Towards transformative sustainable fashion education: The Fashion Business School's approach

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Abstract

This chapter explores how transformative sustainable pedagogies are being implemented in the Fashion Business School (FBS) at London College of Fashion, University of the Arts, London. Specifically, providing an understanding of how sustainability is embedded in the teaching and learning experience of fashion business students. Adopting Burns et al. Model of Sustainable Pedagogy (2019), this study takes a qualitative, multiple case study approach to showcase the transformative nature of Education for Sustainable Development (ESD) initiatives in order to inform future thinking in teaching and learning practices for fashion sustainability education. Across the five case studies and the four dimensions of Burns et al. model, our findings reveal 14 common aspects that emphasise a shift and advancement towards ESD within the FBS, resulting in seven key positive student outcomes. Limitations include ESD definitions, data and metrics. The case studies were not designed in accordance with Burns et al. model, thus their alignment to and evaluation against it is restricted. As fashion business educators, the deployment of ESD transformation frameworks are urgent, imperative and beneficial for framing curriculum development and improving accountability and measurement responsibilities. The study makes a valuable contribution to the emergent field of ESD and transformative T&L. It is one of few studies focusing on fashion business and SD and the only known study to explore diverse ESD initiatives and approaches collectively within a HE fashion business context. It both challenges HEIs and offers areas for improvement towards transformative sustainable education in fashion.

Keywords: Education for sustainable development, Fashion education, Sustainable pedagogy, Transformative learning, Fashion business.

Research paper

1. Introduction

The global fashion industry is a USD $2.4 trillion industry that represents 2 per cent of the world's gross domestic product and employs 300 million people across the value chain (Mukendi et al., 2020; United Nations Fashion Alliance, 2023). Whilst this sector plays an important role in the global economy, its contribution to social and environmental challenges is increasingly in the spotlight.

The current development and growth of the fashion industry is dominated by the 'fast-fashion' system characterised by vertically disintegrated, global, linear, and disconnected supply-chains, resulting in unlimited resource extraction, short-lived garment use and unsustainable waste management strategies (Munasinghe et al., 2021; Niinimäki et al., 2020; Sandin and Peters, 2018). Moreover, fast fashion is dependent on cheap labour which is associated with poor working conditions and repression of workers' rights (Peake et al., 2020). Despite widespread acknowledgment of the negative impacts, the industry has recently evolved into an era of ‘ultra-fast-fashion', leaving the industry ‘locked-in’ to overproduction and underutilisation (Dzhengiz et al., 2023, p.2).

Sustainable development (SD) recognition started to be part of the public discourse in the 1990s, and since then there has been a growing body of sustainability-focused research (Johnston et al., 2007). Yet, until recently, sustainability research focused on energy, housing, and agri-food systems, leaving behind textiles and clothing (Wang et al., 2019).

Transformational change is now essential and urgent for the fashion industry to achieve the sustainable transitions required to eliminate the integrated environmental degradation and social inequalities (Buchel et al., 2022, p.231; Dzhengiz et al., 2023). The task of instigating such transformation has preoccupied the nascent yet complex field of sustainable fashion (SF), with scholars attempting to address both pragmatic and radical change avenues, to transform mainstream practice across all levels (Mukendi et al., 2020).

There are several internal and external actors that play a key role in the transition, including policymakers, suppliers, engineers, retailers, civil society and consumers (Niinimäki et al., 2020). Some of these actors are already leading fundamental change in the industry. There are new policy guidelines such as the EU Strategy for Sustainable and Circular Textiles (European Commission, 2022), collaborative consumption models such as swapping and renting are expanding, and increased deployment of resource efficient innovations such as laser cutting or CAD (Computer Aided Design) (Buchel et al., 2022; Daukantienė, 2022; European Commission, 2022). In an industry like fashion, comprising a large and complex structure of stakeholders, education is regarded as a vital medium to foster and legitimise transformation in the industry (Mellick et al., 2021). As Sterling stated (2001, p.7), “the key to creating a more sustainable and peaceable world is learning”, and this sentiment is aligned with the literature on the potential for education to challenge current practices within socio-technical systems (Van Mierlo et al., 2021). It is argued that education and learning is critical to making these stakeholders question dominant practices, structures, behaviours, routines and cultures, among others, and foster transformational change (Van Poeck and Östman, 2021). More specifically, Higher Education (HE) sustainable education and learning can help accelerate sustainable transitions (Burns et al., 2019; Wang et al., 2022).

Whilst education and learning are gaining momentum in sustainable fashion research, it remains a developing field (Gam and Banning, 2020). There is a pressing need to prepare the future fashion leaders of tomorrow to play a role in the transition and explore diverse transformative teaching and learning pedagogies in which to do so.

University of the Arts London (UAL) is a leading creative and visual arts institution with more than 21,000 undergraduate and postgraduate students from 130 countries across six colleges and has been recently ranked as the 15th best and second-best specialist university in the UK (The Guardian, 2023; The Times, 2023). UAL is committed to climate action and to “lead change with a curriculum underpinned by climate justice” and it is ranked as one of the top five greenest universities in the UK (People and Planet, 2023; University of the Arts London, 2023).

London College of Fashion (LCF) is one of the six UAL colleges, and is a leading fashion college globally, educating the fashion leaders of tomorrow (The Business of Fashion, 2019). LCF offers 66 courses across its three schools, of which the Fashion Business School (FBS) offers 24. Whilst there is a formal UAL framework to address climate action, the FBS has also prioritised a shift towards conscious and responsible management. The school's strategy is formed around four pillars: Purpose, Planet, People, Profit, which shapes its teaching, learning, research and knowledge exchange activity.

The aim of our study is to fill the scholarly gap on how to adopt sustainable teaching and learning (T&L) in a fashion HE context to reach transformative learning and contribute to sustainable development. This study employs a selection of case studies from the FBS (within LCF) to assess the design and implementation of transformative sustainable education pedagogies.

The chapter is structured as follows: the next section presents a summary of the literature related to education for sustainability development within a fashion HE context and current pedagogic practices within the FBS. The subsequent section focuses on the research design, which is followed by the presentation of results. The final section discusses and concludes the study from which pertinent implications, limitations and future directions are drawn.

1. Literature review

1.1. Education for Sustainable Development: a focus on Higher Education

"Education for Sustainable Development (ESD) seeks to prepare learners for the varied and interrelated environmental, social and economic challenges they will meet as they confront a changing world" (Bell, 2016, p.48).

