Chapter 4

Higher Education for Sustainable Development Goals: Bridging the Global North and South

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Abstract

In this chapter, the authors aimed to analyze the existing sustainability curriculum being followed by higher education institutions (HEIs) in the emerging world, and call out the underlying inadequacies within it and provide solutions for the same, by drawing insights through interviews with key stakeholders in this area. The authors planned to talk to higher education policymakers, Educational Institutional heads, researchers and faculty members and corporates (who deal in sustainable products and who will benefit from this subject). The respondents' sample consisted of both Indian and international interviewees to help us better understand and analyze the perspective and scenario globally in terms of north-south as well as understand multiple point of views. The interview analyses were carried out using the *N Vivo software tool*. The expected outcome includes a curriculum contour on sustainability for the HEIs.

Keywords: Curriculum; higher education institutes; sustainability; pedagogy; global north; global south; employability; industry interface.

Introduction

In today's fast-paced world, sustainability is no longer a choice but a necessity. In order to appreciate its sensitivity, it is essential to recognize the key role that Higher Education Institutes can play. As we prepare for an action plan for

'Sustainable Development Goals 2030', proposed by the United Nations (UN), a critical question that remains to be addressed is how to create awareness of the problem early among individuals and accordingly, develop a curriculum that covers sustainability holistically (UNESCO, 2005).

This chapter comes at a time when the world is seeing a major shift in the concept of sustainability and looking at it from different perspectives. While the work towards a sustainable future is being carried out on various levels all around the world, they are somewhat being done in silos. It is critical that all these levels reach a common ground so that the whole narrative can be streamlined across all organizations and players in this system as well as the gap between the Global North and South can be bridged sufficiently through the means of exploring higher education as a scope.

A great deal of primary and secondary research was conducted as a part of this study to ensure that we arrive at the best possible methodological solution to Sustainability. The primary research conducted includes in-depth interviews conducted with diversified eminent professionals like NGO activists, educationalists, UN associates, independent environment consultants, education consultants, corporates and manufacturing to name a few as well as students who are currently pursuing courses on sustainability. The secondary research focused more on already available research previously done, databases available to gather insights and monitor various sustainability goals, journals and articles.

In this chapter, we will dive deeper into the new advancements happening in the field of sustainability, where the world currently stands on its viewpoint of this topic, sustainable development goals (SDG), the gap between global north and south, arriving at a streamlined curriculum of sustainability for Higher Education Institutes and try to storyboard understandings from interviews and incorporate a wide array of learnings and perspectives into our findings and implications. As you end this chapter, you will be equipped with various outlooks on this subject that will both enlighten you as well as challenge you!

Global North Versus South on Sustainability

The 2030 Agenda for Sustainable Development and SDGs was introduced by the UN in order to mainstream SD. Over the coming years, this all-encompassing, holistic, and transformative agenda hopes to inspire activities that will reduce poverty and create a more sustainable world. By 2030, there are 17 particular goals that must be accomplished. Action is needed on all fronts to achieve the goals; everyone has a part to play, including businesses, governments, civil society organizations, and everyday people.

Due to climate change, there is a clear separation between the North and the South. The North has been depriving the South of resources for many years by abusing its technological superiority. But the sad truth is that colonialism and neo-colonialism were a problem for the South, causing it to be in a disadvantageous position. The North was able to exploit Southern resources at prices that did not account for the social and environmental costs of production because the South's economy was dependent on export output. Instead of fostering wealth, export-led development methods burdened the communities targeted

