., and Lozano, R. (2017). Towards the integration of sustainability in higher education institutions: a review of drivers of and barriers to organisational change and their comparison against those found of companies. *J. Clean. Prod.* 166, 563–578. doi:10.1016/j.jclepro.2017.07.252
- Boström, M., Andersson, E., Berg, M., Gustafsson, K., Gustavsson, E., Hysing, E., et al. (2018). Conditions for transformative learning for sustainable development: a theoretical review and approach. *Sustainability* 10 (12), 4479. doi:10.3390/su10124479
- Brookfield, S. D. (2000). “Transformative learning as ideology critique,” in *Learning as transformation: critical perspectives on a theory in progress*. Editor J. Mezirow and Associates (San Francisco: Jossey-Bass), 125–150.
- Brundiers, K., and Wiek, A. (2011). Educating students in real-world sustainability research: vision and implementation. *Innov. High. Educ.* 36 (2), 107–124. doi:10.1007/s10755-010-9161-9
- Dallaire, G., and Colbert, F. (2012). Sustainable development and cultural policy: do they make a happy marriage? *Eur. J. Cult. Manag. Policy* 2. doi:10.3389/ejcmp.2023.v2iss1-article-1
- Del Cerro Santamaría, G. (2020). Challenges and drawbacks in the marketisation of higher education within neoliberalism. *Rev. Eur. Stud.* 12 (1), 22. doi:10.5539/res.v12n1p22
- Dragicevic Sestic, M. (2024). Tears in the classroom: teaching and learning cultural policy in a multicultural environment. Can the subaltern talk? *Int. J. Cult. Policy* 30, 1–13. doi:10.1080/10286632.2024.2305263
- Dryzek, J. S. (2013). *The politics of the Earth: environmental discourses*. Oxford University Press.
- Filho, W., Manolas, E., and Pace, P. (2015). The future we want. *Int. J. Sustain. High. Educ.* 16, 112–129. doi:10.1108/IJSHE-03-2014-0036
- Filho Leal, W. (2011). About the role of universities and their contribution to sustainable development. *High. Educ. Policy* 24 (4), 427–438. doi:10.1057/hep.2011.16
- Findler, F., Schönherr, N., Lozano, R., Reider, D., and Martinuzzi, A. (2019). The impacts of higher education institutions on sustainable development. *Int. J. Sustain. High. Educ.* 20 (1), 23–38. doi:10.1108/IJSHE-07-2017-0114
- Frandy, T. (2018). Indigenizing sustainabilities, sustaining indigenities: decolonization, sustainability, and education. *J. Sustain. Educ.* 18.
- Gadotti, M. (2008). What we need to learn to save the planet. *Int. J. Educ. Sustain. Dev.* 2 (1), 21–30. doi:10.1177/097340820800200108
- Giroux, H. A. (2014). *Neoliberalism's war on higher education*. Chicago: Haymarket Books.
- Glavič, P. (2020). Identifying key issues of education for sustainable development. *Sustainability* 12 (16), 6500. doi:10.3390/su12166500
- Hlatshwayo, M. N., and Moloi, T. M. (2024). The neoliberal turn in higher education: pitfalls, challenges, possibilities in the global south. *Transformation High. Educ.* 9 (0), a477. doi:10.4102/the.v9i0.477
- Huckle, J., and Wals, A. E. J. (2015). The UN decade of education for sustainable development: business as usual in the end. *Environ. Educ. Res.* 21 (3), 491–505. doi:10.1080/13504622.2015.1011084
- Jackson, M. G. (2008). *Transformative learning for a new worldview*. London: Palgrave Macmillan. doi:10.1057/9780230589940\_3
- Jickling, B., and Wals, A. E. J. (2008). Globalization and environmental education: looking beyond sustainable development. *J. Curriculum Stud.* 40 (1), 1–21. doi:10.1080/00220270701684667
- Kopnina, H., and Shoreman-Ouimet, E. (2015). *Sustainability: key issues*. New York: Routledge.
- Leicht, A., and Byun, W. J. (2021). “Chapter 5 uNESCO's framework ESD for 2030: an ambitious new initiative for massive transformation,” in *Curriculum and learning for climate action* (Leiden, Netherlands: Brill). doi:10.1163/9789004471818\_006
- Leicht, A., Heiss, J., and Byun, W. J. (2018). *Issues and trends in education for sustainable development* (Paris: UNESCO).
- Lotz-Sisitka, H., Wals, A. E., Kronlid, D., and McGarry, D. (2015). Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction. *Curr. Opin. Environ. Sustain.* 16, 73–80. doi:10.1016/j.cosust.2015.07.018
- Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., and Lambrechts, W. (2013). Declarations for sustainability in higher education: becoming better leaders, through addressing the university system. *J. Clean. Prod.* 48, 10–19. doi:10.1016/j.jclepro.2011.10.006
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.