Education as a discipline is one of the most proven and powerful vehicles to build more resilient socio-ecological systems and has been part of the global sustainable development debate and political agenda since the 1990s (Veidemane, 2022; Wamsler, 2020). As a result of the momentum in this agenda, the United Nations (UN) established the World Decade on Education for Sustainable Development (2005 to 2014), as an essential path to encourage a shift in thinking, teaching and learning globally (Fischer et al., 2015). Since then, education has played a crucial role in the global sustainable development discourse (Fischer et al., 2015). Organisations such as PRME (Principles for Responsible Management in Education) are an example of a global education initiative, aimed at reforming business and management education towards delivering the skills and mindset of tomorrow's business professionals (Dickson et al., 2013; Godemann et al., 2014).

The literature demonstrates that fostering sustainable education in HE can promote sustainability mindsets and pro-environmental behaviours (Wang et al., 2022). There is scholarly evidence of how HE institutions are fostering the integration of SD internationally, employing a range of methods, such as conducting waste and energy audits, analysing the integration of SD competences in existing programmes and uncovering gaps to set SD practices, taking a whole-institutions approach for SD education or even exploring new models of sustainability learning (Cleverdon et al., 2017; Lambrechts et al., 2013; Shallcross and Robinson, 2008; Wang et al., 2022). ESD in Higher Education Institutions (HEI) is critical to build the capabilities of future decision-makers, entrepreneurs, and leaders to solve sustainability challenges (Findler et al., 2019; Lozano et al., 2017).

Specifically, in sustainable transition literature, education and learning are treated as relevant mechanisms of transformation, and scholars have conducted longitudinal research that demonstrates the effectiveness of ESD in students' action competence for sustainability (Olsson et al., 2022; Wamsler, 2020). Research has demonstrated the role that sustainable pedagogy in HE plays in the future of sustainability (Findler et al., 2019; Haigh, 2008). HE has enormous potential to accelerate sustainability in different contexts and cultures, and sustainability offers an opportunity for stakeholders and HE institutions to engage in new ways and create and cultivate sustainability knowledge (Stephens et al., 2008). As cited by Moore (2005, p.326), “Universities have the potential to be leaders in research and technology, teaching and learning, and community engagement”.

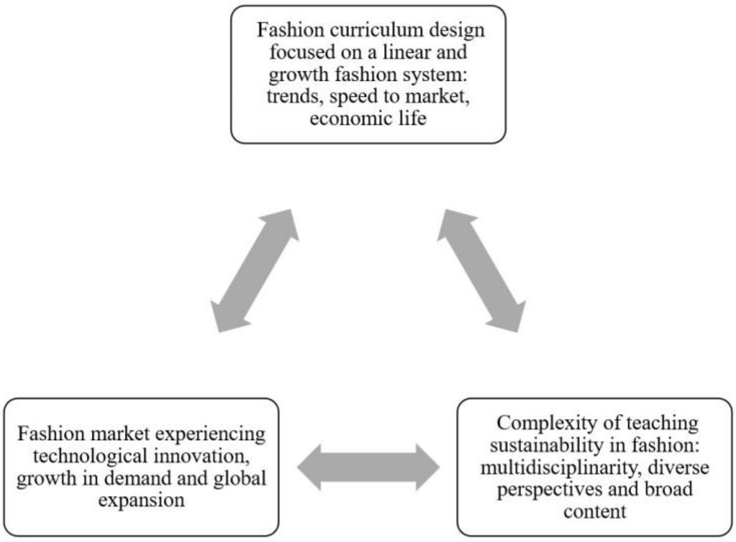
1.2. *Education for sustainability in Fashion HE*

In a HE fashion context, sustainability aligned curriculum is widely acknowledged as an urgent priority, since today's generation of fashion students will be tomorrow’s fashion professionals, and will play a key role as ‘agents of change’ (Pasricha and Kadolph, 2009, p.119). Fashion educators must make efforts to design and facilitate learning experiences that prepare students for the future, on both a professional and personal level (Pasricha and Kadolph, 2009; Wamsler, 2020). HE institutions and courses dedicated to fashion are the “epitome of knowledge creation and knowledge dissemination” and should play a proactive role in sustainability (Rao et al., 2020, p.289). Palomo-Lovinski et al. (2019, p. 364) posit, “if it is true that sustainable change is the most pressing issue of our time, then the question remains: why don’t the majority of fashion schools incorporate any sort of curricular or philosophical changes to meet these increasingly essential needs?”

To address this question, we identify three key scholarly tensions and challenges (see Figure 1). First, there is a conflict between the current organisation and development of the fashion industry and its sustainability ambitions, since the fashion system is linear and growth-focused and global production and consumption trends show no signs of slowing down (Buchel et al., 2022; Millward-Hopkins et al., 2023). As such, fashion discourse is typically based on the premise of trends, speed to market, growth in production and consumption, which complicates the integration of sustainability across fashion academic disciplines (Armstrong and LeHew, 2013). Secondly, the fashion industry is embracing technological innovations to speed up global production and consumption, for which future graduates must also be prepared (Daukantienė, 2022; Palomo-Lovinski et al., 2019) that may be at odds with sustainability approaches.

Thirdly, teaching sustainability in fashion courses remains complex. Fashion sustainability is multidisciplinary, since sustainability issues appear in every stage of the value chain (Pasricha and Kadolph, 2009). Taught content spans raw materials to production-consumption systems, not to mention the multiple ideologies that exist on ‘how to’ solve the problem (Abner and Baytar, 2019; Geels et al., 2015). Furthermore, the term sustainability suffers from a lack of definitional consensus (Mukendi et al., 2020), with differences apparent on how to best address sustainability in teaching and learning (Geels et al., 2015). With a proliferation of and shift towards specialisation of fashion courses, covering the necessary breadth and depth of sustainability content becomes increasingly difficult, arguably limiting the teaching of sustainability.

