The Sustainability Integration Framework: A New Model for Embedding Sustainability in UK Universities

Purpose

Over the past two decades there has been an increased focus on sustainability within Higher Education Institutions (HEIs), a trend which continues to gain increasing momentum, yet integration remains inconsistent. To drive meaningful change, HEIs require a transformative shift from entrenched paradigms underpinning unsustainable societal patterns (Berzonsku and Moser, 2017) to accelerate fundamental changes to structures, mindsets and beliefs (O'Brien, 2012; O'Brien and Sygna, 2013). This paper introduces the Sustainability Integration Framework (SIF), a model that categorises HEIs according to their sustainability initiatives to provide a roadmap to advance sustainability practices across all areas of the institution.

Design/methodology/approach

This research uses a unique methodological approach, amalgamating three conceptual analysis frameworks (Chinn and Kramer, 1983; Hasse et al, 2000; Rodgers, 1989) to analyse sustainability policies, institutional practices and stakeholder perspectives from eight UK universities. Combining this with critical discourse analysis (Fairclough, 1995) and case study examples, this paper explores barriers to sustainability and the factors that facilitate transformative commitment.

Findings

The SIF builds upon the work of Sterling (2004) and identifies five institutional approaches to sustainability:

- Isolated
- Supplementary
- Embedded
- Integrated
- Transformative

Many universities are operating within the supplementary or embedded stages, often demonstrating what we refer to as 'greenpartitoning', with fragmented or tokenistic efforts. Key barriers relate to conceptual variations, academic inertia, policy ambiguity and institutional constraints, whilst key indicators of those transgressing towards the transformative stage include strategic governance, transdisciplinary collaboration and student engagement.

Practical Implications

The SIF provides a practical tool that enables HEIs to assess their current level of sustainability integration and facilitate them in devising targeted initiatives to generate cultural change to support transformative, university-wide change.

Keywords

Sustainability Integration Framework; Higher Education Institutions; Education for Sustainable Development; Conceptual Analysis; Critical Discourse Analysis; Transformative Change; Institutional Policy; Stakeholder Perspectives; SDGs; Transdisciplinary Collaboration; Cultural Change; Strategic Governance

Introduction

The global climate crisis is continually exposing deep systemic inequalities and governance failures, transcending borders and identities, resulting in the imperative need for educational establishments to cultivate sustainability-literate, global citizens to tackle this crisis. Higher Educational Institutions (HEIs) are uniquely positioned as catalysts for this transformative change within academic and policy discourse (SDSN, 2017; Žalėnienė and Pereira, 2021) with the potential to accelerate a society of informed and proactive global citizens (UNESCO, 2017).

There is an increasingly strong mandate for HEIs to embed sustainability into their daily practice both in terms of net-zero emissions (UK Government, 2021), curricular (Sterling, 2012; Advance HE and HEA; 2014; UNESCO, 2015; Advance HE, 2023) and quality measures (QAA, 2024). UNESCOs (2016) Declaration for Education 2030 emphasises the importance of quality education through SDG 4 and embeds Education for Sustainable Development (ESD) within Target 4.7, stating, that by 2030 all learners should acquire the knowledge and skills needed to promote sustainable development (SD). A target which, given the current pace of integration in HEIs, appears far from reach. Despite the plethora of policy, and frameworks the debate on what should be learned, how it should be taught remains conceptually controversial and empirically inconclusive (Probst, 2022).

Indeed, terms such as ESD, SD, and sustainability are used interchangeably, allowing the concept to be open to interpretation, resulting in its understanding and application often being contextually based, differing between institutions and stakeholders (Reid and Petocz, 2006; Alexio et al 2018; Bien and Sassen, 2020). This ambiguity has led to varied, often conflicting interpretations, which has resulted in the over and misuse of the term, allowing it to mean ‘everything’ to some, and ‘nothing’ to others (Károly, 2011; Leal Filho and Brandli, 2016).

HEIs are increasingly aligning their practices with a growing number of awards and rankings, including the Green Crown Awards, the QS World University Sustainability rankings, The People and Planet Award, and the Times Higher Education (THE) Impact Rankings. Indeed, there has been a substantiable yearly increase in participation in such rankings which aim to externally validate a HEIs sustainability efforts. Yet, there is currently no set of standard benchmarks or consistent measurement techniques (QAA, 2023) and the disparities within the criteria, priorities and methodologies of each ranking system forces HEIs to navigate competing frameworks which has led to institutions prioritising measurable outcomes over holistic integration (Ransome, 2025).

This has resulted in fragmented practice or ‘greenpartitioning’ (Ransome, 2025). Where greenwashing indicates intentional deceit (Tateishi, 2017: p.3), greenpartitioning sees practice divided into siloed efforts, with measurable outcomes often taking priority over systemic reforms. The term recognises genuine efforts for example in operational systems, whilst acknowledging the neglect of other areas, such as curricular, thus creating an imbalanced, fragmented approach to sustainability.

This fragmentation can be linked to the conceptual ambiguity surrounding the term, with HEIs viewing sustainability through multiple lenses, including:

- Environmental (Leal Filho et al., 2018; Cortese, 2003)
- Economic (Weiss et al., 2021; Kamphambale, 2022)
- Social Justice and Equity (Tilbury, 2011; Sterling, 2012)
- Curriculum and Pedagogy (Gulikers and Oonk, 2019; Scarff Seatter and Ceulemans, 2018)
- Cultural and Institutional (Stevens et al., 2008; Shriberg, 2002)
- Global Citizenship (Jickling and Wals, 2008; Ackay et al., 2024)
- Neoliberal (Kreinin and Aigner 2022; Powell et al., 2024)

In response to the issues surrounding conceptual ambiguity, fragmented implementation and the absence of a unified, reflexive roadmap for change, the paper seeks to answer the following RQs:

RQ1: How is sustainability conceptualised and enacted within UK HEIs?
RQ2: What barriers and enablers influence meaningful integration of sustainability?

Drawing on these findings, the paper goes on to introduce the 'Sustainability Integration Framework' (SIF). Grounded in empirical analysis from eight UK HEIs, the SIF builds on Sterling's (2004) typology and offers a pragmatic tool for policymakers and practitioners to enable HEIs to self-assess and progress their sustainability efforts.

Literature Review

Conceptual Ambiguity

Cotton et al (2007) argues there are accessibility issues surrounding sustainability language, due to its abstract nature and broadness. Furthermore, numerous definitions exist, and associated terminology is used interchangeably, thus creating ambiguity through lack of applicability and continuity (Bessant and Tidd, 2009; Leal Filho et al., 2017). The most citied definition comes from the Brundtland Report (WCED, 1987) which states it is, "development that meets the needs of current generations without compromising the needs of futures generations". Linking directly to the three pillars:

- Economic
- Societal
- Environmental

They are also referred to as the "triple bottom line" (Elkington, 2018) which is embedded in Sustainable Development Goals (SDGs) (UNESCO, 2015). Interchangeable terminology associated with the three pillars includes but is not limited to:

- People, planet, profit
- Environmental stewardess
- Education for sustainable development
- Education for sustainability
- Sustainability literacy
- Global citizenship education
- Transformative learning for sustainability
- Circular economy
- Climate justice
- Green innovation
- Low-carbon growth
- Corporate social responsibility

The dynamic, interconnected nature between these terms alongside SD and ESD, leads to conceptual ambiguity, leading to the concept being characterised with a resistance to definition. Due to its unfamiliar, ambiguous and chaotic nature, which creates various interpretations amongst stakeholders, sustainability is thus considered a wicked problem (Gulikers and Oonk, 2019).

Sustainability encompasses multiple dimensions, with UNESCO (2005: p.2) considering SD as a "constantly evolving concept, that is…the will to improve everyone's quality of life…". However, this

definition is built on fundamental vagueness through its use of broad and subjective language, reinforcing the interpretive nature of the concept. The DESD (UNESCO, 2005) recognised the role of HEIs in driving SD, establishing them as institutions which:

- Shape future leaders
- Foster critical thinkers
- Drive forward research

Highlighting that ESD should focus on each of the three pillars in equal measure and amalgamating the principles of SD into all aspects of the curricula, research, campus operation and community outreach, it promoted a holistic and interdisciplinary approach. Further iterations of definitions have included the Global Action Programme (GAP) (UNESCO, 2014) which prioritised empowerment of learners to make informed decisions towards environmental integrity, economic viability and a just society. Whilst the most recent "Education for Sustainable Development: Towards achieving the SDGs" or "ESD for 2030" (UNSECO, 2021: p.8) combined the DESD and GAP emphasising the need to integrate education to achieve the SDGs, widening the ESD definition to include people of all genders to respect a cultural diversity society, recognising it as transformational and encompassing learning content, outcomes pedagogy and the learning environment".

In response to international political and moral obligations UK HEIs have been at the forefront of embedding sustainability (Cotton et al., 2007; Sterling and Thomas, 2006). There have been several publications of guidance and frameworks to support its implementation, with the most recent pieces seeing the collaboration of the Quality Assurance Agency (QAA) and Advance HE to define SD as "an aspirational ongoing process of addressing social, environmental and economic concerns to create a better world", and ESD as "the process of creating curriculum structures and subject-relevant content to support SD" (Advance HE, 2021: p.3).
Advance HE (2023: p.3) has gone on to publish further guidance and developing their definition to combine the two, incorporating aspects of internationalisation, employability, entrepreneurship, community engagement, inclusivity and mental health and wellbeing".

It is evident that sustainability, SD and ESD are continually evolving concepts as evidenced throughout various policies and frameworks. Although all have foundations within the original Brundtland Report (WCED, 1987) each definition encompasses more elements, yet none have provided the clarity needed for consistent application within HEIs.

Sustainability Rankings

Beyond regulatory pressures, it is important to consider the increasingly market-driven neo-liberal environment HEIs are operating in, where competition for students, funding and global rankings is paramount (Kreinin and Aigner 2022; Powell et al., 2024). Indeed, HEIs are beholden to the same economic forces that created the sustainability crisis itself (Green, 2021; Bauer, 2021.; López-López et al., 2021) which is a fundamental barrier to the wholly integrative approach needed to have truly sustainable education (Sterling, 2004). There is a growing number of awards and rankings, including:

- The Green Gown Awards
- The QS World University Sustainability rankings
- The People and Planet Award
- The Times Higher Education (THE) Impact Rankings

which are embedding sustainability into a competitive, metric-driven framework.

