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Embedding Sustainability Literacy in Business School Curricula through Reflective Pedagogy: An Exploratory Study of Student Reflections of the Sulitest

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Abstract

Purpose

Sustainability has emerged as a megatrend affecting all aspects of management. SDG 4.7 has mandated business schools to provide education for responsible leadership and integrate sustainability principles. Faculty are challenged to mainstream sustainability through engaging pedagogy that inspires and offers concrete tools.

Design / Methodology / Approach

We highlight the role of reflection in promoting the enhancement of sustainability literacy in business school curricula, supporting our proposition that management education for sustainability must have a reflective dimension that engages students in deeper learning. 306 students completed the Sulitest and a reflective assignment using the DIEP (describe, interpret, evaluate, plan) framework, providing a basis for thematic analysis.

Findings

We found that students engaged in thoughtful reflection that was transformative in nature, broadening their knowledge, questioning their mindsets and encouraging activism. Typical knowledge domains which students highlighted included the circular economy, child labour, pollution, equality and clean energy. Students expressed emotions of shock, anger and surprise about the role of human affluence in unsustainable futures.

Research Limitations

Whilst our analysis was limited to reflection coupled to just one learning experience, namely the Sulitest, future pedagogical initiatives might expand to additional tools for promoting sustainability literacy. The data collected could also be enriched through focus groups of student cohorts to capture collective experiences.

Originality / Value

Our findings contribute to the practical application of reflective pedagogy in promoting the enhancement of sustainability literacy and to our conceptualisation of the role that reflection plays in the pursuit of transformation.

Key Words: *Activism, Reflective Pedagogy, Responsible Management, SDGs, Sustainability Literacy, Transformative Learning*

Introduction

Sustainable development has become a megatrend (Mittelstaedt et al., 2014), affecting all aspects of government policy, corporate strategy, consumer decision-making and education (Sánchez-Carracedo et al., 2021). Whilst various definitions exist, the Brundtland's UN (1987) depiction of it as development that meets present needs without compromising needs of future generations is widely accepted, implicit in which intergenerational inequality poses an existential challenge. SDG 4.7 mandates higher education to ensure its graduates are ready for the environmental, economic and social challenges facing the world. A growing body of literature argues that management education has a major role to play in preparing its students to be ethical and socially responsible managers, who are mindful of sustainability (Storey et al., 2019) and who can contribute to the achievement of the SDGs (Avelar et al. 2019).

Hence, business schools face growing pressure to respond to the sustainability agenda (Snelson-Powell et al., 2016), which is reflected in emerging education programmes to develop the next generation of socially responsible business leaders (Maloni et al., 2021) and to integrate responsible management principles into their curricula (Aragon-Correra et al., 2017). A focus of education for sustainability (ESD) in higher education is the enhancement of students' sustainability literacy (Dallaire et al., 2018). This requires pedagogies that foster abilities to think critically and to engage in responsible and ethical decision-making in a range of contexts (Storey et al., 2019). Given management education for sustainability's limited track record, little is known about how best to educate managers to become change agents for sustainability (Cole and Snider, 2019). Against this backdrop, we explore the role of reflection as a pedagogical tool to developing sustainability literate business graduates. Reflective writing is known to engage students in deeper learning, facilitating them to explore relationships between concepts, whilst questioning their beliefs (Dahl et al., 2018). The epistemology of management education is steeped in reflection, particularly in transformative learning contexts (Closs and Antonello, 2011), such as sustainability, in which the emergent knowledge is far from rules-based, rapidly evolving, sometimes conflicting and difficult to action. Our approach deploys the Sulitest, supported by the UN higher education sustainability initiative (HESI) and principles for responsible management education (PRME), along with a reflective writing piece embed sustainability in our teaching and learning practices.

Hence, the research question guiding our study is: how can reflection pedagogies be used to promote the enhancement of sustainability literacy in the business school? Having outlined the rationale for, and background to this study, the remainder of the paper is structured as follows. The literature review begins with two interwoven strands: the legitimacy of the business school and the primacy of sustainability as the de facto challenge of our generation. We then articulate the applicability of sustainability literacy to the practice of managing organisations and, hence, to management education. We then make the case for reflective pedagogies given the transformative nature of sustainability knowledge and provide details of one such pedagogy used at TU Dublin College of Business in the 2020/2021 academic year. In undertaking a thematic analysis of student reflections, our paper contributes a pedagogical initiative that can be adopted by business schools to educate future managers to become change agents for sustainability.

Literature Review

The Emergence of Sustainability as an Intergenerational Challenge

We live in the Anthropocene (Albritton Jonsson, 2012), an era in which population growth, affluence and technological advances yield unprecedented human capacity to alter the natural environment. As the great acceleration of socio-economic activity and earth system indicators inflected in the mid twentieth century (Steffen et al., 2011), high profile publications from the Club of Rome (Meadows et al., 1972) and Brundtland (UN, 1987) warned of their economic, social and environmental consequences. Yet, consensus on climate-change only emerged in the 1997 Kyoto Protocol. Its successor, the Paris Accord in 2015, represented the first binding initiative to restrict atmospheric temperature rises to 1.5°C of pre-industrial levels to keep like-supporting ecosystems resilient. Enshrined in the SDGs, the sustainability challenge seeks to address planetary boundaries (Rockström et al., 2009), social justice (Raworth, 2017) and governance (SSDN, 2021). It is premised on equity, security, prudence, connectivity and comprehensiveness, preparing societies, governments and businesses for an unfolding transformation (Sachs et al., 2019). Hence, a new managerial paradigm has emerged in which we cannot manage organisations without considering the socioecological systems in which they are embedded.