Figure 1. Fashion scholarly tension and challenges for sustainable curriculum transition (authors own)



It is acknowledged that sustainability should be interwoven throughout fashion education, yet it often remains limited to particular programmes or initiatives within fashion HE institutions and there is significant opportunity for progress (Moore, 2005; Palomo-Lovinski et al., 2019; Radclyffe-Thomas, 2018). Research shows that ESD T&L initiatives that have been implemented so far in a fashion HE context have had some success (Abu Bedor et al., 2021). The findings demonstrate that the implementation of ESD in fashion HE can lead to an increase in students' sustainability literacy, awareness, consciousness, knowledge, and attitudes towards sustainability and a sense of responsibility to implement sustainability principles into their future professions (Abner and Baytar, 2019; Armstrong and LeHew, 2013). Studies have shown that the implementation of ESD initiatives can be easy and manageable, and that there is generally a positive response from students towards its implementation (Armstrong and LeHew, 2013; Pasricha and Kadolph, 2019). One such example of individual behaviour change was attributed to a ten week experiential learning challenge conducted by Armstrong et al. (2016), called the 'Fashion Detox' project. They found that the experiential learning project provided rich experiences for fashion-oriented students that heightened their awareness of the barriers and benefits associated with reduced consumption.

The literature shows that educators have been proactive in integrating ESD initiatives into HE fashion education in the last decade (Agarwal, 2020; Armstrong and LeHew, 2013; Armstrong et al., 2016; Baytar and Ashdown, 2014; Jestratijevic and Hillery, 2023). Yet, despite general acknowledgement of the positive influence of ESD, there remains little research into how fashion HE can stimulate long-term and multi-dimensional ESD transformation in the curriculum. To the authors' knowledge, there is evidence of ESD in the following fashion areas: making (Armstrong and Lehew, 2013), merchandising (Baytar and Ashdown, 2014), design (Agarwal, 2020; Baytar and Ashdown, 2014; Gam and Banning, 2020) and individual consumption (Armstrong et al., 2016; Jestratijevic and Hillery, 2023; Henry and Michell, 2019), but a lack of understanding of how ESD is implemented in the fashion business field (Gam and Banning, 2020; Hall and Orzada, 2014, Murzyn-Kupisz and Holuj, 2021). As reflected by Landgren and Pasricha (2011, p.194), "A continuing challenge is making the concept of sustainability trans-disciplinary at an institution of higher education".

Most studies have been measured post-test with students, there remains a lack of studies exploring the validity of initiatives in embracing transformation (Abner et al., 2019; Palomo-Lovinski et al., 2019). Moreover, these studies focus on one specific ESD initiative (e.g., Armstrong et al. 2016) but there is a gap to explore diverse initiatives together, to compare, contrast and identify opportunities, which this study attempts to fill.

1.3. Transformative sustainable education in fashion

As critiqued by Bell (2016, p.48), "most discussions of 21st century education is premised on servicing, rather than transforming, the current global economy", and until now, HE has mimicked the unsustainable economic system in which it resides (Armstrong and LeHew, 2013; Colombo, 2023). The concept of sustainability is dynamic, inherently referring to the capacity of being able to "persist, sustain and endure" (Stephens et al., 2008, p.310). What is evident, however, is that to do this, new approaches and mechanisms in education are required (ibid).

Current fashion education models are focused on product outcomes and preparing students for the 'economic life' in a world premised on perpetual growth (Fletcher and Williams, 2013). However, there is an urgent need for deep socio-technical system transformation and sustainable fashion education should question and unpack the current accepted norms (Buchel et al., 2022; Fletcher and Williams, 2013). It is argued that the education paradigm should shift from a profit and growth centred perspective to one that balances economic, environmental, and societal elements (Landgren and Pasricha, 2011).

Moreover, in some fashion education institutions, there is a reliance on lecture-based curriculum design, that relies on cognitive knowledge to solve sustainability (Williams, 2016). Williams (2016, p.4) contends that fashion ESD should move towards "experiential, immersive and values-led" pedagogies, as learners' engagement is key to establishing ESD (Armstrong and LeHew, 2013). In addition, it is argued that there should be a reframing of learning theories and a move beyond behavioural and constructionist learning theories to active, collaborative and transformational pedagogies (Landgren and Pasricha, 2011).

The literature widely acknowledges and discusses the approach of "transformative education" (Bell, 2016, p.52; Geels, 2011) which proposes a move from conventional teaching models to new pedagogic models. By implementing transformative learning pedagogies students will acquire the necessary skills and competences to act and survive within today's planetary boundaries (Bell, 2016; Burns et al. 2019). The key elements of transformative education rely on action-oriented inquiry-based learning, systems-based learning, integrated and holistic approaches and creative use of technology (Bell, 2016). Moreover, this transformation in pedagogic approaches and incorporation of sustainability is being demanded by younger generations, who are looking for engaging, meaningful, multidimensional, and collaborative learning experiences, particularly in a HE context (Abner and Baytar, 2019).

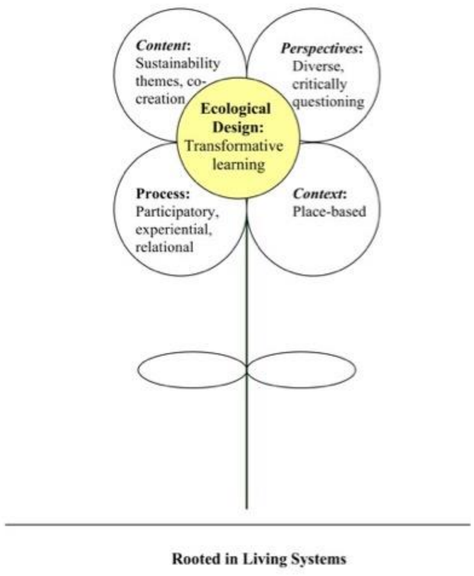
Some of the innovative T&L practices that have been explored in fashion ESD literature include engaged learning with real-world problem solving situations that students can identify with (Abner and Baytar, 2018; Armstrong and LeHew, 2013), experiential learning challenges (Armstrong et al., 2016), implementation of new technologies (apps) and media intervention (video as a story-telling) (Abner and Baytar, 2018; Baytar and Ashdown, 2014). Collaborative learning, shared knowledge and critical thinking are acknowledged as key pillars for transformational change (Armstrong and LeHew, 2013; Fletcher and Williams, 2013; Pasricha and Kadolph, 2009), and despite HE students' being receptive to a sustainability embedded curriculum, reluctance to adapt and adopt self-directed and collaborative learning (as opposed to traditional information giving) approaches persist (Landgren and Pasricha, 2011).

1.4. The Burns Model of Sustainable Pedagogy

Although different approaches have been used in ESD, this study draws on the theoretical framework developed by Burns et al. (2019), the 'Model of Sustainable Pedagogy' (see Figure 2). This model has been previously used to analyse fashion HE curriculum sustainability initiatives (Jestratijevic and Hillery, 2023). It offers a practical and adaptable approach to teach sustainability and recognises that ecological systems are the best teachers in the multi-dimensional perspective of teaching sustainability.