- Mezirow, J. (1997). Transformative learning: theory to practice. *New Dir. Adult Continuing Educ.* 74, 5–12. doi:10.1002/ace.7401
- Moore, J. (2005). Is higher education ready for transformative learning? A question explored in the study of sustainability. *J. Transformative Educ.* 3 (1), 76–91. doi:10.1177/1541344604270862
- Morrell, A., and O'Connor, M. A. (2002). “Introduction,” in *Expanding the boundaries of transformative learning: essays on theory and praxis*. Editors E. O'Sullivan, A. Morrell, and M. A. O'Connor (New York: Palgrave), 15–20.
- Nielsen, K. A., Elling, B., Figueroa, M., and Jelsøe, E. (2012). *A new agenda for sustainability* (Leeds: Ashgate Publishing, Ltd).
- O'Sullivan, E. V., Morrell, A., and O'Connor, M. A. (2002). *Expanding the boundaries of transformative learning: essays on theory and praxis*. New York, NY: Palgrave.
- Padayachee, K., Matimolane, M., and Ganas, R. (2018). Addressing curriculum decolonisation and education for sustainable development through epistemically diverse curricula. *South Afr. J. High. Educ.* 32 (6), 288–304. doi:10.20853/32-6-2986
- Papenfuss, J., Merritt, E., Manuel-Navarrete, D., Cloutier, S., and Eckard, B. (2019). Interacting pedagogies: a review and framework for sustainability education. *J. Sustain. Educ.* 20 (ISSN), 2151–2745.
- Plumwood, V. (2002). *Environmental culture: the ecological crisis of reason*. London: Routledge.
- Ranczakowska, A. M., and Kuznetsova-Bogdanovitch, K. (2025). The future is now: pioneering transformative approaches in higher education within creative fields. *Eur. J. Cult. Manag. Policy* 14, 13171. doi:10.3389/ejcmp.2024.13171
- Rio 20 Education Group (2012). The education we need for the world we want. Available online at: <http://rio20.net/en/propuestas/the-education-we-need-for-the-world-we-want/>. (Accessed November 10, 2024).
- Rodrigues, V. (2024). Greening our future: cultural policy and the ecological imperative. *Eur. J. Cult. Manag. Policy* 14, 12707. doi:10.3389/ejcmp.2024.12707
- Schoolman, E. D., Shriberg, M., Schwimmer, S., and Tysman, M. (2016). Green cities and ivory towers: how do higher education sustainability initiatives shape millennials' consumption practices? *J. Environ. Stud. Sci.* 6 (3), 490–502. doi:10.1007/s13412-014-0190-z
- Selby, D., and Kagawa, F. (2010). Runaway climate change as challenge to the 'Closing Circle' of education for sustainable development. *J. Educ. Sustain. Dev.* 4 (1), 37–50. doi:10.1177/097340820900400111
- Shore, C., and Wright, S. (2000). Coercive accountability: the rise of audit culture in higher education. *Anthropol. Action* 7 (3), 28–39.
- Singer-Brodowski, M., Förster, R., Eschenbacher, S., Biberhofer, P., and Getzin, S. (2022). Facing crises of unsustainability: creating and holding safe enough spaces for transformative learning in higher education for sustainable development. *Front. Educ.* 7, 787490. doi:10.3389/educ.2022.787490
- Sipos, Y., Battisti, B., and Grimm, K. (2008). Achieving transformative sustainability learning: engaging head, hands and heart. *Int. J. Sustain. High. Educ.* 9 (1), 68–86. doi:10.1108/14676370810842193
- Sterling, S. (2001). *Sustainable education: re-visioning learning and change*. Cambridge, England: Green Books.



- Sterling, S. (2011). Transformative learning and sustainability: sketching the conceptual ground. *Learn. Teach. High. Educ.* 5.
- Sterling, S. (2021). Educating for the future we want. Available online at: <https://greattransition.org/images/Pedagogy-Transition-Sterling.pdf> (Accessed November 4, 2024).
- Taylor, E. W. (1998). The theory and practice of transformative learning: a critical review. Available online at: <https://files.eric.ed.gov/fulltext/ED423422.pdf> (Accessed November 10, 2024).
- Tilbury, D. (2011). Higher education for sustainability: a global overview of commitment and progress. *High. Educ. World* 4, 18–28.
- United Nations (2022). Transforming education: an urgent political imperative for our collective future. N. Y. United Nations. Vis. Statement Secretary-General Transforming Educ.
- UN (1992). *Agenda 21*. United Nations Conference on Environment and Development. New York: United Nations. Available online at: <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf> (Accessed June 14, 1992).
- UNESCO (2009). “Bonn declaration,” in *UNESCO world conference on education for sustainable development* (Bonn: UNESCO).