While the purpose of sustainability rankings is to measure the extent to which HEIs are working towards advancing sustain ability and addressing SDGs, their methodological approaches differ significantly with nuances in definitions, integration of SDGs, scoring, participation and geographical spread (Calderón, 2023). Such external validation incentivises HEIs to favour quantifiable actions as they are more readily measured; institutions that emphasise environmental metrics benefit from these ranking systems where language of accreditation, compliance and structured governance aligns with ranking performance metrics, ensuring recognition, competitive advantage and credibility (Ransome, 2025). This highlights the intricate relationship between HEIs, reputation and sustainability efforts, whereby universities use rankings, awards and accreditations to position themselves as national and global leaders in sustainability, reinforcing their legitimacy through external recognition.

Consequently, rankings and awards are often being used as strategic branding tools, rather than authentic catalysts for transformation. Research shows that the metrics using in THE and QS rankings, which blends reputation surveys with operational data, are susceptible to prestigious-status bias, privileging well-known HEIs over genuine sustainability initiatives (Bautista-Puig et al., 2022). While THE (2025) has acknowledged its inherent biases and cultural inconsistencies, the current methodology permits the distortion of performance assessments, allowing HEIs to priorities systematically and select submissions to bolster their ranking position (Bautista-Puig et al., 2022; Urbano et al., 2025). As a result, HEIs allocate funding to improve ranking positions, sometimes through 'curriculum greenwashing' (UoG, 2022) rather than transformative, cultural change.

Existing Frameworks

As outlined, there is an increasingly strong mandate for HEIs to embed sustainability into their daily practice, yet UK legislation focuses on carbon reduction rather than curricular integration (OfS, 2022). The Future Fit Framework (Sterling, 2012) was a pioneering initiative in the UK, which offered support to academics, policy makers and senior managers to help them better understand sustainability and engage with ESD. This framework was part of a broader movement towards embedding sustainability in HEIs, and any subsequent frameworks are based on the foundational principles of Future Fit. Despite the aspirations of this framework and an increase in research in ESD (Grosseck at al., 2019), ESD integration in UK HEIs remains slow and inconsistent (Fiselier, Longhurst and Gough, 2018). While the Future Fit Framework offered practical steps for integrating sustainability into education, emphasising the need for systemic thinking, critical reflection and participatory approaches within the curricula. However, its focus was primarily conceptual, offering broad guidance rather than specific strategies for evaluating the extent to which sustainability is meaningfully embedded or ensuring consistency across HEI contexts (Jones et al., 2010).

Subsequent frameworks and policies have attempted to bridge this gap by placing greater emphasis on learning outcomes, graduate competencies and HEs role in facilitating global citizenship and critical engagement with sustainability issues (Lozano et al., 2013; QAA/HEA 2014). Education for Sustainable Development: Guidance for UK Higher Education Providers (HEA, QAA, 2014) represented a turning point in UK policy, offering the first piece of sector-wide guidance on integrating sustainability into teaching. More recently Education for Sustainable Development Guidance (Advance HE and QAA, 2021) sought to operationalise ESD further by producing practical resources, reflective tools and exemplars of good practice. It offers practical support for HEIs to work collaboratively with staff and students to foster knowledge, understanding and skills towards SD and reflects the growing recognition that HEIs are key actors in advances the Sustainable Development Goals (SDGs) (UN, 2015[1]).

[1] [1]United Nations (2015) *Transforming our world: the 2030 Agenda for Sustainable Development*. Available at: https://sdgs.un.org/2030agenda (Accessed: 12 December 2023). This source is provided for context and will not be cited further in this text.

The SDGs are arguably the most recognised and cited framework, offering a broad scope of goals and targets which allows them to resonate with all academic disciplines and subject areas (Mori et al., 2021). Embedding the SDGs into teaching can enhance the learning environment by ensuring the curriculum is relevant to contemporary and complex global issues (Lozano et al., 2013). However, students report that ESD often treats issues in a siloed fashion or through option modules, leaving a sense of confusion regards the depth of sustainability (QAA, 2023). There is a growing potential for 'curriculum greenwashing' (UoG, 2022), which refers to the superficial inclusion of sustainability concepts in the curricula, such as the use of 'single-issue' SDGs (UAL, 2022). While they provide a starting point, the SDGs are also a deceptive trap, providing neat boxes which pack away the end game of ESD (Ryan, 2023). Many HEIs simply label courses against the SDGs in course descriptions and fail to provide teaching or practical application of the goals.

A significant barrier to meaningful implementation is the lack of a standardised evaluative tool or accountability mechanism, leaving HEIs with autonomy to interpret and implement ESD in line with institutional priorities, resources and values (Gough and Stables, 2012; Aikens et al, 2016). Indeed, despite the growing recognition of the sustainability agenda, implementation in HEIs remains fragmented, often only implemented in specific courses, projects or operations rather than institutionally wide (Leal Filho et al., 2018).

Sterling's Typology

The frameworks discussed have facilitated diverse efforts to *integrate* sustainability into HEIs by encouraging new approaches, collaboration with other HEIs and the wider community and running 'educating-the-educators' programmes (Lozano et al. 2013; Ramos et al. 2015). Yet, an air of cosmetic reform remains (Sterling, 2004) rather than the transformative approach required to rethink systems, mindsets and cultures to create enabling conditions for wholly integrative sustainability to emerge. Due to the broad nature of existing frameworks and range of criteria within rankings, there has been varying levels of response from HEIs, worryingly some academics suggest that many institutions thrive in an unsustainable world (O'Riordan and Volsey, 1998). As a result, some have resisted substantial and radical change, opting to adapt just enough to accommodate the concept through marginal and tokenistic changes, but not enough to make fundamental change.

Sterling's (2004) typology in Table 1, highlights four institutional responses to ESD:

Sustainable Transition	**Response**	**State of Sustainability (Societal Change)**	**State of Education (Educational Change)**
Very weak	Denial	No change	No change
Weak	Bolt on	Cosmetic reform	Education *about* sustainability
Strong	Build in	Serious greening	Education *for* sustainability
Very strong	Rebuilt	Wholly integrative	Sustainable education

Table 1: Staged social and educational responses to sustainability (Sterling, 2004)
Source: Sterling (2004)

The first level '*denial'* recognises that while there may be awareness of sustainability, there is no action because of either ignorance or denial (Sterling, 2004). Many HEIs face barriers due to

traditional hierarchies, entrenched norms and institutional inertia (Hofman et al., 2022; Korteling et al., 2023). This leads to HEIs doing nothing or maintaining their current position akin to status-quo bias (Samuelson and Zeckhauser, 1988). While sustainability has gained momentum, transformative actions are met with an unwillingness from powerful institutional norms, which limit the impact of meaningful initiatives (UNESCO, 2022).

The second level *'bolt on',* is where institutions *accommodate* sustainability, adjusting their systems, but the dominant model and overarching systems remain largely unchanged. Many HEIs engage with incrementalism in their initial entry point to sustainability, they opt to make small adjustments over time to make gradual change to processes, avoiding large-scale transformation (Lindbolm, 1959). avoiding large-scale transformation processes. This is seen particularly within curriculum integration, where sustainability is integrated through the introduction of optional modules or courses without fundamentally altering the curriculum (Weiss et al., 2022; Avelar and Pajuelo-Moreno, 2024). These approaches often result in fragmentation, where there is structural and epistemological separation of activities across teaching, operations, and governance leading to isolated efforts that lack collective momentum (McMillin and Dyball, 2009; Sibbel, 2009).

The third level is '*built in'* to existing systems, here HEIs reform by reflecting on paradigmatic assumptions and engaging in critical reflectiveness to respond adaptively resulting in significant change (Sterling, 2004). Implementing sustainability and the SDGs calls for an integrated approach, which requires systems thinking to enable better conversation and cooperation between agencies (Reynolds et al; 2018). When HEIs view themselves as an integrated whole and adopt the systems thinking approach, it can help enable them to comprehensively address sustainability ensuring it is 'built in' to each aspect of the institution, without reducing its properties to smaller parts (Sterling, 2003).It helps set priorities for action by identifying crucial leverage points (Christou et al., 2024) allowing institutional elements to follow sustainable trajectories, ensuring they are dynamic and adaptive by recognising both the synergies and trade-offs small changes can have (Weitz et al., 2023).

The fourth level is *transformation*, where HEIs embrace ESD as a whole-institutional approach making paradigm changes through deep, conscious reordering of assumptions, embracing a pedagogical shift towards transformative learning (Sterling, 2004; Mori et al., 2021). The approach transcends the system-based approach seen at the 'built in' stage, by ensuring active participation of all internal and external stakeholders, making sustainability a collective, institutional commitment (Christou et al., 2024). HEIs decisively commit to the successful implementation of the SDGs to establish a sustainability mindset that surpasses technical knowledge to create a thriving society (Žalėnienė and Pereira, 2021).

Sterling's (2004) model provides a valuable insight into various implementation approaches seen across HEIs, however, it fails to adequately address the institutional priorities and operational pragmatism that dominants universities. Furthermore, it does not account for the ever-growing competitive, neoliberal pressures and rapidly evolving challenges faced by modern HEIs (Harvey, 2007).

Limitations of Current Approaches

Despite the abundancy of policies, rankings, and frameworks, evidence suggests that sustainability integration within HEIs remains fragmented, inconsistent, and often superficial (Fiselier, Longhurst and Gough, 2018; Leal Filho et al., 2018). While existing models, such as the Future Fit Framework (Sterling, 2012) and QAA/Advance HE guidance (2021, 2023), provide aspirational principles, they lack the evaluative tools required to assess the depth, authenticity, or institutional coherence of sustainability efforts.