The model is rooted in transformative learning and ecological design principles (Burns et al., 2019). Transformative learning engages in-depth with the individual learner to change values and beliefs in a self-recognition and self-realisation process (Sterling, 2010; Tolliver and Tisdell, 2006). Ecological design implies that the design of educational content mimics the flow of natural systems itself, incorporating ecological principles such as diversity, resiliency or interconnectedness (Burns, 2009; Burns et al., 2019). The model comprises four elements that should be implemented altogether in sustainable pedagogy to reach transformative learning under the umbrella of ecological design: content (1), perspectives (2), process (3) and context (4) (Burns et al., 2019). The model proposes sustainability pedagogy content should cover an array of sustainability themes and encourage co-creation of content across disciplines. Diverse perspectives should be considered and conventional perspectives should be questioned to encourage critical and futures thinking. Processes and methods used to deliver the sustainable pedagogy initiative should be participatory, experiential and rational. And last, the context in which the sustainable pedagogy process takes place should be place-based and situated in a real-life context, real ecosystems, or communities. In summary, transformative learning happens "through engaging multiple dimensions of being, including the rational, affective, spiritual, imaginative, somatic, and sociocultural domains through relevant content and experiences" (Tolliver and Tisdell, 2006, p.38).

Figure 2: Burns et al. Model of Sustainable Pedagogy (2019)

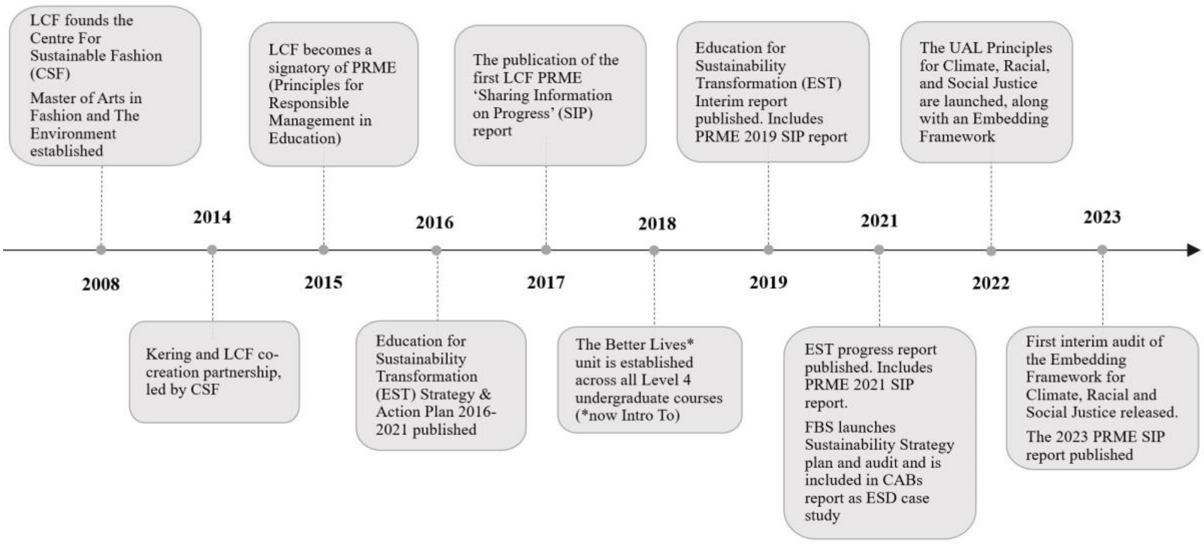


In our study, we aim to show how the design and implementation of the FBS's sustainability pedagogy initiatives integrate ecological design principles and the dimensions of the Burns Model, towards facilitating transformative learning.

1.5. *Fashion Business School, London College of Fashion, UAL*

This study reports on sustainable education T&L initiatives undertaken at the FBS, LCF, UAL. It is important to acknowledge the wider context of FBS to provide background into the case studies presented in our study. Over the past fifteen years LCF has steadily increased its focus on T&L development toward sustainable fashion education, and has utilised its significant internal, collaborative and external networks to accomplish several ESD milestones in that time (see Figure 3).

Figure 3: Fashion Business School, LCF ESD context and timeline (authors own)



In 2008 LCF founded the Centre for Sustainable Fashion (CSF) alongside the establishment of the pioneering Master of Arts in Fashion and the Environment course, which successfully employed participatory and experiential pedagogies to drive long-term change towards sustainability in the industry. The MA programme outcomes demonstrated practical insight into how fashion student work can emerge from an ecological paradigm (Fletcher and Williams, 2013). These portfolio developments signify a foundational milestone for LCF, in the development of internal pedagogical exploration and ESD initiatives.

The 'LCF x Kering' five-year partnership concluded in 2019 and evidences a shared commitment between academia and industry stakeholders towards sustainable education. The success of this partnership demonstrates the power of the co-learning experience for academic-industry collaborators (Fletcher and Williams, 2013; Williams, 2016). In 2015, LCF became a signatory of the PRME (Principles for Responsible Management in Education) (Radclyffe Thomas et al., 2018). The commitment to PRME requires signatory institutions to communicate their progress and commitments via a Sharing Information on Progress (SIP) report. This external auditing demands accountability and pushes HEIs to embed iteration into their T&L development, suggesting transformation as continuous rather than intermittent. Since 2016, the FBS specifically has been pursuing an Education for Sustainability Transformation Strategy (EST), the development and implementation of which is shaped around three features, 1) alignment with the UN SDGs and each of the six PRME principles, 2) structural innovation e.g., SET efforts are coordinated by a dedicated team and the employment of a Sustainability Lead to connect sustainability research with teaching and learning practices, and 3) students are challenged to "be the change", which is reflected in the launch of a cross-school first year UG unit (2018), designed around the four strategic pillars. These pioneering efforts towards ESD were recognised, when the FBS was included as a case study in the Chartered Association of Business School's recent report on Business Schools and the Public Good (CABS, 2021).

These examples of internal, collaborative and external initiatives from the wider perspective of LCF offer deeper insight into the context of the presented ESD cases in this study. Drawing on the theoretical framework of ESD and sustainable pedagogy our study seeks to fill the lacuna in sustainability T&L in fashion business HE and contribute to the developing field of ESD. Our overarching research question guiding the research design is: How is sustainability embedded in the T&L education experience of UG and PG fashion business students?