The Role and Legitimacy of the Business School

From its 19th century Cameralist parentage, there has been a long-standing debate about the *raison-d'être* of the business school (Cheit, 1985, Pierson, 1959, Simon, 1967, Podolny, 2009). Against a backdrop of corporate scandals and financial crises, questions have been posed about the legitimacy of business schools in contemporary society (Alajoutsijärvi et al., 2014, Johnson and Orr, 2020, Khurana and Spender, 2012, Pettrigrew and Starkey, 2016, Wilson and Thomas, 2012). They face pressure to be better guardians of public interest (Bridgman et al., 2016). They are scrutinised for how the curriculum can encourage future managers to behave responsibly (Cicmil et al., 2017; Kelley and Nasher, 2014). Such scrutiny brings criticism of management education for teaching 'dominated by influence of an instrumental rationale of achieving specific profit-maximizing goals' (Koris et al., 2017, p.176). Yet, there is also growing demand from a range of stakeholders, including from students, professional bodies, business school accreditation bodies and employers, for a greater focus on sustainability within management education (Maloni et al., 2021; Winfield and Ndlovu, 2019). Such developments have led to calls to broaden the business school curriculum to social and environmental aspects of management practice (e.g. Aragon-Correa et al., 2017; Nonet et al., 2016). Brunstein et al. (2018) extend these calls to include a socio-ecological understanding within management education.

The Promulgation of Sustainability to Management of Organisations

With the externalities of industrialization, such as poor quality of life, air pollution, child labour, gender inequality, degradation of working conditions and post-Malthusian population growth dismissed in the pursuit of progress, a critique advocating for better management based on sustainability considerations emerged as early as the 1930's (Carroll, 1999). Since then, sustainability-related management has gradually evolved and various theories have emerged exploring the relationship between business and sustainability (Chang et al., 2017).

Table 1: Historical Evolution of Sustainability Related Theories in Management

| Year | Theory | Author |
|------|------------------------------------------------|----------------------|
| 1953 | Social Responsibilities of the Businessman | Howard Bowen |
| 1972 | A New Rationale for Corporate Social Policy | Fred Middleton |
| 1979 | A 3 Dimensional Model of Corporate Performance | Archiebold Carroll |
| 1984 | Strategic Management: A Stakeholder Approach | Edward Freeman |
| 1987 | Our Common Future | G.H. Brundtland (UN) |
| 1998 | Triple Bottom Line | John Elkington |

Source: Adapted from Chang et al. (2017)

Despite progress in instilling social responsibility through initiatives such as principles for responsible management education (PRME), the prevailing attitude remains one in which nature, whilst occasionally requiring local protection, is resilient enough to be exploited. Indeed, much current management thought stems from an era of natural resource abundance (Daly and Farley, 2004). Whilst COVID19 may have amplified yawning gaps between corporate success and worsening environmental degradation and social inequalities, management has accumulated a critique over the decades on its social license to operate. Yet, with the spectre of \$72tr climate-change risk from business-as-usual (Winston, 2015), managers are starting to take ownership. In 2019, 200+ CEOs of the Business Roundtable declared that the purpose of business could no longer be solely to maximise shareholder profit (Winston, 2019). Whilst a declaration to widen stakeholder engagement is a start, it needs to be underpinned by strong ESD for managers.

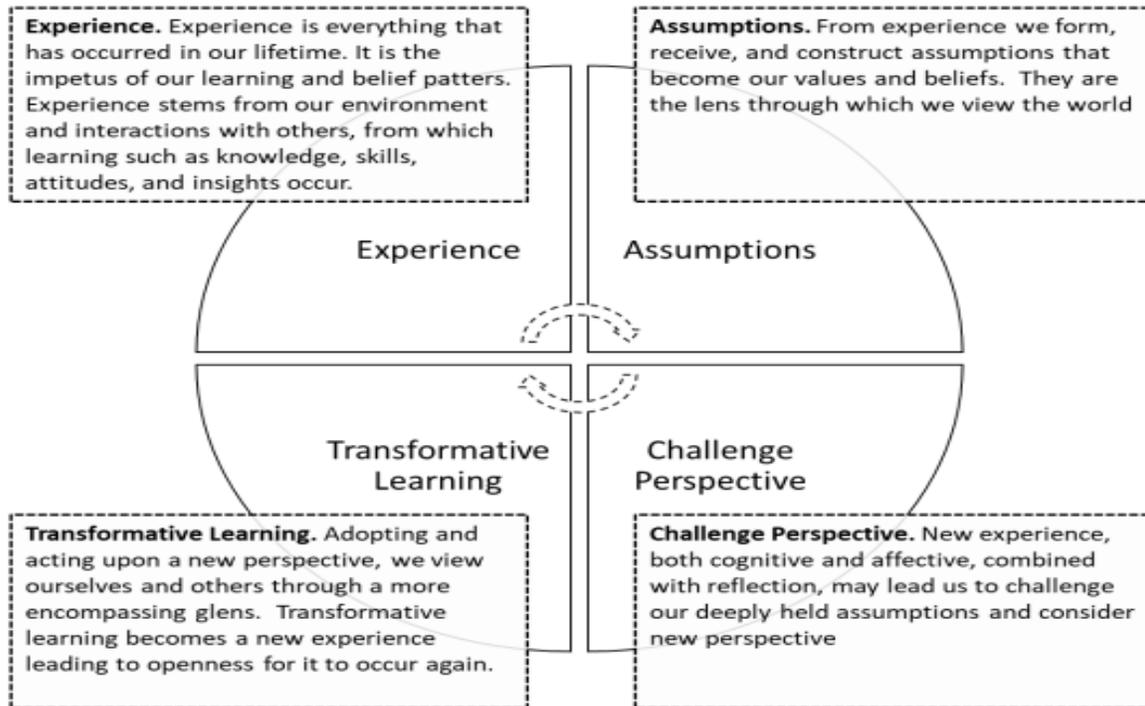
Education for Sustainability as Catalyst for Organisational Transformation