This challenge is exacerbated by what has been conceptualised as greenpartitioning, a phenomenon whereby sustainability initiatives within HEIs become structurally and epistemologically fragmented, confined to isolated projects, operations, or curricula, rather than integrated holistically across institutional systems (Ransome, 2025). Greenpartitioning reflects the tensions between external pressures—such as rankings and competitive positioning—and the cultural, structural transformation required to authentically embed sustainability within the university context.

Compounding this issue is the persistent influence of neoliberal market logics within higher education, which reinforce performative rather than transformative sustainability actions (Kreinin and Aigner, 2022; Powell et al., 2024). Consequently, many HEIs exhibit only incremental, surface-level engagement with sustainability, often limited to branding exercises, optional modules, or operational adjustments, without addressing underlying institutional paradigms or power structures (Sterling, 2004; McMillin and Dyball, 2009; Weiss et al., 2022).

Empirical Case Studies

Recent case studies indicate both progress and persistent fragmentation of sustainability efforts in HEIs across Europe. Leal Filho et al (2019; 2021) examined several case studies across Europe and found that while HEIs are progressing within operational domains, such as carbon reduction, there is a lack of integration into teaching and governance. Similarly, Maiorescu et al. (2020) found that within a Romanian university, sustainability was embedded within policy but not consistently within the curricular. Fiselier, Longhurst and Gough (2018) also found that ESD is uneven across UK institutions, citing strong examples of leadership which are offset by widespread reliance on grassroot, voluntary initiatives. Furthermore, Christou et al. (2024) analysed institution-wide approaches and concluded that even leading HEIs often fall short of transformative integration, particularly in relation to governance, pedagogy and culture. Combined, these studies evidence an incremental advancement of sustainability agendas, however institutional inertia, disciplinary silos and neoliberal pressures continue to prevent widespread, holistic adoption.

The literature highlights a critical gap in both conceptual clarity and practical mechanisms for evaluating the extent to which sustainability is embedded within HEIs. These recent empirical case studies reinforce this gap, providing rational for this study, which seeks to explore institutional sustainability initiatives, identify barriers to integration, and advance understanding of the conditions required for whole-institutional change.

Methodology

This research adopts a qualitative, interpretivist approach underpinned by a critical orientation towards understanding how sustainability is conceptualised, implemented, and constrained within HEIs. The study combines conceptual analysis (CA) frameworks (Chinn and Kramer, 1983; Rodgers, 1989; Hasse et al., 2000) with Critical Discourse Analysis (CDA) (Fairclough, 1995) to explore both visible practices and the underlying discourses that shape institutional engagement with sustainability.

Research Design

This study employs a unique, dual-method approach, combining CA with CDA to investigate institutional policies, practices, and stakeholder perspectives. CDA was not used as a full linguistic analytical framework, focusing on power, ideology, and meaning making (Van Dijk, 2001). While CA frameworks provided structure for iterative analysis and concept refinement. This amalgamation

ensured both breadth (systematic conceptual mapping) and depth (interpretation of language and practice).

Three established models of CA were selected for their complementary strengths and alignment with the researcher's philosophical positioning, as outlined below in Table 2.

Model	**Aspects included**
Integrated Theory and Knowledge Development Model (Chinn and Kramer, 1983)	• Social and contextual framing • Broader context and purpose • Diverse data • Reflexivity and interaction with findings • Social and value-based implications • Ongoing interaction with data and stakeholder input • Validation criteria and future research consideration
Evolutionary Concept Analysis (Rodgers, 1989)	• Defining concept • Flexible data sources • Iterative analysis • Synthesis and hypothesis future development
The Simultaneous Concept Analysis (Haase et al., 2000)	• Concurrent data collection • Identifying interrelations • Comparative analysis of related concepts

Table 2: Conceptual analysis framework
Source: Authors' own creation/work

This amalgamated approach allowed for an in-depth analysis of sustainability allowing for its complex nature, whilst providing a systematic approach to the research, as illustrated in Figure 1.

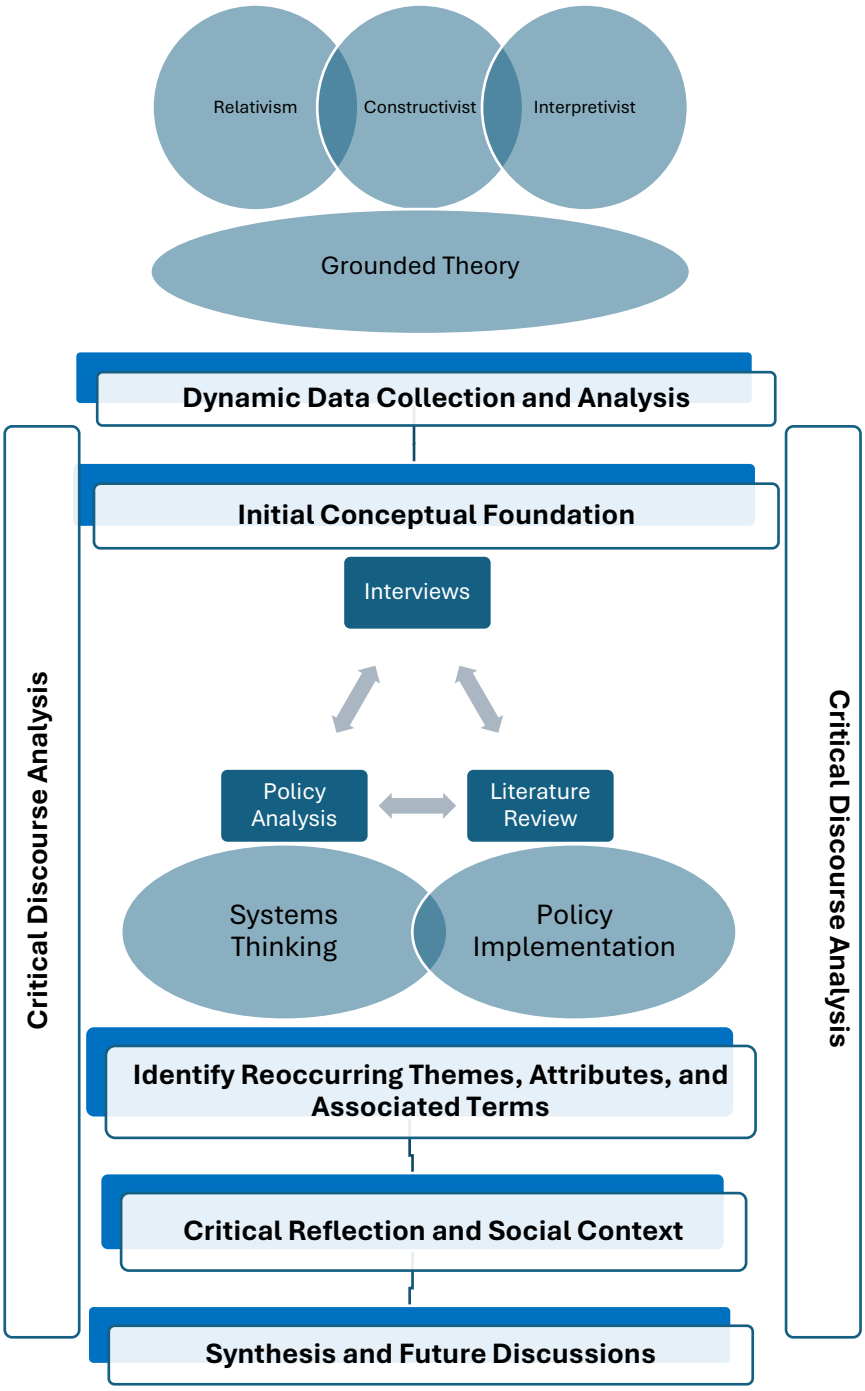

Figure 1: Conceptual and Methodological Framework
Source: Authors' own creation/work

Importantly, the Sustainability Integration Framework (SIF) was not an a priori model but emerged inductively from the data analysis. It was subsequently used as a guiding analytical lens, enabling the positioning of institutions along a staged continuum of sustainability integration.

Data Collection

Three primary data sources were used, including:

- Policy and strategic documents (policies, action plans and evaluative reports)
- Public-facing institutional communications (websites, statements and rankings)

- Semi-structured interviews with keys stakeholders (senior leaders, academic staff and sustainability professionals)

Data was gathered from eight UK institutions and participants, which were purposively selected to provide a range of governance structures, sustainability engagement and public commitments. The selection provided a range of institutions and participant job roles displayed in Table 3.

Participant Number	University	Type of University	Job Title
P1	A	Post-1992 University	Principle Lecturer
P2	B	Post-1992 University	Associate Director of Sustainable Development Goal Impact
P3	C	Post-1992 University	Associate Professor in Sociology
P4	D	Red Brick University	Vice-President for Social Responsibility
P5	E	Ancient University	Head of Environmental Sustainability
P6	F	Plate Glass University	Senior Lecturer in Science Education
P7	G	Post-1992 University	Environmental Manager
P8	H	Red Brick University	Education for Sustainability Coordinator

Table 3: Universities and participants

Source: Authors' own creation/work

Document selection was guided by its relevance to sustainability policy and strategy whilst interviews explored alignment with policy, personal understandings, institutional culture and perceived implementation challenges.

Interviews lasted between 45–75 minutes, were conducted online, and recorded with participant consent. Open-ended questions explored conceptualisations of sustainability, governance structures, barriers, and enablers.

Data Analysis

Data analysis followed an iterative, qualitative approach which amalgamated Braun and Clarke's (2006) six-step approach to Thematic Analysis (TA) with Glaser and Strauss's (1967) constant comparison, to ensure a structured yet malleable analytical framework.

TA was the primary technique for identifying patterns and themes that permeated the data, building a coherent understanding of sustainability in HEIs. These themes were then used to organise, describe and interpret reality (Boyatzis, 1998; Braun and Clark, 2006; 2021) and their relevance determined in relation to the RQs. Themes were continuously compared within and across interviews and document analysis to explore similarities, variations and contradictions into how sustainability is conceptualised, embodied and enacted.

Amalgamating these methods facilitated an iterative and flexible approach, by using the structured framework of TA to identify and organise patterns of data, and CC to ensure ongoing refinement of themes, to enable deeper theoretical engagement thus improving credibility, confirmability, and dependability (Lincoln and Guba, 1985).