2. Methodology

2.1. Case studies

To address the research question, we draw on qualitative multiple-case study research using five individual case studies as the units of enquiry, highly suitable when asking how or why questions to elicit in-depth descriptions on contemporary phenomenon within its real-world context (Stake, 2006; Yin, 2018). Specifically, adhering to replication procedures (Yin, 2018), we apply Burns et al.'s construct (2019) to show the depth and breadth of sustainable (ESD) pedagogy practices within the FBS (Miles and Huberman, 1984). The cases selected are temporal in that they include past, current and future pedagogies (see Table 1), yet their central tendency is that they illuminate ESD decision making (Yin, 2018 based on Schramm, 1971). Case studies are an appropriate approach as they have been widely used in previous sustainable education studies (Burns et al., 2019; Fletcher and Williams, 2013; Gam and Banning, 2020; Pasricha and Kadolph, 2009; Radclyffe-Thomas et al., 2018; Williams, 2016).

2.1.1. Case and data collection

To conduct this study, a purposeful sampling approach (Patton, 2014) was taken initially by selecting educational programs (Yin, 2018) that demonstrate sustainable pedagogical approaches to teaching and learning. We then adopted replication logic ensuring that each case selected shared similar characteristics (i.e., sustainability T&L) and therefore were likely to elicit similar results to evidence the phenomenon under investigation, specifically, the integration of the four key dimensions of sustainable transformative pedagogy: content, perspectives, process, and context. It is widely acknowledged that findings are likely to be strengthened by including two or more cases, compared to a single case, leading to the possibility of direct replication (Eilbert and Lafronza, 2005). With this in mind, we selected cases that represented ESD on a cross-school, course, unit (module) and extra-curricular level, within both UG and PG fashion business and management programmes, representing a three-year period of curricula development, 2020-2023.

A case study protocol was designed and adhered to in the data collection phase. The research design was informed by the theoretical framework deduced from the literature, specifically applying the dimensions of Burns Model of Sustainable Pedagogy (2019) in the design of the research instrument. The five descriptive cases were investigated using structured interviews with key informants (i.e., School Dean, sustainability course, module or activity leaders) and documentary information (e.g., course or module handbooks, student and relevant stakeholder evaluations) in combination with the theoretical framework. Triangulation from different sources of evidence serves to strengthen the case study findings and boost the case study's construct validity (Lincoln and Guba, 1985; Yin, 2018). A structured interview was conducted through an online questionnaire, augmented by a short follow-up online interview (via Microsoft Teams) to fill any gaps and strengthen the descriptions (Fontana and Frey, 2000; Seidman, 2013). In total, 6 interviews were conducted, between June-August 2023, lasting c.40-minutes each. The interview protocol included questions about the sustainability pedagogy initiative, for example, specificities concerning the *educational process*, *ecological design* vision and implementation, *sustainability content*, the incorporation of *diverse perspectives*, *process utilisation* (to what extent they are active, participatory, experiential and relational) and the pedagogic *context*. Each of these dimensions related directly to Burns' Model (2019). In addition, we asked for stakeholder feedback on the initiative to elucidate as to the nature and extent of improvements related to ESD practices within the school. The data was downloaded and/or recorded and transcribed verbatim.

Table 1: Fashion Business School sustainable pedagogy case selection (author's own)

Burns et al (2019) Sustainable pedagogy dimensions	**Cross-school**	**Course**	**Unit**	**Extra-curricular**
***Ecological design:* transformational learning** ***Content:* sustainability themes, co-creation** ***Perspectives:* diverse, critically questioning** ***Process:* participatory, experiential, rational** ***Context:* place-based**	**PG cross-school Collaborative Challenge Unit:** This unit runs across 18 postgraduate fashion courses. Taking an interdisciplinary approach, students address different challenges affecting the fashion landscape. Our study selects a high impact sustainable case centred on design activism to build sustainable futures and benefit local communities.	**MA Fashion Marketing and Sustainability course:** This course launched in September 2023. It is intended for the next generation of highly motivated, purpose-led business leaders who seek to drive transformative innovation for necessary change. Sustainability, social equity and regenerative practices are embedded throughout teaching and coursework, within each unit.	**Sustainable Design Thinking Unit (within MA Fashion Design Management):** A practice-based research unit in which students explore solutions for a self-chosen sustainability challenge addressing their selected Sustainable Development Goal. Design thinking is used as a method to explore, test and revise. **Responsible Management Unit (within BSc Fashion Management):** This unit launched in September 2023. It is intended to provide a practical understanding on how the fashion industry approaches social and environmental concerns, placing emphasis on	**Responsible Retail Immersion (MA Global Fashion Retailing):** A 3-day experiential-action based learning initiative, comprising a student-led responsible retail symposium, sustainability field trips and a hackathon in partnership with the YNAP (Yoox Net-a-Porter) sustainability team.

			challenging and critiquing business practices. The outcome requires students to research a business, critique their impact, and develop a transformative business strategy to address the environmental and social concern.	

2.2. Data analysis and rigour

The data were analysed thematically, following an established process (Braun and Clark, 2006; Gibbs, 2007) including data familiarisation, initial code generation, theme searching, theme reviewing, theme defining and naming and write up. By systematically identifying themes, findings related to aspects of the Burns' (2019) theoretical framework were identified and organised. Excerpts from text were used to illustrate specific themes and gain interpretative understanding (Miles and Huberman, 1994; Stake, 2006). In addition, these were cross-referenced with the documentary information. In this way, we were able to identify direct replication of results.

In adherence with the validity and reliability criteria for judging the quality of qualitative research designs, construct validity was enhanced by using multiple case studies, multiple sources of evidence and the case report was returned to key informants for checking. Moreover, external validity was achieved by using a theoretical framework to guide the protocol design as well as replication logic. Finally, reliability was boosted by procedure transparency including the use of a case study protocol, case study database development (including the codebook) and chain of evidence to guide the data collection and analysis procedures (Gibbert et al., 2008; Yin, 2018).

Ethically, the study was conducted in accordance with the UAL Code of Practice on Research Ethics (UAL, 2020). Specifically, care was taken to gain informed consent from all informants by way of providing information about the study and requesting their voluntary participation. Additionally, informant privacy was protected by granting anonymity in exchange for participation.