Sachs et al. (2019) identify education as an area for transformation. The UN (2007) points out, ‘meaningful ... change in the conduct of corporations toward sustainability must involve institutions that directly act as drivers of business behavior, especially academia’. SDG4.7 requires learners to acquire knowledge and skills to promote sustainability and is measured by the extent to which ESD is mainstreamed in policy, in curricula and in student assessment. Despite a plethora of ESD publications (UNESCO, 2017, Eizaguirre et al., 2019, QAA & Advance HE, 2021), there are limited examples of institution-wide reform of curricula towards sustainability (Leal et al., 2019). However, management education is making some progress on reshaping its curriculum in pursuit of developing responsible business leaders (e.g., Beddewella et al., 2017; Greenberg et al., 2020; Maloni et al., 2021). Yet, transformative in nature, ESD does not fit well with existing rules-based knowledge domains: ESD learners must “reassess the structure of assumptions” that frame their thinking (Mezirow, 2009, p. 90).

Transformative Learning

Figure 1 provides a synopsis of Nerstrom’s (2014) Transformative Learning Model, representing transformative learning as four sequential phases, namely: (a) experiencing something; (b) making reasonable assumptions; (c) challenging related perspectives, and; (d) revealing a new experience - the transformation. It depicts how learning transformations are constructed, suggesting that once transformative learning occurs, individuals become more receptive to experiencing it again and less likely to revert to prior beliefs.

Figure 1: Nerstrom’s Transformative Learning Model



Source: Adapted from Nerstrom (2014)

Whilst business knowledge domains derive from rules-based knowledge, sustainability knowledge is rapidly evolving, sometimes conflicting and difficult to action. In this context, Closs and Antonello (2011) argue that management education for sustainability should be inherently transformative, thus reflective and situationally interpretive. Indeed, long before the current sustainability paradigm, Cunliffe (2004) advocated for critical reflection as a transformative mode of learning to foster responsible ways of managing organisations. Even more pertinent to potential disruption from climate change, Brooks (1999) highlights a role for critical reflection in managing organisations in transformation.

Sustainability Literacy

The preceding discussion suggests that management education should play its part in enhancing graduate sustainability competencies (Block et al., 2019). Hence, we support Hesselbarth and Schaltegger’s (2014) argument that innovative pedagogy that enables students to become sustainability literate graduates is needed. The term ‘sustainability literacy’ was initially coined to encourage ‘buy in’ from the corporate world (Vare and Blewitt, 2009) and it followed a host of other literacies, such as media literacy, financial literacy and computer literacy. In the same way that proof of a minimum level of English is required for admission to university, employers are likely to require graduates to have a basic understanding of global sustainability challenges and their responsibility in resolving them. Literacy per se, involves reading, writing and interpreting written materials; a skill that can be achieved across large proportions of the population. Literacy is also, to a degree, ideological as it reflects values associated to a particular context (Street, 1984). Table 2 highlights a series of definitions for sustainability literacy.

Table 2: Definitions of Sustainability Literacy

| Key Definitional Elements | Discipline | Author |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------|
| Ecological Literacy: Knowledge to comprehend inter-relatedness, and attitude of care for the environment. | Environmental Sciences | Orr (1992) |
| Environmental Literacy: Awareness, Knowledge, Attitude, Participation and Prevention. | Environmental Sciences | Chacko (2000) |
| Sustainable Development Literacy: The complex relationship between human and natural systems. | Sustainable Development | Dale & Newman (2005) |
| Understanding of symbiotic relationships between the environmental, social and economic aspects. | Education | Parkin et al. (2004) |
| Skills, attitudes, competencies, dispositions and values that are necessary for surviving and thriving in the declining conditions of the world. | Education | Stibbe (2009) |
| The historically, socially and culturally diverse ways in which we construct ourselves in relation to, and in harmony with natural systems. | Education | Wayman (2009) |
| Having the understanding, skills, attitudes and attributes to take informed action for the benefit of oneself and others, now and into a long-term future | Education | Diamond and Irwin (2013) |
| Builds on a need for individual and collective actions, sufficient knowledge and skills to decide and act in a way that favours sustainable development and to reward people's actions linked to sustainability. | Multidisciplinary | Dallaire et al. (2018) |
| Having the knowledge and skills to advocate for resilient social, economic, and environmental systems. | Liberal arts and Sciences | LeVasseur and Ciarcia (2019) |
| Awareness of sustainability issues and associated skills such as communication and problem solving, change management and systems thinking. | Engineering | Qureshi (2020) |