for mining, oil extraction, and other resource exploitation with unequal environmental burdens, harming human health and promoting social and economic inequality (Porter & Kramer, 2011). The South along with the most vulnerable groups, such as indigenous peoples, racial and ethnic minorities, and the poor, are disproportionately affected by the environmental implications of economic expansion while the North profits materially from it. By using the South's natural resources, the North has industrialized at the South's expense. It is claimed that the North owes the South an ecological debt as a result of the South's resource theft, unfair trade practices, environmental harm, and trash disposal in the environment. Many North-South confrontations in environmental law are rooted in this environmental extortion and debt. According to the impoverished countries, the North, which is the main polluter, wants them to reduce emissions, halt deforestation, and implement other adjustments. However, they contend that they require finance and technology to respond to such changes (Murphy, 2012). The majority of action plans call for massive transfers of capital and technology from the developed to the developing world, placing practically all of the burden on the wealthy nations. The South's request for money, 'Give us money', is similar to its request for reparations. The conditions under which the demands are made have not changed nearly three decades after the Earth Summit, and the gap between the North and the South is growing larger over time. The economic and environmental policies that separate the North and South are at the centre of this political divide. The wealthier nations are unwilling to accept accountability for the new global economic system they helped to establish, let alone to alter course and pay for a transformation. The reciprocal benefits and moral arguments have not produced the expected results. As long as environmental concerns on a worldwide scale continue to raise questions, the world is still at a turning point.

The 'North' world has just over 20% of the world population but consumes 80% of the world's energy; on the other hand, the 'South', comprising of the developing nations of the world is still struggling to provide for the basic needs for its population. This is a major concern in terms of unethical consumption and waste generation that go hand in hand which till today remains a problematic pattern of the North world. Transcending North-South differences and viewing global action and cooperation through the prism of respect for various well-being and sustainable living ideals are necessary to develop sustainable consumption. Many research papers and journals also emphasize the importance of developing international collaboration to cut down on resource use, as well as the necessity for a nuanced understanding of intraregional problems, variations in consuming experiences, and related issues (Sunday, 2018, August 28). The Paris Climate Agreement and international accords for SDGs have not adequately emphasized the significance of addressing human needs and ambitions within the parameters of the earth and the atmosphere. There hasn't been much research done to date that looks at the various ways people want to live well and how we might achieve these global goals while taking into account the different values that inspire and guide our aspirations for action. Achieving and maintaining meaningful lives within a constrained carbon budget is a significant challenge, but acknowledging that there are vastly different cultural values and orientations towards sustainability

beyond personal notions of a good life is a crucial first step in promoting human and non-human flourishing within the confines of a finite planet.

Overall, resource consumption requires a more equitable redistribution of ownership and access, and all human endeavours require significant adjustments to enable communal ownership of resources. It is more likely that low consumption policies will advance SD in ways that leave no one behind when these extensive reductions and redistributions of resource use are informed by values of reciprocity, just consumption, and interconnections informed by aspirations for peaceful living, community solidarity, generosity, and harmony with nature. In order to advance sustainability, individuals must take deliberate action. However, complex visions of sustainable living, rooted in local values and attentive to long-term, collective meaning making, can also support SD and provide stirring visions for bringing about social change.

Arriving at a Sustainability Curriculum for Higher Education Institutes

Higher education is at the crossroads having to choose between the path of commodification of knowledge creation and learning focusing on optimization and efficiency with the well-being of the economy as a key driver and the path of socio-ecological transitions requiring new forms of research and learning as well as alternative capabilities and values that contribute to the 'well-being of planet and people' (Wals et al., 2016, p. 36).

As stated above in the abstract of this chapter, that educational has always been the first pillar to drive any societal or transformational change, it is imperative to now acknowledge the growing need for a full formal curriculum offering to meet the sustainable goals. Institutions of higher learning are crucial to sustainability. They play a significant role in preparing future leaders who will help the SDGs of the UN be implemented successfully. Although the geography of the SDGs implementation is quite diverse, it is evident that HEIs make a significant contribution to developing a mindset that encourages the adoption of SDGs principles.