The iterative combination of conceptual and critical discourse analysis led to the development of the SIF. While not conceived as an a priori model, the SIF emerged from systematic engagement with

policy, institutional practice, and interview data. It is therefore introduced here as the guiding framework used to position and analyse the eight case universities. The framework provides a structured lens through which institutional approaches can be compared, while remaining sensitive to contextual variation.

Ethical considerations

Ethical approval was granted by Lancaster University Faculty of Education Research Ethics Committee. All interviewees provided informed consent, and all institutional data is anonymised to maintain confidentiality. Research reflexivity was maintained throughout by using memos to create an audit trail, evidence theoretical and methodological choices throughout the study (Koch, 1994) Memoing was also used to create an audit trail and evidence theoretical and methodological choices (Koch, 1994) offering a self-critical account of the research process (Tobin and Begley, 2004).

Findings

Conceptualisation

Several tensions surrounding the conceptualisation of sustainability, were revealed during the data analysis leading to two distinctive conceptualisations:

- Operational-Environmental Sustainability
- Holistic-Social Sustainability

Both conceptualisations are grounded in reoccurring attributes, antecedents and consequences highlighted across the data set, providing the themes for synthesising the policy and interviews. The operational-environmental perspective reflects tangible, outcome-focused intiatives, while holistic-social sustainability reflects a broader values-focused lens.

P1 highlights sustainability, means “so many things to so many people that it almost becomes meaningless because there's no clear definition” and ponders whether “any of that really matter as long as we're all moving in the right direction in terms of what the outcome is?”. While P3 suggests sustainability as a lens to be “distributed across different academic disciplines, different vocabularies, different theoretical and conceptual frameworks, and bring a new kind of singularity…It’s almost like a rebranding, but one that has potential value”.

The lack of a coherent, sector-wide definition of sustainability, coupled with the competitive, neoliberal market (Kreinin and Aigner, 2022; Powell et al., 2024), has led many HEIs to prioritise measurable, tangible outcomes within their sustainability strategies. Environmental metrics, particularly carbon reduction and net-zero targets, dominate institutional agendas due to their quantifiable nature, while social and economic dimensions often remain underdeveloped.

This emphasis on environmental aspects is reflected in both policy documents and participant perspectives. For instance, several participants (P1, P4, P5, P7, P8) identified tensions between institutional strategies and broader, more holistic conceptualisations of sustainability. Participants involved in policy development (P4, P5) acknowledged that environmental targets often take precedence due to external pressures and pragmatic institutional considerations, yet both noted significant gaps in addressing social justice and economic sustainability. P4 admitted their university was "weak" in embedding sustainability within the curriculum, while P5 stated that "social sustainability remains vague and underexplored," citing leadership turnover and limited resources as key barriers.

The competitive higher education market, alongside the proliferation of rankings and award systems—including QS, THE Impact Rankings, and People & Planet—exacerbates these challenges. Disparities between ranking systems force HEIs to navigate competing frameworks with inconsistent criteria, often leading to strategic prioritisation of metrics that are externally visible and reputationally advantageous. For example, University B ranked 359th in QS but placed 7th in People & Planet, while University D ranked highly in QS and THE, but 38th in People & Planet, highlighting these inconsistencies (QS, 2024).

While rankings can incentivise positive action, they also risk driving fragmented or tokenistic approaches, what this paper refers to as "greenpartitioning" (Ransome, 2025)—where environmental initiatives are advanced, but deeper systemic change remains limited.

The SDGs offer a globally recognised framework for advancing holistic sustainability, while most universities in the study reference the SDGs within their policies, their implementation varies significantly. However, P2 warns that “across the sector, there are really quite significant variations in how authentic different universities' engagements with sustainability really are”. Indeed, several participants (P3, P6, P8) expressed concerns that the SDGs risk being reduced to a "tick box" exercise or branding tool rather than fostering genuine transformation.

Others, however, recognised their value in facilitating discussions, aligning institutional practices with global challenges, and evidencing impact, particularly in areas of community engagement and equity. Some institutional examples of progress, such as University G explicitly linking sustainability to social justice, which is corroborated by P8 stating that the SDGs are “a framework we look to, particularly for aligning the curriculum to global priorities like climate action and reduced inequalities…[but] we’re not hanging everything on them, but that’s kind of a good reference because we’re looking at things like inequality and how things relate to the global South and climate justice." However, most HEIs continue to frame sustainability primarily through an environmental lens, highlighted particularly by P4 who stated "All our courses now have an SDG tag, so everyone studying anything will know what SDGs they're addressing… we participate in the Times Higher ranking for SDG impact, and by tagging everything we're able to collect that information very quickly”. The persistent challenge of evidencing social and economic sustainability contributions, combined with reputational pressures, reinforces this imbalance.

These findings illustrate that without clearer benchmarks, shared definitions, and structural enablers, HEIs are likely to continue prioritising quantifiable environmental metrics, potentially at the expense of the broader, transformative potential of sustainability in higher education.

Implementation

The analysis of university policies uncovered varied implementation techniques, influenced by governance structures, leadership roles and institutional mechanisms, as outlined in Table 4.

University	Overall Governance Type	Sustainability-Specific Governance Type	Senior Leadership Roles	Operational/Other Roles	Specific Groups/Committees	Top-Down / Bottom-Up	No of Policies
Uni A	Collaborative	Collaborative	None specified	Sustainability Team and Environmental Champions	Global Challenges Strategic Oversight Group	Mixed	11

Uni B	Collaborative	Collaborative	None specified	Director of Sustainability; Green Impact Leader	Global Hub for SDG 16	Bottom-Up	7
Uni C	Strategic/Integrated	Strategic/Integrated (with operational aspects)	PVC for Sustainability and Climate Action	Head of Sustainability	Sustainability Executive Committee	Top-Down with Support	20
Uni D	Centralised	Strategic/Integrated	Vice-President for Social Responsibility	Director of Environmental Sustainability	Environmental Sustainability Committee	Top-Down	6
Uni E	Centralised	Strategic/Integrated	Vice-Chancellor; Environmental Sustainability Working Group	Working Group Lead	Environmental Sustainability Subcommittee	Top-Down	6
Uni F	Strategic/Integrated	Strategic/Integrated	None specified	Director of Environmental Sustainability	Sustainability Steering Group; Environmental Sustainability at XXX (ESAY)	Mixed	6
Uni G	Strategic/Integrated	Strategic/Integrated (with operational aspects)	PVC for Sustainability	Environmental Officer; Sustainability Team	Environmental Sustainability Working Group	Top-Down with Support	5
Uni H	Centralised	Strategic/Integrated	PVC for Global Engagement Co-Chair of the Environmental Sustainability Strategy Monitoring and Implementation Group (ES-SMIG), Director of Sustainability.	Head of Net Zero Carbon & Sustainability, Sustainability Manager; Cabot Institute Director	Environmental Sustainability Strategy Monitoring and Implementation Group (ES-SMIG)	Mixed	6

Table 4: Governance overview
Source: Authors' own creation/work

Three broad models emerged:

- **Collaborative** (e.g., Uni A, Uni B): Emphasise grassroots engagement and student participation, with initiatives such as Green Impact and Responsible Futures. However, the absence of named senior sustainability leads risks limiting influence and systemic scalability.

- **Strategic/Integrated** (e.g., Uni C, Uni F, Uni G): Combine top-down leadership structures with some grassroots participation, often reflected in extensive policy frameworks and governance committees yet, integration beyond operations varies.

- **Centralised** (e.g., Uni D, Uni E, Uni H): Rely on top-down structures and formal sustainability governance. These ensure accountability and alignment with institutional strategy but may exclude marginalised voices and grassroots innovation.

Leadership emerged as the most influential enabler and barrier. While senior leadership roles (e.g., PVC for Sustainability) enhanced visibility and funding for operational sustainability (OS), participants expressed concerns over rhetoric exceeding practice, particularly in curriculum integration and

cultural change. P6 observed a disconnect between sustainability as a stated value and its role in decision-making:

> "Sustainability is one of the XXX core principles, but I don't think environmental sustainability is at the heart of our decision-making, which is what you would expect if something is a core principle".

P4 senior leader, emphasised the importance of accountability and formal governance structures:

> "My tenure as VP was instrumental in advancing our sustainability goals…We've changed the governance of it. There is a formal committee now, - the Environmental Sustainability Committee, which reports up to the main committee that runs the university. So, there are clear lines of accountability. Which is important if take it seriously, you've got to be accountable for it"

These perspectives highlight the dual role of leadership, while formal governance raise the visibility of sustainability, they often focus on measurable environmental outcomes, aligning with normative pressures from rankings and external frameworks. In practice each university remains closely aligned with external rankings and compliance frameworks, demonstrated strong operational performance through standardisation, measurability and accountability, as illustrated in Table 5.

University	Standardisation	Measurability	Accountability
Uni A	Standardised under ISO 14001, ensuring operational consistency across waste, energy, and emissions management. EcoCampus Platinum Certification.	Progress measured against a 2009–10 baseline, showing a 45.5% reduction in emissions. Solar energy generation tracked annually.	Annual sustainability reports and ISO compliance audits ensure accountability in achieving net-zero carbon by 2050.
Uni B	Uses a comprehensive EMS aligned with BS8555 standards. Policies support waste, biodiversity, and emissions goals.	Progress measured annually, with updates on emissions reduction, energy savings, and waste minimisation initiatives.	Sustainability performance audited externally to ensure compliance with BS8555. Reports on alignment with the UN SDGs.
Uni C	Aligns with ISO 14001 standards, using structured environmental management systems for waste, energy, and emissions.	Carbon neutrality by 2030 tracked through annual reporting on emissions reductions, waste-to-energy, and sustainable travel initiatives.	Publicly shares progress via sustainability reports and works with stakeholders to ensure transparency and active participation.
Uni D	Operates under the Zero Carbon Masterplan, guided by scientific recommendations from the Tyndall Centre. Includes structured frameworks like Scope 3 tracking and green procurement policies.	Carbon budgets and regular sustainability reports track progress toward net-zero by 2038. Waste and recycling goals are benchmarked annually.	Reports progress via annual sustainability reports and audits, ensuring alignment with the Paris Agreement.
Uni E	Structured through the Environmental Sustainability Strategy, incorporating biodiversity net gain and alignment with local and global climate goals.	Annual reporting; Progress reviewed every five years, with specific targets for net-zero carbon, biodiversity, and waste reduction (e.g., 58% recycling rate target).	CMP-funded projects undergo detailed monitoring. Publicly reports on biodiversity, food sustainability, and emissions data annually.