In this paper, we adopt Décamps et al.'s (2017) definition of sustainability literacy as “the knowledge, skills, and mindsets that help compel an individual to become deeply committed to building a sustainable future and allow him or her to make informed and effective decisions to this end”. This definition represents a culmination in the evolution of sustainability over the UN decade of education for sustainable development (DESD). Implicit in the definition is multidisciplinary, interconnectedness of knowledge domains and systems thinking. The definition is also supported by ESD initiatives that seek to identify essential dimensions for consideration when embedding sustainability in higher education curricula (e.g. Rieckmann, 2012; Wiek et al., 2011) and is consistent with SDG 4.7. Also inherent in the definition is that basic sustainability competencies provide a basis for the development of graduates as empowered citizens and change agents in their personal lives and within those organisations for which they work.

However, the infantile integration of sustainability literacy in management education has been fraught with challenges (Albinsson et al., 2020). Aragon-Correra et al. (2017) maintain that business schools are still searching for appropriate teaching resources across knowledge domains. An emerging issue is that educators are now replete with learning resources. With little systematic analysis across the constituent knowledge domains, there are few synthesised evidential knowledge products that facilitate students in grasping global citizenship and responsible leadership concepts (Winfield and Ndlovu, 2019). This suggests a need for informative and engaging pedagogical approaches that inspires management students and provides them with concrete tools. In recognising the transformative nature of sustainability literacy, we propose that its promotion can be enhanced by the inclusion of a strong reflective dimension

The Role of Reflection in Management Learning for Sustainability

Educators have long considered, reflection as an accepted means to develop deeper-level understanding (Dewey, 1933). Reflective writing is an effective tool for facilitating deeper learning, requiring affective, cognitive, and social engagement. Moreover, within management education, it has been associated with a form of learning more attune to thoughtful managerial practice (Currie and Knights, 2003, Gosling and Mintzberg, 2003, Gray 2007, Roglio and Light, 2009). Schön (1983) highlights two phases of reflection for learning – reflection in action and reflection on action, the main difference between them being whether reflection happens during or after an experience. Reflection can also facilitate critical thinking by encouraging students to expand their considerations in evaluating situations in professional and personal contexts.

In ESD, self-awareness, developed through reflection, is considered to be a key sustainability competency, and reflection is also embedded as learning outcomes in several other sustainability competencies (QAA and Advance HE, 2021). Robinson and Mothan-Hill (2021) highlight the central role of reflection in developing threshold sustainability competencies in future business leaders. In examining critical reflection in management education for sustainability, Brunstein et al. (2018) concluded that whilst reflection does not necessarily guarantee changes in management, it creates an environment that favours adherence to new beliefs, providing opportunities for new imaginative projects and initiatives.

Notwithstanding, unlike another assessment types, reflective writing is open-ended and exploratory, posing challenges to assessing the levels of reflection from written submissions and therefore, requires carefully crafted guidelines (Ono and Ichii, 2019). The level of reflection in terms of deep learning and criticality is typically a function of student interest, experience, knowledge and willingness to reflect (Albert and Grzeda, 2015). So, for our intervention, we asked students to use a four-step approach based on Boud et al.'s (2013) DIEP (Describe, Interpret, Evaluate and Plan) framework, as a guide to organising their reflective writing. Description involves answering questions around what was read, viewed or heard. Interpretation involves making connections between new information and connecting it to pre-existing knowledge, thoughts and feelings to generate meaning and garner insight. Evaluation sees the student question the value of the experience and in so doing develop opinions in relation to the new learning. Finally, planning involves consideration of ways in which the learning experience might be transferable across to the students' wider programmes of study and their personal and professional lives more generally. DIEP places a strong emphasis on future action, which is particularly suited to the transformation-orientation of the sustainability agenda.

Research Methodology

The learning experience on which students were asked to reflect was the sustainability literacy test, or Sulitest for short. Sulitest is a UN supported online sustainability literacy MCQ examination tool at www.sulitest.org initially developed in 2013 following the 2012 UN conference on Sustainable Development in Rio de Janeiro. The test focuses on the 17 SDGs and its architecture is based on four themes: [1] sustainable humanity and ecosystems, [2] human-constructed systems to meet people's needs, [3] transition towards sustainability and [4] roles for systemic change. The Sulitest has made a vital contribution to integrating sustainability literacy in higher education (Décamps et al. 2017) and its global reach extends to 160,000+ individuals in 63 countries. In recognising its pedagogical limitations and that it has some way to go in terms of terms of reliably measuring sustainability literacy (Kuehl, 2021), we, nevertheless, view Sulitest as a powerful tool for raising awareness of sustainability issues in a broad range of contexts that can be linked to students' personal and professional lives.

However imperfect one might view Sulitest, our challenge was to promote the enhancement of sustainability literacy through its adoption in assessment strategies at TU Dublin. Students were required to complete the Sulitest, which consisted of 30 multiple choice questions based on the SDG's and 10 multiple choice questions on the circular economy. As students completed each question, they received feedback on their answer choice, including a detailed answer to the question posed and links to supplementary resources, of which students were encouraged to take note as they progressed through the test. Following completion of the test students were requested to complete a reflection on their experience guided by the DIEP framework. This reflection formed a part of the overall assessment strategy and was graded by the module facilitator. Students were invited to consent to their reflection being anonymised and analysed for the purposes of this study. The research context for this study was a variety of courses taught at TU Dublin's College of Business, which is a signatory of UN principles for responsible management education (PRME).