Higher education holds power that can contribute decisively to the SDGs implementation, but especially to Goal 1 (end poverty in all its forms everywhere), Goal 3 (ensure healthy lives and promote well-being for all at all ages), Goal 5 (gender equality), Goal 8 (decent work and economic growth), Goal 12 (responsible consumption and production), Goal 13 (climate change) and Goal 16 (peace, justice and strong institutions). The higher education industry has a significant influence on students' habits and contribution to a thriving society as a transformational agent. However, sustainability concepts must be at the core of HEIs' strategies (such as their curricula and operating procedures) and are crucial to be included in the organizational culture in order to establish the transformation in education that is necessary. The only way to have an external influence on society is to set an excellent example (e.g. implementing SDGs key aspects such as gender quality, reduce waste reduction and energy consumption) (Weisser, 2017). To make this a reality, various forms of communication with students are required. One of the most effective forms of communication is inducting them to

the concept through means of formal education and this is where the HEIs can play a distinguished role.

Research Methodology

Given the evolving nature of the topic, it was considered that a qualitative study would be the best method, to extract detailed responses with thought leaders. For this chapter to come to light and before arriving at a verdict on how the curriculum should be shaped, a comprehensive qualitative primary research study was conducted that mainly comprised of *In-depth interviews.*

> An in-depth interview is an open-ended, discovery-oriented method to obtain detailed information about a topic from a stakeholder. In-depth interviews are a qualitative research method; their goal is to explore in depth a respondent's point of view, experiences, feelings, and perspectives. (In-depth interviewing, Communications for Research, 2012)

The sample chosen was International in nature, from many parts of the world – and this makes this study very significant. It was purposive sampling, based on the secondary research done with regard to key influencers in this space of sustainability. The respondents represent a holistic view on the topic of sustainability as they range from policymakers, to industry practitioners to educationalists to students. We hosted online sessions with various stakeholders to gather deeper, on ground and real time intuitions which when further analyzed using *N Vivo* software tool helped in bringing out a common theme and dominant point of view of each interview as well as all interviews combined together. The word cloud analysis was generated as output (some are indicated for reference).

Analysis of in-depth Interviews

All interviews followed a questionnaire that was prepared keeping in mind the field of the interviewee. However, while some questions were dedicated specially to the expertise of the stakeholder, some questions were deliberately kept common amongst all to settle a collective common ground to derive cognizance.

The interviews were conducted on Zoom platform, and each one typically lasted for around 45–60 minutes with a set of 12–15 questions. All questions were kept open ended and followed a pattern of discussion, exchange of views and counter questioning. The interviews were recorded as a video as well as audio file and later transcribed to explore further.

- *Software Used for Analysis of Interviews – N Vivo*

  > NVivo is a qualitative data analysis (QDA) computer software package produced by QSR International. NVivo helps qualitative researchers to organize, analyze and find insights in unstructured or qualitative data like interviews, focus group discussions,

open-ended survey responses, journal articles, social media and web content, where deep levels of analysis on small or large volumes of data are required. (About QSR Nvivo, Kent State Library, 2015)

● Software Used for Transcription of Interviews – otter.ai

Otter turns your voice conversations into smart notes and transcripts that you can easily search and share. You can use it to take notes at your meetings and interviews, capture your thoughts and ideas while you're driving in the car, and transcribe your existing recordings and podcasts. (Otter.ai, Official website, 2017)

Interviewees' Profile

● Gayatri Raghwa

Environment Education Consultant, United Nations Environment Programme (UNEP), India

Gayatri Raghwa joined UNEP in early 2019 as UNEP's sole environmental education consultant based in India. She launched the Tide Turners Challenge in India and focuses on higher education work. As of mid-2021 Gayatri is in the process of setting up the India Green University Network. She has ensured the dissemination of Earth School (where India is second to the USA in terms of participation), and supported UNEP initiatives such as the Little Book of Green Nudges and the Race to Zero. A teacher by training, with 22 years of experience at college and school levels in India, Gayatri also spent 15 years raising the profile of environmental education in the UAE. She advises several international organizations and is honorary Executive Director at Wildecologue, an organization committed to providing real life sustainability experiences to youth and other target audiences (UNEP official website, 2019).