Uni F	ISO 14001-Certified EMS; Aligns with UN SDGs, embedding sustainability across operations. Structured frameworks support waste, renewable energy, and carbon neutrality by 2030.	Annual reporting tracks emissions reductions, waste-to-zero initiatives, and renewable energy investments.	Transparent reporting mechanisms actively involve students and staff in shaping and monitoring sustainability progress.
Uni G	Operates an EMS certified to ISO 14001:2015, providing systematic management of environmental impacts across its campuses.	Progress measured through targets for net-zero carbon emissions for Scopes 1 and 2 by 2030 and Scope 3 by 2037/38, with updates via annual Environmental Reports.	EMS audits (internal and external) and Ec+F7:H8oCampus Platinum status achieved in 2013 reflect its commitment to compliance and improvement. Updates on progress shared publicly.
Uni H	Adheres to ISO 14001, embedding environmental compliance into all university operations. Focuses on Circular Economy principles for waste management.	Annual reporting measures progress on carbon neutrality goals, recycling programmes, and energy efficiency projects.	Audited annually for ISO 14001 certification. Engages staff and students through participatory governance to ensure shared ownership.

Table 5: Operational compliance
Source: Authors' own creation/work

Annual reporting and measurable outcomes are prominent, reflecting a sector-wide emphasis on tangible, auditable achievements. However, system-based integration—particularly within teaching and learning, research, and community engagement varied substantially.

To illustrate these differences, Table 6 maps the extent and character of sustainability implementation across the three core dimensions of higher education practice. The table highlights how some universities have embedded sustainability as a defining feature of institutional identity, while others demonstrate more fragmented or compliance-focused approaches.

University	Teaching and Learning	Research	Community and Cultural Engagement
Uni A	Sustainability integrated into the curriculum, fostering responsibility and sustainability-focused graduate attributes. Optional modules are primarily course-specific, not institution-wide.	Encourages research addressing environmental and social sustainability challenges.	Actively engages students and staff in sustainability initiatives, creating a shared culture of responsibility.
Uni B	Embeds sustainability into programmes, particularly focusing on justice and equity. Optional modules are limited in scope.	Cross-disciplinary research aligned with the SDGs, focusing on social and environmental justice.	Focuses on community-based projects and global partnerships to promote sustainability efforts locally and internationally.
Uni C	Sustainability embedded across disciplines, offering dedicated modules and fostering systemic thinking. Offers optional modules like "Sustainability in Practice" and interdisciplinary units open to all students.	Interdisciplinary research initiatives tackle global challenges, including climate action and social equity.	Collaborates with local authorities and external partners, enhancing impact beyond the campus.

Uni D	Aligns teaching with SDGs, integrating sustainability themes into courses to address global challenges. Includes optional interdisciplinary modules like the "Sustainability Challenge", available to all students.	Focuses research on real-world sustainability challenges such as biodiversity, climate change, and social justice.	Engages the community through local sustainability initiatives but lacks widespread participatory governance structures.
Uni E	Offers sustainability-focused modules and interdisciplinary teaching programmes. Optional units accessible to all students are limited.	Research contributes to global sustainability knowledge through institutes like the XXX School.	Participates in public engagement events and partnerships, though heavily reliant on hierarchical governance.
Uni F	Provides sustainability-themed modules and develops graduate attributes focused on climate action and social responsibility, available to students across disciplines.	Research addresses global sustainability challenges through interdisciplinary approaches.	Actively involves staff and students in shaping sustainability strategies, fostering a participatory and collaborative culture.
Uni G	Some efforts to embed sustainability into the curriculum, but these are not institution-wide or deeply integrated. No evidence of optional modules accessible to all students.	Limited evidence of sustainability-focused research.	Minimal engagement with local or global sustainability networks, with efforts largely operational rather than systemic.
Uni H	Sustainability is a core theme across disciplines, fostering interdisciplinary learning and systemic understanding. Offers optional cross-disciplinary modules like "Sustainable Futures", promoting participation from all faculties.	Research focuses on addressing critical environmental and societal challenges, often tied to the UN SDGs.	Strong community engagement through partnerships and initiatives like the Green Apple scheme, amplifying cultural change.

Table 6: System based approaches
Source: Authors' own creation/work

CDA of the institutional cases presented in Table V reveals three broad patterns of sustainability implementation across teaching and learning, research, and community engagement:

- **Transformative Examples** (e.g., Uni B, Uni H): Embedded sustainability within institutional identity, curriculum, research, and local partnerships, aiming for long-term cultural change and graduate capability development.

- **Research-Driven but Fragmented Models** (e.g., Uni D, Uni E): Prioritised sustainability-related research while offering limited, often optional, curricular initiatives, leading to tokenistic integration.

- **Compliance-Based Approaches** (e.g., Uni G): Aligned with external frameworks but demonstrated minimal curricular transformation or interdisciplinary collaboration.

Critical Analysis Discourse revealed significant discrepancies between policy rhetoric and practical enactment, particularly in relation to educational and cultural dimensions of sustainability. Participants note top-down priorities on measurable outcomes such as net-zero, over less-tangible educational and cultural integration, as illustrated in the quotes below:

> “The VC...sort of said, you know, we're putting so much funding behind net zero as like a focus because that's something that we've said we're doing by 2030. But arguably the education stuff

is going to affect more people because it's all the students that are then going to go out into the world and hopefully make changes." (P8)

"The university has committed £150 million already to the program, focusing on building-by-building retrofits, but embedding sustainability in teaching and learning doesn't get the same attention." (P4)

"We've been buying renewable energy to hit scope 2 targets, but broader efforts like embedding sustainability across the curriculum are still optional and limited." (P5)

Policy Implementation Theory underscores the role of policy flow—whether top-down (forward mapping) or bottom-up (backward mapping)—in shaping implementation outcomes. Several participants suggested that while leadership is pivotal, there is a dominant systemic preference for measurable outputs in governance and reporting.

The findings illustrate that:

- **Operational metrics** (e.g., emissions reductions, energy efficiency) received prioritised funding, leadership attention, and institutional support.
- **Systemic reforms**, especially within the curriculum, were treated as optional, often reliant on voluntary staff engagement, resulting in fragmented practice.
- **Academic freedom,** disciplinary silos, and inconsistent leadership support hindered whole-institution transformation.

Participants expressed concerns that sustainability was being treated as an "add-on" rather than a core educational priority, with universities promoting "optional sustainability" for staff and students. Rankings and external pressures further incentivised measurable outputs over holistic integration, reinforcing the phenomenon of greenpartitioning—whereby environmental achievements are foregrounded, but broader, systemic change remains partial.

These patterns highlight the importance of conceptualising sustainability integration as a continuum, ranging from fragmented, compliance-driven approaches to transformative, system-wide change. The findings underscore the need for tools, such as the SIF, to support HEIs in navigating these challenges and progressing towards meaningful, whole-institution sustainability transformation.

Impact

The findings reveal that while HEIs promote sustainability through rhetoric, rankings and operational reforms, implementation often remains fragmented, with P6 noting, "There's a bit of a mismatch, I think, between the kind of aspiration and then the kind of norms of business as usual". It is evident that measurable outcomes prioritised over holistic, systemic change, nevertheless, sustainability is increasingly shaping behaviours, institutional identities, and stakeholder expectations.

HEIs adopt varied approaches to embedding sustainability into daily practices, combining strategic initiatives with voluntary participation. Policies emphasise empowerment over obligation, using aspirational language to frame students as "leaders of change" (Uni F) or "global citizens" (Uni B). The policies use words such as 'encourage', 'equip', 'help' and 'normalise' reflecting a notion of voluntary participation, avoiding mandates that embed sustainability as a systemic requirement.

HEIs employ multiple mechanisms to influence behaviour, P2 observed that “there are really quite significant variations in how authentic different universities' engagements with sustainability really are”, highlighting that while some HEIs integrate meaningful mechanisms, others rely on surface level initiatives. Table 7 illustrates how these mechanisms are operationalised, demonstrating the different methods used to integrate SDGs, provide experiential learning, promote interdisciplinary collaboration and engage students through unique practices in teaching, learning and research.

University	Integration of SDGs	Experiential Learning	Interdisciplinary Approaches	Student Engagement	Unique Practices (Teaching, Learning, or Research)
Uni A	Aligns teaching with SDGs across disciplines.	Provides applied learning via sustainability-related workshops.	Encourages interdisciplinary projects on sustainability challenges.	Involves students in hands-on workshops and real-world projects.	Focuses on embedding sustainability across all disciplines with direct links to employability.
Uni B	Embeds SDGs in teaching via the SDG Teach-In and ESD initiatives.	Offers Carbon Literacy Training for real-world sustainability action.	Promotes cross-disciplinary projects through sustainability initiatives.	Encourages participation in Student Switch Off energy-saving programs.	Recognised for pioneering research-based Carbon Literacy Training integrated into the curriculum.
Uni C	Places SDGs at the heart of teaching and research.	Offers the Climate Education Course and sustainability workshops.	Supports cross-disciplinary sustainability challenges and research.	Encourages student participation in campus-wide sustainability events.	Created a dedicated Climate Education Course offered to all students, fostering broad awareness.
Uni D	Kitemarks SDGs on all degree programs. Has UCIL where students can undertake optional module	Applies learning through the Living Lab for campus sustainability.	Fosters cross-disciplinary collaboration to solve real-world problems.	Promotes student-led sustainability projects on campus.	Operates the Living Lab, enabling students to apply research to solve campus sustainability challenges.