This paper draws on a dataset of student reflections carried out as part of a coordinated initiative across 12 undergraduate and postgraduate modules. A total of 306 reflections provided rich qualitative data for thematic analysis (Boyatzis, 1998) using inductive coding. All reflections were analysed in Nvivo. This analysis was undertaken in a multistage iterative process, progressing from the generation of 56 initial codes to their subsequent organisation and aggregation into overarching themes based on Braun and Clarke's (2006) approach to thematic analysis. For the purposes of expedience, a detailed narrative for each theme is not provided in this paper. However, a summary of each theme, along with illustrative quotes from student reflections is provided in tabular format in the Appendix, thereby providing an overview of students' perceived learning and future orientation from completing the Sulitest.

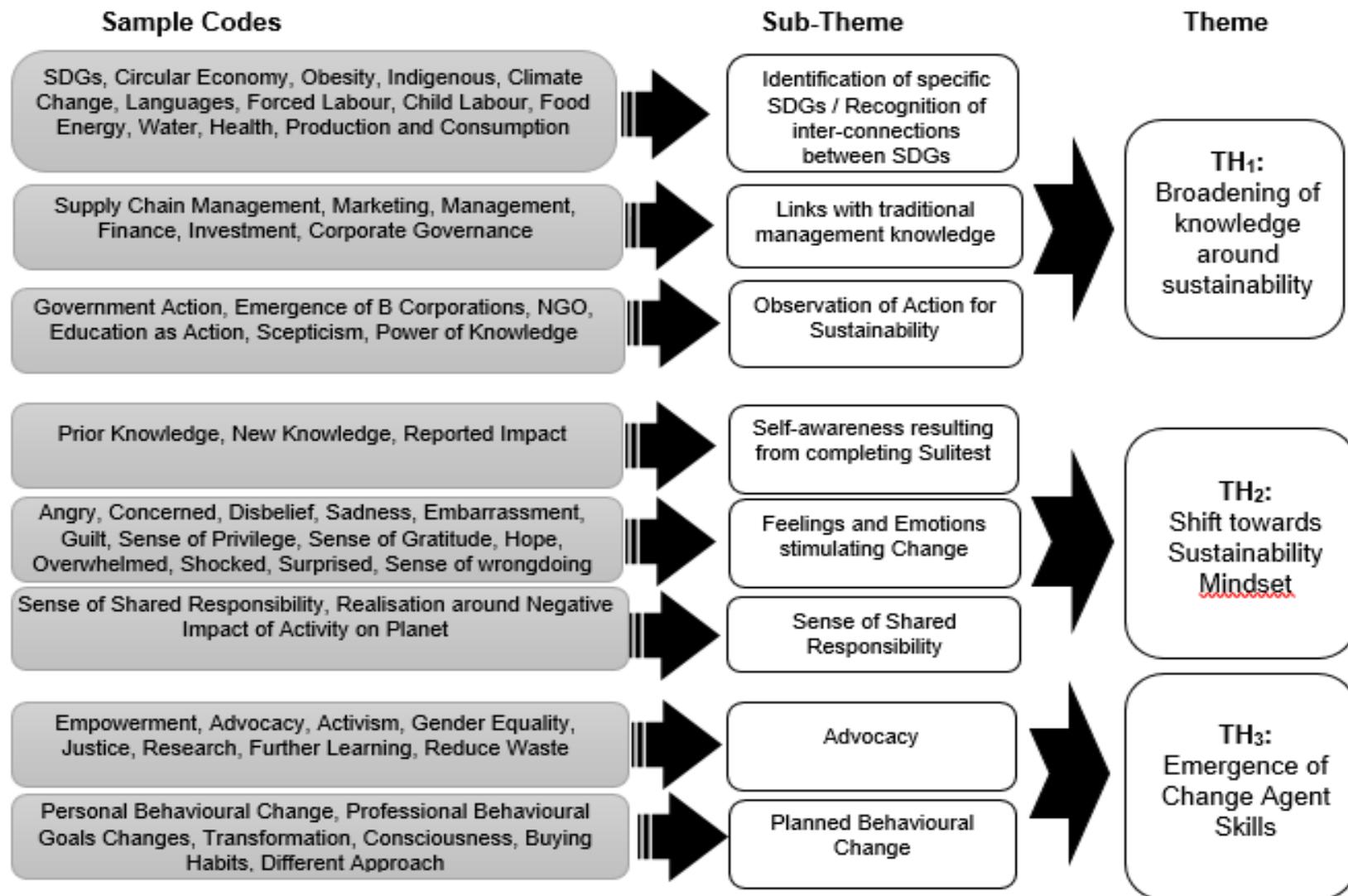
Summary of Findings

A first pass of the entire dataset, aligned directly to language of participants, generated over 50 initial codes. A second pass helped to identify similarities, differences and overlaps in codes, allowing them to be collapsed appropriately into smaller numbers of “first order” themes. In this second pass, the analysis transitioned from being purely participant driven to being more abstract. A third pass moved the analysis further into the theoretical domain, with “second order” themes helping to provide a conceptual basis for our findings. Three overarching themes emerged from the data, together conveying student perceptions of the learnings from the Sulitest experience. These themes are: TH₁ Broadening of knowledge, TH₂ Shift towards a Sustainability Mindset and TH₃ the Emergence of Change Agent Skills, which are summarised in Figure 2. Whilst, in many respects, the formation of the themes mirrored the Décamps et al.’s (2017) definition of sustainability literacy and therefore, the themes can be considered a priori, the themes represent a conceptualisation of the students’ reflections: students were not furnished with any construct of sustainability literacy prior to taking the Sulitest.