3. Results

First, we present the main results for each individual case according to Burns' Model dimensions, as depicted in Table 2. Next, we present the cross-case results thematically to show how each of the model's dimensions are evidenced in the FBS. In doing so, we showcase the transformative nature of the ESD initiatives and ecological design pursued as well as their impact thus far.

Table 2: Fashion Business School ESD initiatives by individual case study (author's own)

Sustainable pedagogy initiative / Burns Model dimensions	**Collaborative challenge unit**	**MA Strategic Marketing & Sustainability**	**Sustainable Design Thinking Unit**	**Responsible Management Unit**	**Responsible Retail Immersion (3-day event)**
ESD specifics	Cross-course: Extra-curricular activity	Programme: MA Marketing & Sustainability	Unit: MA Fashion Design Management	Unit: BSc Fashion Management	Extra-curricular activity: MA Global Fashion Retailing

	across 18 PG courses				
Duration	12 weeks	12 months	12 weeks	12 weeks	3 days
No. students	c. 30	c. 40	48	c.100	48
Content (1)	Co-designed content: collaboration of interdisciplinary teams. Research, technology, alumnus, industry, cultural and academic partners.	Multidisciplinary content developed through student and industry focus groups, industry and academic interviews. Co-creation of content at design stage with industry practitioners.	Thematic design of the unit content: explanation and evaluation of each stage of the Design Thinking process through relevant texts, theories and examples.	Theme diversity: weekly lectures spotlights a specific theme (e.g., greenwashing and misinformation). Multidisciplinary perspective: political, economic, psychological, social and equality issues.	Multidisciplinary content: students, industry and academic-led activities. Co-creation of themes: knowledge sharing and feedback on activities' outcomes
Perspective (2)	Standard approaches, or practices are decolonised through student briefs. Probing, questioning. New models of sustainability explored.	Knowledge exchange within community and with external inputs. Critical thinking student tasks. Global North and South speakers.	Critical exploration of the design thinking process. Interactions led by industry guest speakers/tutors offering a diverse range of perspectives.	Debates around contemporary approaches to leading and managing fashion for a fair and sustainable future. Interrogation of responsible management strategy. Challenge and critique of current business practices. Exploration of plural truths and conflicting narratives. Geographical/cultural diversity discussions.	Diverse types of learning experiences (student-led symposium, field trips, hackathon). Multiple perspectives and knowledge exchange among students, academia and industry practitioners: generation of deeper, broader and more meaningful ideas.
Process (3)	Initiative based on collaborative theory. Shared expertise and insights: students work with partners actively, through conducting research or pushing ideas with the help, support and feedback of industry or cultural partners.	Roundtable discussions and brainstorming in seminars. Constructivist school of thought: integration of students into a knowledge community and collaborative assimilation. Group work assignments.	Experiential e.g., seminar for students to experience each stage of the design thinking process themselves. Regular opportunities for self-reflection. Participatory: students work in small teams to explore and critique aspects of the Design Thinking Framework.	Unit delivery rooted in discussion: key role of the 'student voice'. Discussions that prioritise peer to peer dissemination of ideas and findings.	Co-created collaborative practice and peer to peer learning approach. Student-led activities demanding proactive participation, synergistic, critical thinking, problem-solving, future thinking.
Context (4)	Collaborative working towards a shared goal or wholly sustainable content (students brought face to face with challenges, with people and communities). Research project centred on design activism takes key	Seminar content based on up-to-date case studies. Regular field visits to sustainability focused knowledge networks in East Bank including Lab E20 and The Trampery.	SDG choice for unit assessment (Goals 8,9,10, 12). Students create an actionable design brief to find a potential solution to a specific real-world problem, placed in a real-world situation. Field trips related to sustainability e.g., Wastage exhibition	Research of an existing business and critique of their current impact (real-life business case). Contextual approach in a variety of ways: community cultivation, local observations and orientation, and the	Real-life and place-based experiences: field trips to contextualise sustainability learnings through an educational (Fashion for Good Museum) and designer business (Raeburn Lab) lens.

	social, economic and education pillars to tackle issues faced by multicultural communities, youth and manufacturing businesses in Waltham Forest, to create counter-narratives towards sustainability in fashion, to make a change. Research-based project, feeding into the wider research endeavours of individual LCF researchers and CSF.		Design Museum and Textile Recycling Facility East London	context of global citizenship.	Implementation of fashion sustainability in luxury retail with real-case company scenario (YNAP).

3.1. *Content*

When analysing the content dimension of the Burns et al. (2019) model, three themes were identified. (1) *Co-design and co-delivery* of content were evidenced, due to a mixed input from students, academic, industry and cultural partners in the design and delivery of the ESD activities. An example of *co-design* can be found in the MA Marketing & Sustainability course that used student and industry insight to design the content. An example of *co-delivery* is the 'design activism' project of the Collaborative Challenge unit, in which partners from the Centre for Sustainable Fashion delivered a series of masterclasses and presented their approaches to fashion activism, discussing themes around fashion localism, design thinking, diversity, representation and legacy.

The (2) *multidisciplinarity* of the content was a present theme in all the initiatives. This theme is exemplified in the Collaborative Challenge Unit, which draws on bringing together students from different academic backgrounds to create interdisciplinary teams centred on design activism. In the project, students from MA Fashion Journalism, MA Fashion Futures, MA Strategic Fashion Marketing, MA Fashion Design Management and MA Fashion Photography worked together. The project supervisor stated that the co-creation, and leverage of team diversity presented a "unique opportunity to work across disciplines".

A (3) *thematic* approach to the concept of sustainability was found across the ESD initiatives. An example is the Responsible Management unit, in which each week the lectures and seminars will spotlight a specific theme from 'greenwashing and misinformation' to 'identity and justice'.

The above themes align with Burns et al (2009; 2019) vision of design for content, which claims that content should be co-created, and that an interdisciplinary understanding of sustainability is required, given the complex nature of the issue of sustainability itself.

3.2. Perspective

There were four common aspects identified in the perspectives dimension: (4) *diversity, (5) knowledge exchange, (6) critical thinking* and (7) *interrogation*.