Uni E	Focuses on sustainability principles in teaching and extracurricular activities.	Offers hands-on opportunities like the Good Gardener Campaign.	Combines research and teaching across departments on sustainability.	Engages students through Green Action Week and workshops.	Pioneers research-led teaching in biodiversity and climate change, with a strong focus on linking global challenges to local action.
Uni F	Aligns all teaching with SDGs through tailored courses and modules.	Provides carbon literacy training as part of practical learning.	Interdisciplinary sustainability courses offered across faculties.	Engages students through community-based sustainability workshops.	Provides research opportunities tied directly to the Carbon Neutrality by 2030 initiative.
Uni G	Aligns curriculum planning with SDGs and green culture goals.	Provides workshops to foster actionable sustainability skills.	Integrates sustainability into academic programs and campus operations.	Develops student-led sustainability campaigns and events.	Embeds sustainability into professional development and training programs for staff and students.

Table 7: Sustainability mechanisms
Source: Authors' own creation/work

Taken together, the examples reveal three dominate patterns of practice:

- **Structured initiatives** that create visible engagement opportunities (e.g., Uni B's community programmes, SDG Teach-In, Green Impact)

- **Operational interventions** that seek incremental behavioural change (e.g., Uni E's pragmatic behaviour nudges, environmental food labelling)

- **Evidence-informed programmes** that link directly to scientific research and global frameworks (e.g., Uni H's climate action initiatives grounded in IPCC research)

Operationally, HEIs demonstrate significant commitment to environmental sustainability, with targets aligned to net-zero ambitions and international frameworks. High-profile initiatives include:

- Net-zero carbon strategies (Uni D, E, H)
- Circular economy programmes (Uni H's Re-Store and waste reduction schemes)
- Ethical investment policies (e.g., Uni B's fossil fuel and arms divestment)

Larger, research-intensive institutions (Uni D, E, H) leverage greater financial capacity to advance operational reforms, while smaller HEIs (Uni A, B, F) pursue ambitious targets within resource constraints, illustrating that impactful change is achievable across diverse institutional contexts.

However, operational change often reinforces greenpartitioning—the prioritisation of measurable environmental outcomes over deeper systemic integration, particularly within curricula and cultural transformation.

P2 comments “The measure that we've defaulted to, rightly or wrongly, is the times higher impact rankings”, highlighting how quantifiable metrics have become the default proxy for sustainability. Indeed, HEIs seemingly pursue sustainability to enhance legitimacy, with many positioning themselves as global leaders through rankings, awards and research excellence. This reliance on external validation was empathised by P4 whom repeatedly referred to THE rankings throughout their interview, highlighting “we became third in the world”. This claim was echoed by their university documents which consistently cite their ongoing ranking in the top ten for six consecutive years, claiming. that the quality and scale of their impact against the SDGs in “unmatched”. Such narratives highlight how rankings can both legitimise sustainability and reinforce a narrow, reputationally driven conception of success.

Institutions deploy strategic narratives to construct identity and authority, exemplified by:

- **Uni E and D**: Emphasise pioneering research and global recognition, framing sustainability as both moral imperative and prestige-enhancing.
- **Uni H**: Blends civic engagement, student activism and local partnerships to portray itself as a first-mover institution, leveraging sustainability for reputational advantage.

- **Uni B, A and G**: Focus on compliance, structured governance and process-driven achievements to perform well in external rankings, such as the People and Planet League.

These narratives demonstrate how HEIs strategically curate their sustainability identities, but they also reflect sector-wide isomorphism, where universities mimic practices rewarded through rankings and external validation. While this enhances visibility and competitiveness, it may reinforce the prioritisation of operational, quantifiable actions over holistic social justice or equity initiatives.

Students emerge as active agents shaping institutional sustainability agendas, with P2 proclaiming “students are driving it forward” particularly in terms of curriculum reforms, influencing policy and contributing to civic engagement initiatives. Examples include:

- Student-led advocacy resulting in university-wide climate education (P3)
- Institutional resource allocation driven by student expectations (P8)
- Structured, paid student sustainability roles (Uni H)
- Integration of sustainability with employability through placements, clinics and careers services (P1, P2, P7)

While student engagement fosters tangible institutional responses, participation remains uneven, often dependent on voluntary involvement or career incentives rather than embedded educational priorities. HEIs risk reinforcing sustainability as optional, undermining its potential as a transformative, core component of higher education.

Staff engagement reflects similar tensions. While those involved report personal fulfilment and professional growth, systemic barriers persist:

- Sustainability perceived as an "extra" burden due to lack of workload recognition (P3, P7)
- Reliance on motivated individuals rather than institutional structures (P5)
- Voluntary initiatives leading to fragmented, inconsistent practice

P6 suggests that staff development has more potential than student education, stating:

> "There's a stronger case for it to be mandatory for leaders and staff than there is for students because, changing the way a member of staff does something is going to impact so many people".

Indeed, effective staff engagement requires integrating sustainability into professional development and leadership training, aligning with research calling for cultural shifts to embed sustainability as shared responsibility, not isolated goodwill (Sterling and Scott, 2008).

Societal impact is evident through HEIs' dual role as policy influencers and facilitators of grassroots change. Institutions contribute to national and international sustainability dialogues while providing experiential learning that equips students with green skills. However, systemic inconsistencies, resource constraints and market pressures limit transformative potential.

The analysis highlights a dynamic, cyclical model of sustainability impact, where:

- Institutional policies shape operations, curricula and stakeholder expectations
- Students and staff influence institutional priorities and societal outcomes
- External pressures, such as rankings and employability trends, feedback into institutional strategy

While HEIs have advanced tangible progress in environmental sustainability, curriculum reform and employability initiatives, deeper, systemic transformation remains uneven and vulnerable to resource constraints, normative pressures and performative tendencies. While greenpartitioning worsens, with measurable operational achievements privileged over holistic educational integration.

To address this, HEIs must:

- Embed sustainability into core educational and professional development structures
- Align operational, cultural and curricular reforms beyond reputational metrics
- Leverage both top-down strategy and bottom-up advocacy to achieve systemic, long-term change

Sustainability in HE remains in its infancy, but momentum is building. The findings underscore the need for tools such as the SIF to guide institutions from fragmented efforts to transformative, whole institution change aligned with societal needs and global challenges.

Discussion

The Paradox of Defining Sustainability

Despite decades of global discourse, the conceptual ambiguity of sustainability remains a persistent challenge within higher education. Existing literature highlights how broad, evolving interpretations and interchangeable terminology hinder accessibility and consistency (Cotton et al., 2007; Bessant & Tidd, 2009; Daramola, 2024). The absence of a universal definition is well documented (Leal Filho et al., 2024; Vogel et al., 2023), prompting scholars to frame sustainability as a 'wicked problem'—complex, context-dependent, and resistant to definitive solutions (Gulikers & Oonk, 2019).

Participants in this study echoed this complexity, with some (P1, P5, P6) questioning whether precise definitions are even desirable. They suggest rigid conceptualisations risk constraining the flexibility

needed to address the multifaceted, evolving nature of global sustainability challenges. This aligns with UNESCO's (2005) assertion that sustainability is "a constantly evolving concept," with fixed definitions potentially undermining its adaptability and relevance over time.

The research adopts a constructivist stance, recognising multiple legitimate interpretations of sustainability rather than seeking singular, absolute truths (Leal Filho et al., 2017; Vogel et al., 2023). While the traditional "three pillars" model—environmental, social, and economic (WCED, 1987)—continues to underpin policy discourse, findings reveal imbalances in practice. HEIs predominantly prioritise environmental sustainability, particularly within policy (Uni A–H) and senior leadership narratives (P4, P5), whereas grassroots advocates (P1, P2, P3, P8) emphasise social dimensions. Economic sustainability remains largely peripheral across both policy and practice.
This imbalance is reinforced by national legislative and regulatory frameworks, including:

- Climate Change Act (UK Government, 2008)
- Environmental Protection Act (UK Government, 1990)
- Sustainability and Climate Change Strategy (DfE, 2023)
- QAA Quality Code for HE (2024)

While these frameworks reference social and economic aspects, they offer limited guidance for HEIs to adopt truly integrated approaches. In contrast, global frameworks—such as UNESCO's Decade of Education for Sustainable Development (UNSECO, 2005), ESD for 2030 (UNESCO, 2021), and sector-specific guidance (Advance HE, HEA, QAA)—advocate for holistic, systemic integration. However, these remain voluntary, leading to uneven implementation across institutions.

The influence of neoliberal governance structures exacerbates this fragmentation. HEIs operate within audit-driven cultures (Strathern, 2000), shaped by accountability, metrics and performance rankings (Jarvis, 2014). Participants noted a disproportionate focus on measurable environmental outcomes, driven by frameworks such as the Teaching Excellence Framework (TEF), Research Excellence Framework (REF), and sustainability rankings, notably the THE Impact Rankings and QS Sustainability rankings.

This dynamic reinforces what P5 describes as the "quantifiability trap," whereby environmental outcomes, being easier to evidence, dominate institutional narratives. Consequently, sustainability is often reduced to a series of technical, operational targets—carbon reduction, energy efficiency, and waste minimisation—while social justice, equity, and long-term cultural transformation are deprioritised.

The SDGs offer a simplified, globally recognised reference point, with their accessible language and alignment with international metrics appealing to HEIs (P2, P3). However, engagement with the SDGs varies significantly. Some institutions (Uni B, D, H) adopt comprehensive, embedded strategies aligned with the SDGs, while others (Uni E) make minimal or purely symbolic references. Where SDGs are linked to rankings performance (Uni D), they risk becoming strategic tools for competitive advantage rather than drivers of systemic change.

Participants raised concerns regarding tokenistic engagement, with P8 cautioning that SDG alignment can become a "tick-box exercise," masking superficial actions behind the veneer of global legitimacy. This reflects broader critiques that SDG labelling risks greenwashing (Siano et al., 2017) or greenpartitioning (Ransome, 2025), where narrow, operationally convenient aspects of sustainability are privileged over more complex, less measurable dimensions.