With respect to the TH₁ Broadening of Knowledge, students used the reflective process to describe and elaborate SDGs and their targets, demonstrating consolidation of their learning through the inclusion of detailed accounts and references to additional resources within their reflections. Students commonly expressed surprise at the breadth and comprehensiveness of the SDG framework. Students also critiqued Government, NGO and corporate responses to the Sustainability agenda. With respect to TH₂ Shift towards a Sustainability Mindset, students commented on how they became more self-aware of their knowledge gaps but also expressed a wide range of feelings from worry, disbelief, anger and despair to hope about the future. As students considered the interconnectedness of the SDGs, their reflections demonstrated thinking in relation to a sense of shared responsibility to build a sustainable future. With respect to TH₃ Emergence of Change Agent Skills, the DIEP framework requires students to reflect on planned actions that emerge as a result of their engagement with sustainability focussed content. Students reported an increased sense of empowerment and agency in relation to the role they could play in pushing the sustainability agenda forward, encompassing advocacy and managerial activism. Students also reflected on how they could make a positive contribution towards building a more sustainable world through behavioural changes in their personal lives and future career choices.

The reflective process based on the DIEP framework coupled with the Sulitest proved to be particularly effective in promoting the enhancement of sustainability literacy. Key to this efficacy appears to be alignment between the DIEP framework and the Décamps et al. (2017) definition of sustainability literacy on which the Sulitest is constructed. The DIEP process not only facilitated the adoption of the Sulitest as an authentic assessment across a range of undergraduate and postgraduate courses but facilitated a broadening of knowledge, stimulated a change in mindset and made students more self-aware of their own agency to affect transformation.

Figure 2: Formation of Key Themes from Student Reflections



Concluding Remarks

In the academic year 2020/2021, 1700+ students completed the Sulitest (Sulitest, 2021). The inclusion of a reflective assignment facilitated its adoption across a range of courses and programmes by allowing faculty to incorporate the Sulitest into existing assessment strategies. There was no pressure on students to perform in the Sulitest as they were graded on the reflection after the Sulitest was completed. In some cases, there was a next step in many courses where students chose a specific issue to explore in more depth and to convey it in a video or poster, connecting the new knowledge from the Sulitest experience to academic concepts, in which they explained the issue and made recommendations for practicing managers. We examined subset of the student reflections (306) to explore the manifestations of the students' learnings and, thus, the role of the reflection in promoting the enhancement of sustainability literacy.

A common theme in their reflections was that students thought about sustainability in much narrower terms before taking the Sulitest. After completing the test, there was a range of emotional reactions, from being shocked, surprised and feeling privileged. Part of the reflection was to consider what impact their broadened knowledge would have on aspects of the students' personal, academic and future professional lives. Consumer choice and career choice were frequently cited as aspects for consideration. So, not only was there evidence of broadening of knowledge but student's signalled a change in mindset. Moreover, students also signalled intentions to take action, not only in their own professional and personal lives, but to influence others on the need for change. An important contribution of the reflective submission, therefore, was in encouraging activism. Student activism can contribute to achieving the SDGs (Korhonen-Kurki et al., 2020) and, more broadly, higher education has a vital role in advancing sustainable development through well-articulated student voices as a lever for social and economic change. Furthermore, it can underpin the development of critical skills such as emotional intelligence, interpersonal effectiveness, the ability to collaborate with others across diverse perspectives and a greater sense of self-efficacy with respect to having a positive impact on individuals, organisations and communities (Bernacki and Jaeger, 2008). It is hoped that this student activism will translate managerial activism as graduates enter the workforce and progress in their careers.

The combination of the Sulitest and reflective assignment, itself, can be considered a practical example of transformative learning. The convergence of transformative learning with sustainability is emerging field of inquiry (Aboytes and Barth, 2020). There is some tentative demonstration in this study of transformative learning theory contributing to the design and implementation of assessments as learning. Indeed, alignment of the DIEP framework with Décamps et al's (2017) definition of sustainability literacy and with Nerstrom's (2014) model suggests that learning interventions underpinned by transformative learning principles can play a role in management education for sustainability.