Across the initiatives there was (4) *diversity* in terms of learning experiences, perspectives, fields and individual backgrounds. The Responsible Retail Immersion exemplifies the inclusion of diverse learning experiences, since it combined a student-led symposium, field trips and a Hackathon with a real business. Another common aspect across the initiatives was the prevailing (5) *knowledge exchange* among students and the ESD initiative partners (academics and industry practitioners), and among the students themselves. The MA Marketing & Sustainability course, for example, will invite guest speakers from around the Global North and South to speak with students and share their experiences, offering a diversity of perspectives. Moreover, one of the students participating in the student-led symposium of the Responsible Retail Immersion stated, "I have gained so much from the symposium, not only in terms of the knowledge shared by my course mates, but also the way they chose to present their research and the mindset they use to think about the outcome that others produced".

(6) Critical thinking was an aspect encouraged in all the ESD initiatives. In the Sustainable Design Thinking unit, students work in small teams to explore and critique the empathise, define and ideation phases of the Design Thinking Framework (DTF). One of the students reported, "it has helped me understand that it is important, especially in a world as uncertain and complex as ours, to see further, to be open to new questions and to let ourselves be destabilised by creativity in order to identify effective solutions". When it comes to (7) *interrogation*, throughout the ESD initiatives, standard approaches or practices to address sustainability are challenged and interrogated. This is exemplified in the Responsible Management unit which is rooted in challenging contemporary approaches to leading and managing fashion for a fair and sustainable future. To achieve this, applying diverse and radical perspectives are encouraged. It searches plural truths and conflicting narratives, acknowledges that fashion responsible management is a complex, changeable, and contradictory subject which requires the learner to challenge conceptions of knowledge; their own knowledge and that of others.

Thus, in the perspectives dimension, there is evidence of the diversity, exchange of knowledge and critical interrogation that is encouraged throughout the initiatives, which is key, because learners should be introduced to a variety of perspectives of the sustainability theme (Burns et al., 2019). From a fashion business standpoint, encouraging the incorporation of non-dominant perspectives is of particular importance given that current T&L practices within the field are focused on training students for the economic life, and there is a need to systemically change the fashion ecosystem (Burns et al., 2019; Fletcher and Williams, 2016; Niinimäki et al., 2020).

3.3. Process

Within this dimension, four key shared aspects emerged that demonstrate the process dimension according to Burns' model.

First, all initiatives were firmly rooted in a (8) *collaborative and participatory process*. Indeed, the Collaborative Challenge Unit was conceived and constructed based on Collaborative Learning Theory (Laal and Ghodsi, 2012). Student participation in T&L is typified in the 'Retail Hot Topics Shaping the Fashion Industry' student-led symposium, that formed one of the three days of the Responsible Retail Immersion initiative. This activity demanded students' proactive participation, synergistic and deep collaborative thinking. Moreover, the MA Marketing & Sustainability builds on the constructivist school of thought and looks for the integration of students in a knowledge community for collaborative assimilation. A (9) *peer-to-peer learning* approach in which feedback between students is encouraged depicts the second shared aspect. Students participating in the Sustainable Design Thinking Unit reported, "I particularly enjoyed brainstorming, ideating solutions and sharing my ideas" and "it was beneficial to attend my classmates' presentations and listen to the comments they received". Thirdly, the ESD initiatives were primarily (10) *teamwork* based, with each giving credence to the 'student voice' in the T&L journey. Finally, some of the ESD initiatives encourage (11) *experiential learning* approaches. For example, in the Sustainable Design Thinking Unit students are encouraged to experience each stage of the Design Thinking process themselves. In this way, it brings the learning to life and makes it more meaningful.

These aspects demonstrate the participatory, collaborative and experiential nature of the ESD initiatives process, mainly rooted in teamwork, which emphasizes the importance of community to learning (Burns et al., 2019).

3.4. Context

Lastly, within the context dimension, three aspects were covered across the ESD initiatives. Firstly, the students were encouraged to participate in (12) *place-based experiences*. The Sustainable Design Thinking Unit included visits to the Wastage Exhibition at the Design Museum and a Textile Recycling Facility in East London. The Responsible Retail Immersion included field trips to the Fashion for Good Museum, Amsterdam and Raeburn Lab, London. In the Raeburn Lab, designer Christopher Raeburn shared his brand's sustainability story and showed how sustainability is considered from materiality to place of consumption. Students got the chance to touch and try on product and interact directly with the team regarding circularity. One of the students who participated in the visit reported, "it was great to see RÆBURN taking such a strong standpoint on responsible design, implementing this within their products and business model".

Secondly, (13) *real-life case-studies* provide a compelling context by bringing the learning to life. For example, in the Responsible Management Unit, students will be required to research a business, critique their current impact, and develop a transformative business strategy to address the principle environmental and social concern, enabling connection with a real-life business scenario to deepen their learning. Another example is the Yoox Net-a-Porter Hackathon, part of the Responsible Retail Immersion, which challenged students to deploy creative, critical thinking and problem solving skills by proposing solutions to the sustainable luxury challenge posed. In doing so, it enabled students to connect learnings to a real-life business issue. A student attending the Hackathon shared, "I enjoyed deconstructing and brainstorming the brief with my team members and having an intense engagement with YNAP".

Last, a deeper (14) *Immersion* was applied in some of the ESD initiatives for students to contextualise their sustainability learning. In the Collaborative Challenge Unit, students directly encounter challenges, people and communities. In the 'design activism' project, students were given an opportunity to tackle issues faced by multi-cultural communities, youth and manufacturing businesses in Waltham Forest, London. The students undertook a process of thinking and making together, exploring ways in which fashion and making can be used as catalysts for positive change.

Overall, the ESD initiatives make use of real-world business and sustainability issues to enable students to develop solutions through their T&L journey and encourage place-based learning to connect students to their learning, an essential aspect of transformative pedagogy (Burns et al., 2019).

3.5. ESD initiative impact

In all cases, the ESD initiatives provided opportunities for students to engage in *critical self-assessment and reflection* of the shift in skills and attributes learned through undertaking the initiatives. The priority of transformative learning is the development of personal, intellectual and socio-cultural skills to deal with sustainability challenges, with a shift in personal values being a key driver for transformational learning (Burns et al., 2019; Tolliver and Tisdell, 2006). The priority of the new ESD approach at the FBS is “mindset change" (Dean Interview, 2023). This mindset change will lead to the transformation of values and culture across societies and communities, which is one of the key steps to embrace sustainable holistic change (Burns et al., 2019).