Some participants (P1, P2, P3, P8) advocate for conceptualising sustainability as an integrative "lens," embedded across curricula, research, operations and governance. Yet institutional tendencies

towards compartmentalisation, driven by fragmented policy frameworks and accountability pressures, often silo sustainability into environmental projects, undermining holistic implementation. Research calls for stronger integration of sustainability into HEI quality assurance mechanisms to ensure alignment with global frameworks, teaching excellence, and long-term institutional transformation (Lozano et al., 2013; Leal Filho & Brandli, 2016; Leal Filho et al., 2020; Neary and Osbourne, 2018). Participants recognise the SDGs' potential as a valuable guiding tool but stress the need for authentic, systemic engagement rather than symbolic alignment.

The findings highlight a persistent tension: excessive rigidity risks constraining innovation, while excessive flexibility invites superficial, inconsistent practice. UNESCO (2005) cautions against static definitions of sustainability, arguing for a reflexive approach that evolves alongside global challenges. Ultimately, this study reveals HEIs navigating a conceptual paradox—balancing the need for shared principles with the adaptability required for meaningful, context-sensitive practice. The SIF, developed from this research, responds to this tension by providing guiding principles to support consistent yet flexible sustainability integration, enabling HEIs to move beyond fragmented, performative efforts towards embedded, transformative change.

The Sustainability Integration Framework

Despite increasing policy commitments towards sustainability, higher education institutions (HEIs) remain constrained by structural, cultural, and operational barriers that hinder systemic change (Lozano et al., 2013; Hofman et al., 2022). While policy rhetoric often promotes integrated and transformative visions, the analysis reveals a persistent disconnect between these ambitions and institutional realities, with many HEIs engaging in fragmented, operationally-driven practices that align with external expectations but fall short of embedding sustainability into their core functions. This phenomenon, known as greenpartitioning, reflects Sterling's (2004) critique of cosmetic reforms that avoid the deeper structural transformation required to meaningfully address global sustainability challenges.

Sterling's (2004) original 'bolt-on' to 'built-in' model offers a valuable conceptual foundation but lacks practical applicability within the complex, market-driven and resource-constrained environment faced by contemporary HEIs (Harvey, 2007; Korteling et al., 2023). It also overlooks the nuanced, incremental pathways institutions often follow, shaped by governance structures, competing strategic priorities, and external accountability pressures, such as those arising from sustainability rankings or national policy mandates (Strathern, 2000; Jarvis, 2014).

In response to these limitations, this research presents the SIF a pragmatic, staged model designed to reflect sector realities while promoting meaningful, long-term change. The SIF is conceptualised as a staircase, guiding institutions from fragmented, isolated efforts towards holistic, transformative sustainability integration. Unlike static models, the SIF acknowledges that progress is non-linear and context-dependent, requiring alignment across governance, operations, teaching, research, and institutional culture.

Crucially, the SIF builds upon Sterling's foundation but introduces defining features, principles, and practical guidelines for each stage, providing HEIs with a structured yet flexible tool to assess their current position and identify targeted actions for advancement. The framework deliberately balances operational pragmatism with system-based thinking, recognising that sustainable transformation requires both strategic leadership and incremental, context-sensitive implementation.

Figure 2 presents the SIF staircase, which is complemented with a comprehensive outline of the defining characteristics, principles, and guidelines in Appendix One.

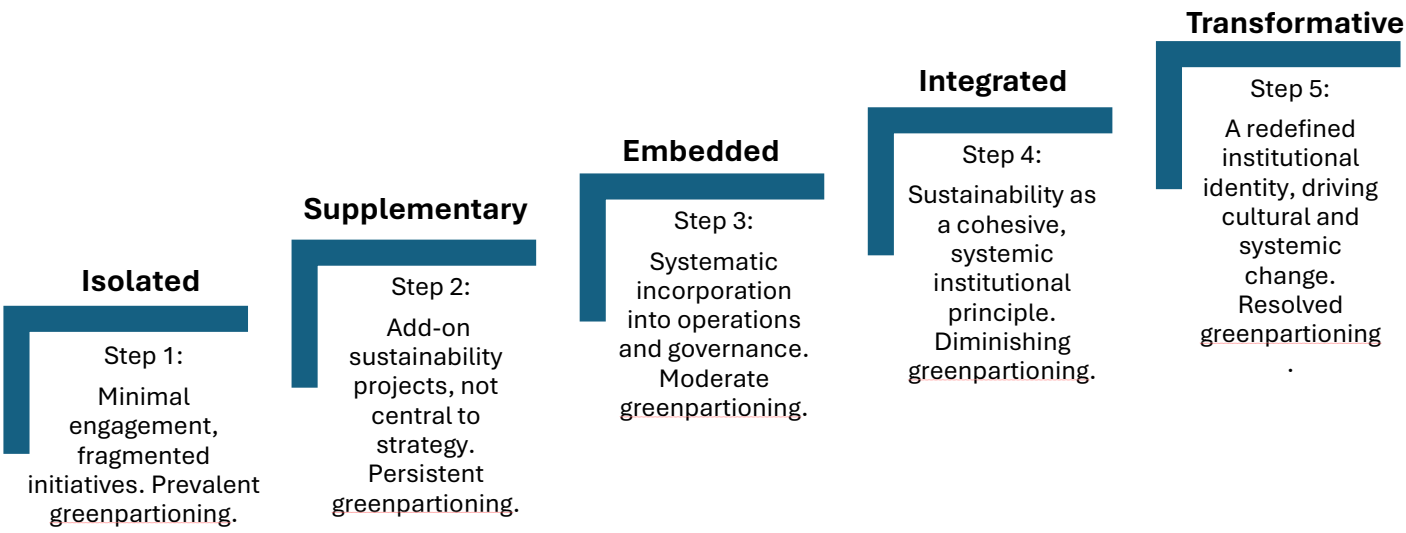

Figure 2: Sustainability Integration Framework
Source: Authors' own creation/work

Isolated Stage

At the isolated stage, sustainability efforts are fragmented, compliance-driven, and peripheral to institutional strategy. HEIs may implement ad-hoc initiatives, often in response to external policy requirements, but without integrating sustainability into governance structures, core values, or system-based approaches. Despite national legislative drivers rendering Sterling's (2004) 'denial' stage largely obsolete, many institutions remain in a reactive mode, fulfilling basic obligations while resisting deeper cultural or structural change.

Defining features of this stage include:

- Minimal strategic alignment of sustainability
- Operational actions prioritised over systemic reforms
- Greenpartitioning prevalent, with sustainability siloed in isolated projects
- Institutional inertia and entrenched norms impeding progress (Hofman et al., 2022)

HEIs at this stage require foundational interventions to embed sustainability within governance, leadership structures, and core institutional priorities.

Supplementary Stage

The supplementary stage reflects sustainability as an 'add-on,' with visible projects and operational improvements, yet limited integration into institutional systems or culture. While sustainability features in strategic documents, it remains peripheral to the dominant institutional model, aligning with Sterling's (2004) 'bolt-on' stage but incorporating an explicit recognition of incrementalism (Lindblom, 1959) and the resource constraints that shape institutional decisions.

Characteristics of this stage include:

- Emphasis on operational achievements (e.g., accreditations, ISO14001)
- Pockets of progress driven by motivated individuals or specific departments
- Evidence of piecemeal, affordable solutions
- Early leadership emerging but governance structures unchanged
- Risk of tokenism and superficial alignment with global frameworks

Institutions at this stage must transition from isolated operational gains to embedding sustainability within strategic leadership and institutional governance to prevent greenpartitioning from becoming entrenched.

Embedded Stage

The embedded stage signals a shift towards structured, systemic change, where sustainability is increasingly integrated into governance, operational systems, and educational practices. However, alignment remains incomplete, with policy rhetoric often outpacing practice and cultural resistance persisting among staff and stakeholders.

Key indicators include:
- Sustainability embedded within strategic plans and core values
- Incremental alignment of governance, operations, teaching, and research
- Reliance on volunteerism and goodwill rather than systemic mandates
- Resource constraints limiting full implementation
- Cultural tensions, with staff perceiving sustainability as an additional burden

While progress is evident, HEIs at this stage must address gaps in leadership, resource allocation, and staff engagement to achieve systemic alignment and reduce greenpartitioning.

Integrated Stage

The integrated stage reflects comprehensive, system-wide alignment, with sustainability informing governance, teaching, research, operations, and culture. Building upon Sterling's (2004) 'built-in' stage, this phase incorporates interdisciplinary working, systems thinking, and competency-based education, positioning sustainability as central to institutional identity and decision-making.

Defining attributes include:

- Senior leadership roles dedicated to sustainability (e.g., PVC, Academic Director)
- Sustainability embedded into all degree programmes in contextually meaningful ways
- Interdisciplinary research hubs addressing global sustainability challenges
- Cultural shifts promoting shared responsibility and stakeholder engagement
- Persistent challenges in resource allocation, social sustainability integration, and academic consistency

HEIs at this stage demonstrate significant progress but must address remaining inconsistencies, particularly around curriculum integration, social dimensions, and resource stability to avoid superficial implementation.

Transformative Stage

The transformative stage represents full institutional integration, where sustainability redefines organisational identity, values, and culture. HEIs become microcosms of sustainability, exemplifying innovation, inclusivity, and global leadership, while influencing external systems through knowledge

exchange, policy engagement, and collaborative partnerships (Christou et al., 2024; Žalėnienė and Pereira, 2021).

Features of this stage include:

- Sustainability embedded into all institutional functions and governance
- Participatory leadership and inclusive decision-making
- Whole-institution approaches encompassing environmental, social, and economic dimensions
- External influence through partnerships, benchmarks, and knowledge dissemination
- Absence of greenpartitioning, with sustainability fully integrated into culture and operations

Currently, no HEI within this research fully exemplifies the transformative stage, though institutions such as Uni H demonstrate significant progress towards this goal.

The SIF offers HEIs a pragmatic, evidence-based tool to assess their current position and navigate the complexities of sustainability integration. It recognises sector-specific constraints, including financial limitations, competing priorities, and neoliberal accountability pressures, while providing a structured, scalable pathway towards transformative change.
By adopting the SIF, HEIs can progress beyond fragmented, operationally-focused approaches, aligning sustainability with their core mission, fostering societal impact, and contributing meaningfully to global sustainability challenges.