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Appendix – Illustrative Quotations from Student Reflections

| Theme | Sub-theme | Supporting Evidence |
|-------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Broadening of Knowledge | Identification of specific SDGs. Recognition of interconnections | <p>As an avid recycler and up-cycler myself I was shocked to discover that in the textile industry only 13% of the total material input is in some way recycled after clothing use. This is completely unacceptable and shows how much we need to switch from a linear economy to a circular one. A significant issue, is that 200 million people are victims of forced labour. That figure is staggering. My ignorance to the issue was shown when I selected that I thought it was 20 million people who were subjected to forced labour (still far too high!). This test was definitely effective in exposing gaps within my knowledge, making me want to learn more (Undergraduate Student).</p> <p>A major issue I had not considered before was the prevalence of obesity in modern society. According to the WHO, approximately 13% of the world's population is overweight, while over a third are considered overweight. These statistics demonstrate the severity the situation at hand, as if these statistics continue to rise, the effect on these countries economically and socially will be severe. (Undergraduate Student).</p> <p>One insight that I found significant was that 50% of the 6000 languages that are spoken in the world will no longer exist if nothing is done to safe guard them (UNESCO, 2017). I never realised there were this amount of languages existing. On the Sulitest I was given a link to the UNESCO website with more detail on this statistic. I was able to look at a map that showed all the languages in the world that were safe, vulnerable, definitely endangered, severely endangered, critically endangered or extinct. I was fascinated to see the different languages and their status of endangerment. Already 230 languages are extinct since 1950 (UNESCO, 2017) (Undergraduate Student).</p> |
| | Links with traditional management knowledge | <p>Companies should adopt a circular economy approach as opposed to a linear approach throughout their supply chains. Circular economies focus on the return of resources, thus increasing product lifetime by re-manufacturing and recirculating components to eliminate any waste, unfortunately only 9% of the world's economies are circular. (Undergraduate Student – Part-time)</p> <p>A writer whose work I really enjoy and now have a deeper understanding of and critical knowledge for is Naomi Klein. Her books “No Logo” and “This Changes Everything” have provided me with a critical understanding of our current policies and the impact large marketing, branding and advertising can have on the environment. My deeper knowledge on circular economy and the multifaceted nature of sustainability will allow for me to analyse her work through an evolved lens. It will allow for me to see more alternatives and have a different scope for arguments. (Postgraduate Student)</p> <p>We learned about the product life cycle and we learned about ethics in our Management module and the importance of ethical decision making regarding how one conducts their business. I now realise that how a business conducts itself in an environmental sense is just as important. Undergoing this test has made me realise that I want to work for a company that creates sustainable products and contributes to the planet, rather than takes from it. (Undergraduate Student)</p> <p>If businesses choose to have a socioeconomic view, the view that management's social responsibility goes beyond making profits to include protecting and improving society's welfare. This involves protecting children who are slaving away. This means not being the retailers who choose to buy from low costing labour countries with the intention of having a competitive advantage. This implies ethical questions because of the different conditions of work in those countries in particular in reference to workers' rights in terms of health and safety (Kiggundu, 2002). (Undergraduate Student)</p> |
| | Observation of Action for Sustainability | <p>Sustainability, renders almost everything else unimportant. This is reflected by corporate giants such as IBM, PepsiCo and General Motors integrating sustainability objectives into their agendas (River, 2021). Nothing else seems to matter if we completely deplete the earth of its natural resources. Earth Overshoot Day, the day in the year where we as a species have depleted the earth's resources for that year has been falling at increasingly earlier dates. However, in 2020 it fell at the relatively later date of the 22nd of August this year, largely due to the pandemic (Mistlin, 2020). This begs the question of ‘do we need regular pandemics to halt the destruction of our planet?’ (Postgraduate student)</p> <p>This focus on single-use plastics removes the responsibility from top-down actors, e.g State and Institutions. ... whilst we as individuals can all take steps to help, this forms the mistaken belief that a better form of consumerism will save the planet. (Postgraduate student)</p> <p>The Ellen Macarthur Foundation, whose mission is to accelerate the transition to a circular economy, states that resale is expected to be bigger than fast fashion by 2029 - \$80 billion to \$43 billion. Clearly this is a growing market for investments and potential start-ups. The circular economy must replace the current linear economy where products are used and subsequently discarded. Although clothing production has approximately doubled, clothing use has declined by 40%, meaning a lot of clothing is being discarded. (Postgraduate student)</p> |