● Balaji Natarajan

Senior Programme Management Officer, United Nations Multilateral Fund, Montreal, Canada

Balaji Natarajan joined UN MFS as Senior Programme Management Officer in June 2016 after working as Programme Officer in UNEP for three years and later as Technical Specialist in UNDP for six years. Present day, his area of work includes work on environment issues relating to Ozone Depletion and climate change particularly in the context of EE in cooling appliances.

*The views of the respondent are individual and does not belong to that of his organization.

● Rohini Balasubramanian

Sustainability and climate change expert at RITES Ltd.

Dr. Rohini Balasubramanian is an independent consultant based in Bengaluru, India and specializes in Environment and Climate Change. Her areas of

expertise include sustainable transport solutions, climate finance, green bonds, GHG emission reduction mechanisms and SD of urban agglomerations. She has experience in working in various geographies such as South Asia (India, Bangladesh), South East Asia (the Philippines, Cambodia, Laos, Thailand, Vietnam), Korea and Egypt.

- Natarajan P

Founder and CEO, Puvi Earthcare Solutions, Climate Leader and Sustainability Coach

Mr. Natarajan sports 7 years of hands-on experience in the field of Environment, predominantly into Solid Waste Management and 20 years of experience in the IT industry. When Chennai had not woken up to the alarming garbage conundrum (2014–2015), Mr Natarajan was deeply affected by the impending damage it would cause and started Namma Ooru Foundation along with a few more passionate souls. He realized that being a part-timer and handling this mammoth task is not going to work, so he gave up his IT job and founded PUVI Earth Care Solutions a social enterprise with 100% focus to provide sustainable environmental solutions and came in full-time to tackle Climate Change (PUVI official website, 2020).

- Tata L. Raghuram

Chairperson of Father Arrupe Centre for Ecology & Sustainability and Associate Professor of Strategic Management at XLRI Xavier School of Management Jamshedpur

Dr. Raghu Tata is the Chairperson of Father Arrupe Centre for Ecology & Sustainability and Associate Professor of Strategic Management at XLRI Xavier School of Management Jamshedpur. He has over 30 years of research, teaching and consulting experience in SD, the last 17 years in the Corporate Strategy – Sustainability domain. Raghu is the first faculty member from any management institutes in India to offer a full course on Corporate Sustainability (since 2007) (XLRI official website, 2022).

- Anand Sanghi

President of Australia, New Zealand, SouthAsia Market and India, Vertiv Co.

Anand Sanghi is president for Vertiv Australia, New Zealand, Southeast Asia and India (ASI). He is responsible for the company's business development and operations in those regions. He has spent more than 26 years in the technology and engineering space in the Asia-Pacific region. He joined Emerson Network Power (now Vertiv) in 2001 as director of planning and achieved positions of increasing responsibility before being appointed president, Vertiv Asia in 2017 and now manages the ASI region. Prior to joining Vertiv, Anand led a start-up business and spent time with Emerson Electric and Copeland Corporation.

*The views of the respondent are individual and does not belong to that of his organization.

● Anusha Burte

Sustainability Student and Graduate Student Assistant at Arizona State University, USA
Former Sustainability Manager at Global Compostables Alliance with background in leather industry.

Anusha, with an undergraduate degree in Leather Design from National Institute of Fashion Technology, Chennai joined Global Compostables Alliance (GCA) Sustainability Manager where she described how her day-to-day work involved acting as a consultant to brands who wanted to switch to a cleaner and more sustainable way of doing business as well as being a part of auditing to rate and certify companies on sustainability scale. However, when she stumbled upon courses being offered in US universities in sustainability, she decided to go for Masters as she wanted to a more holistic view and understanding of the concept and also for advanced career opportunities. At her college, she is also currently working simultaneously as a Graduate student assistant and described that it is one of the best times to be a student of sustainability.

Results and Findings

The findings have been discussed based on the relevant analysis of output of all the interviews. The recurring prominent themes obtained after analysis have been expanded below in detail.