Application

Having outlined the conceptual design of the SIF, its practical application is demonstrated within Table 8, by positioning each university on the basis of the Findings evidence.

University	SIF Stage	Rationale
Uni A	**Supplementary**	Fragmented projects and optional modules; strong ops but limited institutional embedding.
Uni B	**Embedded → Integrated**	Strong curriculum justice focus and cross-disciplinary research; governance still largely bottom-up.
Uni C	**Embedded**	Formal governance and cross-disciplinary initiatives, but integration beyond operations remains uneven.
Uni D	**Embedded (ops) / Supplementary (curriculum)**	High-profile operational reforms and SDG kitemarking, yet curriculum change optional and piecemeal.
Uni E	**Embedded (research) / Supplementary (teaching)**	Strong sustainability research institutes: curricular and engagement remain tokenistic.
Uni F	**Embedded**	SDGs aligned to courses, carbon literacy training, participatory governance emerging, but limited reach across staff culture.
Uni G	**Supplementary**	Compliance-driven EMS and governance; minimal curriculum or research integration.
Uni H	**Integrated (moving toward Transformative)**	Sustainability as institutional identity, cross-disciplinary teaching and research, and strong civic/community partnerships.

Table 8: Application of SIF
Source: Authors' own creation/work

The application of the SIF illustrates how UK HEIs are predominantly clustered within the supplementary and embedded stages, with only isolated examples (e.g., Uni H) demonstrating movement toward transformative integration. This reinforces the central argument of the paper: while sector-wide momentum is evident, sustainability integration remains uneven, incremental, and vulnerable to external pressures. The conclusion considers the broader theoretical, practical, and policy implications of these findings.

Conclusion

This study explored two central questions:

RQ1: How is sustainability defined and enacted within UK HEIs?
RQ2: What barriers and enablers influence meaningful integration of sustainability?

The findings demonstrate that sustainability remains conceptually ambiguous, with inconsistent enactment across governance, operations, curricula and culture. Two dominant discourses emerged: one which is metric driven, led by environmental interests and institutional leadership, and another emerging from grassroots values emphasising social justice, cultural change, and holistic practice. HEIs tend to prioritise measurable, environmental outcomes driven by compliance frameworks and rankings, while social justice and cultural change are often overlooked. The findings confirm that conceptual ambiguity is inescapable, with recurring tensions between operational, metric-driven strategies and holistic, systemic approaches.

With respect to RQ2, the analysis demonstrates that enablers of meaningful sustainability integration include senior leadership commitment, protected time and professional development for staff, transdisciplinary approaches to curriculum, and active student engagement. Conversely, barriers remain entrenched in institutional inertia, fragmented governance, and neoliberal market logics Together, these findings highlight the paradox of sustainability in HEIs: while momentum is building, systemic change remains partial and uneven.

The paper makes three scholarly contributions:

- It introduces the concept of greenpartitioning, theorising how genuine but fragmented efforts can become structurally siloed, limiting transformative progress.
- It advances Sterling's (2004) typology by developing the SIF as a practical diagnostic tool, accounting for neoliberal pressures, operational pragmatism and incremental institutional pathways
- It bridges theoretical and empirical scholarship by applying the SIF to eight UK universities, providing comparative insight into sector-wide trajectories of sustainability integration.

The findings reveal practical and policy implications at multiple levels; for HEIs, the SIF offers a pragmatic tool to self-assess their current stage of integration, identify areas of imbalance, and prioritise interventions that align governance, curriculum, research, and operations. For policymakers, the findings signal the need for clearer UK-wide guidance that goes beyond carbon targets to embed social and curricular dimensions of sustainability. For academics and practitioners, the research highlights the importance of professional development, workload recognition, and structural enablers that support cultural change rather than voluntary, goodwill-driven initiatives.

Limitations of this study include a Western, UK-centric literature base and empirical focus on English institutions and academic staff, which restricts generalisability. However, this localised focus

provides deep insight into the current UK HE environment. Future research should test the SIF in live institutional settings, conduct case studies with transformative HEIs, incorporate staff and student perspectives, and evaluate professional development's impact on sustainability.

In closing, this study argues that higher education must move decisively beyond fragmented, compliance-driven approaches. Only by embedding sustainability as a core institutional value—supported by strategic governance, transdisciplinary curricula, and authentic cultural change—can HEIs position themselves as catalysts for transformative societal futures.

Appendix One: The Sustainability Integration Framework: Definitions, Guiding Principles and Guidelines

Isolated Defining Features:

- Sustainability efforts are fragmented, existing as standalone initiatives with minimal connection to the institution's core strategy, governance, or operations.
- Reflects a limited or ad hoc approach, often motivated by external pressures or specific compliance requirements.
- Greenpartitioning is prevalent, with operational actions (e.g., energy efficiency, waste management) completely disconnected from broader svstemic or cultural reforms.

Isolated Principles:

- Visibility: Begin making sustainability efforts seen and acknowledged, even if small or disconnected.
- Legitimacy: All actions count; even fragmented initiatives are valid starting points.
- Curiosity: Encourage dialogue and exploration without needing full consensus or expertise.

Isolated Guidelines:

- Conduct a basic audit of current sustainability activity.
- Appoint a lead (even part-time) or working group to consolidate efforts.
- Develop a shared, institution-wide working definition of sustainability.
- Begin linking at least one initiative to strategy or policy.
- Build basic awareness through internal communications and staff/student engagement.
- Create space for staff and students to express ideas (e.g., forums, surveys).
- Introduce simple metrics (e.g., energy, recycling, participation).

Supplementary Defining Features:

- Sustainability is treated as an add-on to existing processes, with initiatives running parallel to core institutional functions rather than being fully integrated.
- Often focuses on visible projects or operational improvements without deeper institutional commitment.
- Greenpartitioning manifests here as a visible focus on operational projects (e.g., campus greening or solar panels) while systemic reforms in governance, teaching, or research remain secondary.

Supplementary Principles:

- Relevance: Sustainability must connect to institutional purpose—not sit beside it.
- Responsiveness: Respond to external pressures with intentional, values-based actions.
- Inclusivity: Broaden engagement beyond estates teams to include academic and student voices.

Supplementary Guidelines:

- Move beyond project-based thinking: link initiatives to curriculum, research, or governance.
- Develop a sustainability strategy that reflects all three pillars (environmental, social, economic).
- Map sustainability work across departments to reduce duplication.
- Assign leadership accountability (e.g., Pro-Vice Chancellor or similar) and formal reporting lines.
- Start embedding sustainability outcomes in operational plans and academic development.
- Provide sustainability training or CPD for staff.
- Pilot interdisciplinary, sustainability-focused modules or projects.

Embedded Defining Features:

- Sustainability is systematically included in key areas such as governance, operations, teaching, and research but is not yet fully aligned across the institution.
- Efforts are structured and consistent, often driven by compliance frameworks like ISO 14001 or equivalent.
- Greenpartitioning becomes less distinct but remains evident in uneven progress, with strong operational systems often prioritized over cultural and systemic transformations.

Embedded Principles:

- Consistency: Embed sustainability into key structures, not just where it's easy or visible.
- Accountability: Assign responsibility and ensure progress is monitored and reviewed.
- Balance: Recognise and act on all three sustainability pillars—environmental, social, economic.

Embedded Guidelines:

- Ensure all schools, faculties, and services have sustainability leads or champions.
- Embed sustainability in procurement, HR, estates, and quality assurance processes.
- Strengthen integration into curriculum using frameworks like ESD (Education for Sustainable Development) and QAA guidance.
- Use recognised frameworks (e.g., ISO 14001, SDG mapping) to drive consistency.
- Develop cross-departmental partnerships and reward innovation in teaching/research.
- Involve students and external partners in planning and delivery.

Integrated Defining Features:

- Sustainability is a guiding principle, influencing institutional strategy, culture, and practices across governance, teaching, research, and operations.
- Efforts are systemic, engaging stakeholders at all levels (staff, students, community) and fostering alignment with global frameworks like the SDGs.
- Greenpartitioning diminishes as institutions begin aligning operational outcomes with systemic reforms, ensuring all aspects of sustainability are

Integrated Principles:

- Alignment: Ensure institutional strategy, values, and practices are aligned with sustainability goals.
- Systems Thinking: Understand sustainability as interconnected, influencing all aspects of the institution.
- Collaboration: Foster horizontal and vertical partnerships across

Integrated Guidelines:

- Ensure sustainability is explicitly reflected in the mission, vision, and strategic plan.
- Foster whole-institution ownership: ensure all staff and students understand their role.
- Institutionalise interdisciplinary collaboration across research, teaching, operations, and civic engagement.
- Build robust participatory governance structures (e.g., sustainability boards with broad representation).
- Align all major decisions (e.g., capital projects, curriculum reform) with sustainability goals.
- Scale up successful pilots into core processes or programmes.
- Contribute to national/international frameworks (e.g., SDG reports,

Transformative Defining Features:

- Sustainability reshapes the institution's identity, driving systemic and cultural change to address global challenges innovatively and inclusively.
- Institutions are leaders in sustainability, integrating participatory governance, systems thinking, and societal impact into their operations, teaching, and research.
- Greenpartitioning is entirely resolved, as the institution integrates operational systems and systemic reforms seamlessly, setting benchmarks for holistic sustainability.

Transformative Principles:

- Equity and Justice: Sustainability must address power, access, and justice locally and globally.
- Critical Reflexivity: Regularly question assumptions and challenge norms that inhibit sustainable futures.
- Leadership through Learning: Embrace innovation, uncertainty, and co-creation as core to institutional evolution.

Transformative Guidelines:

- Co-create sustainability agendas with local and global communities.
- Lead the sector in publishing, benchmarking, and sharing best practice.
- Embed systems thinking, decolonisation, and climate justice into governance and pedagogy.
- Use sustainability as a lens for evaluating institutional impact and success.
- Create futures-focused learning environments—supporting resilience, complexity, and adaptability.
- Regularly review institutional values and frameworks to reflect planetary boundaries and social equity.
- Mentor other institutions and influence policy at sector, national, and global levels.

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