| Theme | Sub-theme | Supporting Evidence |
|-------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shift Towards a Sustainability Mindset | Self Awareness from Completing Sulitest | <p>But something that this test made me think was that the only way to solve the climate issues is to start educating the public. I have learnt so much about my carbon footprint, emissions, plastic, fisheries, ecosystems, humanity and our role as people on this planet. If this has changed my outlook, think about the impact it would have if all third level students took this test. Rather than just focusing on trendy movements like 2nd hand shopping, there needs to be information spread against all social media platforms on areas like the damage to our ocean (Postgraduate Student)</p> <p>As someone that loves fashion and putting different outfits together, admittedly, I was not very educated on how bad it can be for the environment and how poorly treated that labourers are in this industry, working in harsh conditions for a barely liveable wage. (Undergraduate Student)</p> <p>An issue I had not considered before was that creating a longer life cycle for products is not just the responsibility of the consumer. It can be traced all the way back to the choice of materials used to extend the productivity of an item. It starts with the people who manufacture the product to make it more durable or easy to repair, providing step by step guides on how to fix it in a manual for example. As a person in society, I have a responsibility of making the effort to hold onto a product for longer and look after it well so I can get the most out of it before eventually recycling it. This expansion of usage time can have a beneficial impact on one's carbon footprint if we only buy what we really need and repurpose things, it will reduce our waste significantly. Moreover, It will also reduce the amount of money we spend! (Undergraduate student)</p> |
| | Feelings and Emotions Stimulating Change | <p>Finally, an insight that upset me was that there are 79,800 species of animals on the IUCN Red List. I was really shocked by this, if you picture one of each of those different animals sitting in Croke Park, it would be nearly full. The thought that such a huge quantity of species could just disappear is dreadful. (Postgraduate Student)</p> <p>The statistic that 19 million people had to abandon their homes in 2017 is a shocking figure as it implies that there is a serious climate change problem to have that many weather disasters and to that magnitude, it is a worrying figure as weather problems can be devastating to a community and an economy. I came to the conclusion from this information that climate change must be tackled and to ensure the safety of nature, communities and economies. (Undergraduate student)</p> <p>It is deeply saddening to know that this vast number of people do not have access to crucial healthcare. One thing I realise now is how incredibly lucky I am to have access to these benefits. It is now vital to me that I do not overlook the fortune I have been given in my life. (Undergraduate Student)</p> <p>I feel quite disgusted with how us humans take the production and consumption of food for granted. I think it is important to mention SDG 2 here, Zero Hunger (United Nations, 2021). The United Nations state that nearly 690 million are hungry. It makes me question what gives us the right to throw out so much food when 8.9% of the world's population are starving. It's not right and it's not fair. (Undergraduate Student)</p> |
| | Sense of Shared Responsibility | <p>I have opened my mind to the realisation that integration within supply chains is not just about profit, there needs to be a moral integration too. As a business owner my responsibility does not end with my own staff, I must consider the staff of my suppliers and supply chain as a whole. It is not good enough to ensure my own staff are earning a living wage while my supply chain collaborators are working below poverty. Partnerships and ethical responsibilities now need to be a part of running any business. (Undergraduate Student – Part-time)</p> <p>The key to tackling our current environmental issues is education. We have the data, and we have carried out the research. We need to educate our world leaders about how we can implement radical and achievable sustainability targets. We need to act now to ensure that we are creating a safe environment for future generations. Education needs to be delivered at both a national and local level to ensure that everybody can have an opportunity to do their bit. (Postgraduate Student)</p> |

| Theme | Sub-theme | Supporting Evidence |
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| Emergence of Change Agent Skills | Advocacy | <p>I now also recognise the power of the global youth community and the importance of the role we play in this battle. If we want change, we must speak up and have our voices heard, so as being part of the woke youth community in this country I intend on attending more marches and public demonstrations to lobby our government alongside the rest of the global youth all over the world to perform a better job in saving our future. (Undergraduate Student).</p> <p>The sulitest made me realise how much damage we have caused to our home, I find it hard to understand how we have allowed the issues to escalate to this level. I feel empowered after taking the sulitest to be more proactive myself on combatting climate change. (Undergraduate Student)</p> <p>I am also planning on getting much more involved in charities that have a good cause towards helping achieve some of these goals by volunteering and getting involved in the fight against poverty. For example, the organisation 'overcomingpoverty.org' is an international organisation committed to overcoming extreme poverty. This organisation is behind the International day for the eradication of poverty that takes place on the 17th of October and I hope to participate in these events and help raise awareness in the future. (Undergraduate student)</p> <p>The sulitest has allowed me to greatly develop my understanding of fair trade, its benefits and also the 'myths' that many people often believe about fair trade. I now realise that there are actually fair trade alternatives to almost any product you could want or need. This means that I myself can play a part in creating a more sustainable environment and helping to advance the UN SDGs. I can encourage others in the society to purchase fair trade products so that we are in turn helping to improve the lives of workers in developing countries by ensuring that the products which we are buying are fair trade certified. (Undergraduate student)</p> |
| | Planned Behavioural Change | <p>My results helped me reflect on the importance of having a deeper understanding of Sustainability as we as humans need to make a conscious effort to meet our own needs without compromising the ability of future generations to meet their own needs. It is all about preserving what we are lucky enough to have around us for as long as possible. I intend to make an effort in the future to make slight changes towards living a more sustainable lifestyle whether it involves changing the brands I wear, speaking more Irish, reducing the amount of plastic I use or trying to use more sustainable energy. (Undergraduate Student BUS2008)</p> <p>Truthfully, If I had not sat the sulitest, I would have continued to go about my normal routine without making any effort to improve the sustainability of our world. I didn't know enough about it to feel the need to change. Although these changes are small, it gives me satisfaction knowing that I am making a difference. (Undergraduate Student MRKT2326)</p> <p>In the future, I will organize or engage in many local cleanups. We will prevent litter from being marine debris by cleaning up litter on our local streets, in our rivers and ponds, and on our beaches. Using the Marine Debris Tracker App, I can gather data on the debris I find during a cleanup. This method is described as an excellent way to participate in the local data collection. (Undergraduate student)</p> <p>I would like to share my learning experience with others and to help spread awareness of food waste and to help the world become more sustainable by reducing food waste. I plan on learning how to make use of food that is about to go bad, plan out my meals and to check the use-by dates rather than the best-before dates. I also intend to reduce my use of water by taking showers instead of baths and to collect rainwater to water my plants rather than collecting water from the tap. (Undergraduate student)</p> <p>I plan to use my understanding of sustainable economic development in my studies and my profession in the future. I will bring in the knowledge I've gained into assignments for all my modules but especially the ones that focus on global matters. I will use this knowledge for my future profession wherever it may be, but it will have to involve some sort of sustainable methods in it. (Undergraduate student)</p> |

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