Curriculum

HEIs are critical to facilitating a transition towards a sustainable society and environment (Orr, 2002; Sachs et al., 2019). One contribution of higher education can be the creation of a brighter future through the education of students (the decision makers of tomorrow), thereby providing them the opportunity not only to develop sustainability competencies (Wiek et al., 2011) but also to critically reflect on their values and to apply these values and knowledge to their future employment and lives (Sipos, Battisti, & Grimm, 2008).

In an effort to advance the implementation of Education for Sustainable Development (ESD) in HEIs, strong impetus, support, and policy frameworks have been put forth by the UN Decade for ESD (2005–2014) as well as by the subsequent (2015–2019) Global Action Program (GAP) (UNESCO, 2016) and – most recently – by the SDGs via sub-target SDG 4.7., which states that by 2030, it is necessary to 'ensure that all learners acquire the knowledge and skills needed to promote SD, including, among others, through education for sustainable development' (UN, 2015, p. 17). Currently, the Roadmap ESD for 2030 provides guidance for further implementing ESD in HEIs (UNESCO, 2020).

In HEIs, ESD can be integrated at the micro-level through teaching and learning in courses (Roy et al., 2020) and at the macro-level through programs and curricula (Acevedo-Osorio et al., 2020; Yarime et al., 2012). Various case studies have provided insights into how this integration can be successful.

Mostly, implementation process(es) of sustainability curricula is defined as

> the development and implementation of new approaches to teaching and learning (courses, programs, and certificates) in the paradigm of education for sustainable development, and at the same time, the acknowledgement of sustainability as a cross-cutting theme within the existing curricula. (Barth, 2015, p. 47)

If ESD is defined as *sustainability education* in the sense of Sterling and Thomas (2006), then the core of the sustainability curricula comprises a paradigm shift that is not only reflected in university teaching but also permeates the entire institution. Therefore, throughout this study, connections are also drawn to the three other areas – namely research, outreach, and campus sustainability – and to how these areas relate to teaching activities. In this context, the *implementation process* is defined as being institutional and comprising various internal and external drivers and barriers.

Curriculum change processes are complex and differ significantly from institution to institution in terms of their breadth, depth, and influences. Insights into such complex sustainability curriculum implementation processes build on and synthesize knowledge from various fields and disciplines. Based on the numerous case studies published thus far, all curriculum changes processes in HEIs appear to be unique and involve an individual context and history that impede both drawing comparisons and the ability of HEIs to learn from one another. However, in reference to existing lists of what are perceived as common drivers and barriers and amidst theories on change processes, Corcoran et al. (2004) rightfully raise the question of whether patterns exist among similar processes of sustainability curriculum change. Furthermore, various authors have provided guidelines for successful change processes that assume that comparable planned change processes exist (Junyent & Geli de Ciurana, 2008; Velazquez et al., 2006).

Pedagogy

There is no 'correct' pedagogy for sustainability education, but there is a broad consensus that it requires a shift towards active, participative, and experiential learning methods that engage the learner and make a real difference to their understanding, thinking and ability to act.

We've identified five pedagogic elements that cover a host of pedagogical approaches or methods that staff at Plymouth might use to bring these elements into the learning environment.

1. *Critical reflection* – including the more traditional lecture, but also newer approaches such as reflexive accounts, learning journals, and discussion groups.
2. *Systemic thinking and analysis* – the use of real-world case studies and critical incidents, project-based learning, stimulus activities, and the use of the campus as a learning resource.

3. *Participatory learning* – with emphasis on group or peer learning, developing dialogue, experiential learning, action research/learning to act, and developing case studies with local community groups and business.
4. *Thinking creatively for future scenarios* – by using role play, real-world inquiry, futures visioning, problem-based learning, and providing space for emergence.
5. *Collaborative learning* – including contributions from guest speakers, work-based learning, interdisciplinary/multidisciplinary working, and collaborative learning and co-inquiry.