To assess the impact of the ESD initiatives, stakeholders (students, teachers, partners) were asked for feedback to elucidate the nature and extent of improvements related to ESD practices within the school. For the three initiatives that have taken place, five categories of positive impact were identified relating to 1) student *inter-personal skills* through the co-creation, organisation and communication required, 2) *mindset* development and shifts necessary for transitioning the fashion industry towards a more sustainable future, 3) Improved *quality and rigor* of subsequent assessments, given the ESD initiative involved experimentation and the opportunity to interrogate a topic of personal interest to the student, 4) improved *criticality*, the interplay between academics and practitioners enabled sharing of different perspectives that served to strengthen the learning experience and 5) *broader and deeper learning* through the intersection of theory and practice and exposure to multiple perspectives.

For the two ESD activities that have yet to be implemented, the anticipated impact includes; 6) through assessment, with students engaging in *reflective* writing to capture their transitioning journey throughout the unit and 7) formal student feedback mechanisms on content, delivery mode and organisational elements to ensure the embodiment of *T&L co-creation* between students and academics on this dynamic and complex field.

4. Discussion and conclusion

The urgency for sustainable transitions in the fashion industry creates an imperative opportunity for the development of new skills and aptitudes among students that need to be cultivated in fashion HE (Buchel, 2022; Moore, 2005). The responsibility of FBS to educate tomorrows ‘agents of change’ given their delivery of 24 fashion business courses and its international student body, becomes evident (Pasricha and Kadolph, 2009; Radclyffe-Thomas, 2018). As posited by Moore (2005, p.326) there is an “obligation” for universities to lead this change given their power in the transition and the role of education and learning in SD (Burns et al., 2019; Fischer et al., 2015; Sterling, 2001; Van Mierlo et al., 2020).

Our findings evidence this T&L obligation is permeating curriculum development through a shift towards ESD in the last few years. This resonates with the perspective that the journey towards transformation of HE for sustainability is itself, a transition (Williams, 2016). At the FBS the implementation of ESD originated from extra-curricular and unit level development and is pervading the school portfolio as shown, by the launch of a dedicated sustainability programme. The newly formed course MA Marketing & Sustainability is set to become the new FBS “flagship course” (Dean interview, 2023; Palomo-Lovinski et al., 2019), and further strengthens the FBS strategic pillars.

This journey towards transformation evidences a counter current approach in the FBS curriculum development strategy; combining top-down curriculum reform through the launch of a new flagship sustainability focused course, alongside a bottom-up approach in the embedding of explorative and pioneering project briefs and extra-curricular activities. A bottom-up approach relies heavily on the beliefs and motivations of business educators where the responsibility of ESD is “often left to a small core of passionate and/or specialist educators” (Radclyffe-Thomas et al., 2018, p.91). Moreover, from a top-down perspective, the furthering of business school cultural change towards ESD responsibilities is necessary to reject what Colombo calls the, "culture of the wider business environment; dominated by competition, self-interest, greed, and short-termism" (2023, p.132). The formal deployment of transformation frameworks such as the Burns et al. model (2019) would benefit fashion business HEIs accountability and measurement responsibilities, and guide curriculum development independently of staff ESD literacy and alignment, and legacy business school cultures.

4.1. Implications, limitations and future research

The cases selected in our study were not designed in accordance with Burns et al. (2019) framework and yet were found to resonate with many characteristics of ecological design, which suggests they are highly representative of ESD techniques. In addition, this study identifies three applicable ESD approaches, firstly, in the inclusion of diverse perspectives to encourage criticality and acknowledge the complexity of the subject. This discourse centred design deviates from traditional teaching methods and the emphasis on knowledge and facts, and instead prioritises active, collaborative and transformational pedagogies (Landgren and Pasricha, 2011). Secondly, a change in approach provides an opportunity to innovate the tools and technologies selected for teaching. Finally, the centring of multidisciplinary and immersive 'real-world' experiences encourages individual mindset value change for students (Williams, 2016).

However, we also recognise three distinct limitations. First limitations pertaining to definitions, data, and metrics – both as a result of the design of this study and endemic to ESD investigations. Whilst environmental sustainability is frequently mentioned in the cases, there is limited evidence on the incorporation of other sustainability aspects (e.g., ethical and social equity) in the school curricula. This may be reflective of the lack of definition consensus on the terminology and distinctions at both an institutional and general subject level. There is little data available on the level of transformation achieved through the five initiatives, especially with two cases yet to be implemented. Moreover, the study relies on student feedback as a key assessment of success without having analysed the effectiveness and success of the initiatives on students' sustainability literacy, awareness, attitudes, knowledge, behaviour and skills. More rigorous ESD impact measures therefore need to be embedded and extended. Secondly, we acknowledge that although many elements of the cases are collaborative and participatory, some remain largely based on the traditional lecture: seminar model criticised within the literature for its reliance on cognitive knowledge to solve sustainability issues. Additionally, whilst there is evidence of field trips and real-life interactions, immersion in real-life communities and context to co-learn and co-create remains rare within the existing curriculum. Thirdly, this study does not evaluate the theoretical framework for use in the design and delivery of ESD, limiting the ability to evidence holistic transformation across the school. Moreover, because these initiatives were not intentionally designed or implemented in accordance with the theoretical framework, their alignment to the framework is variable.

The selected cases suggests a discretionary approach from the activity leaders, which concurs with extant studies suggesting that ESD activations are often reliant on passionate and ESD literate educators (Radclyffe-Thomas et al., 2018). Institution-wide transformation suggests ESD should be interwoven into curriculum design and delivery, and not siloed to activities, units or programmes. Furthermore, fashion education models appear to remain focused on product outcomes and preparing students for the 'economic life', with little evidence of how the current paradigm is being questioned. There is an opportunity to explore and update the learning theories related to the fashion field and mitigate the traditional growth and profit models.

Our study identifies areas for improvement in ESD reporting systems to reinforce and improve the rigor, quality, access, timeliness and accountability of sustainable education procedures and metrics. This transition requires further research into how to incorporate structured evaluation processes, and crucially, whether improved reporting and measurement has a positive impact on ESD transformation.

This study illustrates that transformative learning can and does occur at all school levels from extra-curricular contributions to the formation of new programmes. Despite the variance in scale and design approach of the cases, it is significant that all were found to demonstrate features of transformative pedagogy. A significant theoretical contribution is that the Burns et al. model can be applied to specific singular activities, as well as whole curriculum development. There is great potential to 'scale-up' and apply the model at school level to encourage ESD practices, not only within programmes but between programmes. Further research on analysing the occurrence of the framework at a grander scale would be especially useful to demonstrate ESD approaches not only within disciplines, but as scholars call for, multi- and trans-disciplinary.

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