- UNESCO (2013). *National journeys towards education for sustainable development: reviewing national ESD experiences from Costa Rica, Morocco, South Africa, Sweden, Vietnam*. Paris: UNESCO. Available online at: <http://unesdoc.unesco.org/images/0022/002210/221008e.pdf> (Accessed November 10, 2024).
- UNESCO (2014a). *Shaping the future we want - UN decade of education for sustainable development* (final report). Paris: UNESCO. Available online at: <https://unesdoc.unesco.org/ark:/48223/pf0000230171> (Accessed November 10, 2024).
- UNESCO (2014b). *UNESCO roadmap for implementing the global action programme on education for sustainable development*. Paris: UNESCO. Available online at: <http://unesdoc.unesco.org/images/0023/002305/230514e.pdf> (Accessed November 10, 2024).
- UNESCO (2016). *Education 2030: incheon declaration and framework for action - toward inclusive and equitable quality education and lifelong learning for all*. Paris: UNESCO. Available online at: [www.unesco.org/Education/Documents/incheon-framework-for-action-en.pdf](http://www.unesco.org/Education/Documents/incheon-framework-for-action-en.pdf) (Accessed November 10, 2024).
- UNESCO (2018). *Issues and trends in education for sustainable development*. Paris: UNESCO.
- UNESCO (2019). Education for sustainable development: partners in action. global action programme (GAP) key partners’ report (2015–2018). Available online at: <https://unesdoc.unesco.org/ark:/48223/pf0000368829> (Accessed November 10, 2024).
- UNESCO (2020). *ESD for 2030: education for sustainable development roadmap*. Paris: UNESCO.
- UNESCO (2023). On the implementation of education for sustainable development (ESD) for 2030 and the Berlin declaration. Available online at: <https://unesdoc.unesco.org/ark:/48223/pf0000387344> (Accessed November 10, 2024).
- United Nations (2002). “Report of the world summit on sustainable development,” in *World summit on sustainable development* (Johannesburg: United Nations), 1–174.
- United Nations. (2016). Transforming our world: the 2030 agenda for sustainable development. New York: United Nations.
- United Nations (2019). *Implementation of education for sustainable development in the framework of the 2030 agenda for sustainable development*. Note by the Secretary-General. New York: United Nations. Available online at: <https://digitallibrary.un.org/record/3825420?ln=en&v=pdf> (Accessed November 10, 2024).
- Varela-Losada, M., Pérez-Rodríguez, U., Lorenzo-Rial, M. A., and Vega-Marcote, P. (2022). In search of transformative learning for sustainable development: bibliometric analysis of recent scientific production. *Front. Educ.* 7, 786560. doi:10.3389/educ.2022.786560
- Wals, A. E. (2006). “The end of ESD the beginning of transformative learning. Emphasizing the ‘E’ in ESD,” in *Proceedings of the seminar on education for sustainable development held in Helsinki*. Editor M. Cantell
- Wals, A. E. (2011). Learning our way to sustainability. *J. Educ. Sustain. Dev.* 5, 177–186. doi:10.1177/097340821100500208
- Wals, A. E. (2020). Sustainability-oriented ecologies of learning. *Educ. Philosophy Theory* 52 (2), 1–14.
- Wals, A. E., and Blewitt, J. (2010). “Third-wave sustainability in higher education: some (inter)national trends and developments,” in *Sustainability education: perspectives and practice across higher education*. Editors P. Jones, D. Selby, and S. Sterling (London, UK: Earthscan Publishing), 55–74.
- Wals, A. E., and Corcoran, P. B. (2012). *Learning for sustainability in times of accelerating change*. Wageningen Academic Publishers.
- Wals, A. E., and Jickling, B. (2002). “Sustainability” in higher education: from doublethink and newspeak to critical thinking and meaningful learning. *Int. J. Sustain. High. Educ.* 3 (3), 221–232.
- Wals, A. E., Geerling-Eijff, F., Hubeek, F., van der Kroon, S., and Vader, J. (2008). All mixed up? Instrumental and emancipatory learning toward a more sustainable world: considerations for EE policymakers. *Appl. Environ. Educ. Commun.* 7 (3), 55–65. doi:10.1080/15330150802473027
- WCED - World Commission on Environment and Development. (1987). Our common future.
- Wu, J. (2024). “A student-driven approach to establishing sustainability programs at colleges and universities: lessons from the green office movement in Europe,” in *Sustainable universities and colleges* (Cheltenham, UK: Edward Elgar Publishing). doi:10.4337/9781035314737.00014
- Xypaki, M. (2015). “An innovative model of student-led sustainability in higher education. Green dragons, city university London students’ union,” in *Integrating sustainability thinking in science and engineering curricula*. Editors W. Leal Filho, U. Azeiteiro, S. Caeiro, and F. Alves (Cham: World Sustainability Series. Springer). doi:10.1007/978-3-319-09474-8\_34