Employability

ILO defines 'green jobs' as decent jobs that contribute to, preserve, or restore the environment, whether they are in traditional sectors such as manufacturing and construction, or in newer and quickly growing green sectors such as renewable energy and energy efficiency. These jobs include technicians educated through technical institutions and business managers, marketers, financiers, engineers and others typically educated through universities. Another benefit of these green jobs is their effect on the global economy. The ILO has warned that, if nothing changes, growth in future employment will be insufficient to satisfy the growth in the workforce in emerging and developing countries. However, 'changes in production and use of energy to achieve the 2°C target may lead to the creation of around 18 million jobs in the world economy', explains this organization in its report *World Employment and Social Outlook 2018*. These changes, aimed at complying with the Paris Agreement and generating green jobs, will include more extensive use of energy from renewable sources, the growth of electric vehicles and carrying out construction works to achieve energy efficiency in buildings. As a consequence of the decarbonization of the economy and the development of the circular economy, professions of future will be created, with existing jobs adapting to the new green reality. Due to the wide range of green jobs available today, there is no single training profile for those known as green collar workers. Other than degrees, courses and postgraduate courses specializing in ecology, green training for a specific job consists of environmental specialization within a sector.

Industry Interface

There is an increasing pressure on HEIs to produce societally relevant and impactful research, and to actively engage with non-academic stakeholders who are looking for answers to their challenges. Fostering partnerships with industries is gaining increased prominence as the mission of universities is gradually moving beyond the tradition of education and research towards a 'third mission' related to their ability to partner with governments and communities to achieve societal impact. Increasingly, universities are engaging with renowned international institutions, governments and community members. What is needed are long-term and sustainable strategic partnerships to bring universities, governments and the communities they serve together in addressing pressing challenges and transforming societies.

Practical Learning

The practical knowledge cluster involves competencies necessary for 'linking knowledge and action for sustainable development' to bridge the 'knowledge-action gap' (van Kerkhoff & Lebel, 2006). Implementation skills, a critical component of implementation competence, require hands-on experience in putting knowledge into practice, and thereby testing the validity and robustness of action-oriented (strategic) knowledge about sustainability transitions and transformations (de Haan, 2006). The practical learning opportunities can contribute to building key competencies in sustainability. They emphasize integrating real-world learning opportunities into undergraduate sustainability education, but most of the insights also apply to graduate programs. It is essential in undergraduate education for four reasons. First, students consider undergraduate education as very important in preparing for their professional careers in general (Bradburn et al., 2005), and apparently for careers in sustainability in particular. Second, an increasing number of universities intend to educate not just a few specialists, but a new generation of scholars and professionals who will participate in sustainability transformations (Arima, 2009; Crow, 2009; Moore, 2005). Third, a majority of faculty members in sustainability programs experience the paradoxical situation of being responsible for training students in areas in which they themselves have not been trained. Teaching undergraduate courses in sustainability enables faculty members to familiarize themselves with new paradigms. Finally, professional sectors increasingly seek expertise in sustainability when filling positions from entry to senior level.

Internship

The beauty of an internship is that it is a unique experience that serves different purposes for different students. Internships play an important role in preparing students to critically engage with the social world, especially with gaining first-hand skill development and knowledge not normally obtained in a regular classroom (Sahrir et al., 2016). In today's changing world and uncertain future, students need internships that not only prepare them for their future occupations but also that can enhance their sustainability knowledge, leadership skills, critical thinking and advocacy on their college campuses. Integrating sustainability in higher education requires multilevel coordination throughout the campus organization including the integration of pedagogy, academic research, student involvement, social impact assessments and holistic systems thinking strategies. One of the major objectives of sustainability integration in higher education is to provide future graduates with sufficient knowledge and skills to face global challenges and to produce change towards a sustainable future. This means enabling students to develop competencies such as critical, holistic, systemic and interdisciplinary thinking (Kearins & Springett, 2003; Lourenço, 2013; Ryan et al., 2011; Sipos et al., 2008; Thomas, 2009). These dimensions are from the concept of sustainability literacy which can be defined as the knowledge, skills and mindsets that help compel an individual to become deeply committed to building a

sustainable future and allowing people to make informed and effective decisions to this end (Decamps, Barbat, Carteron, Hands, & Parkes, 2017). The importance of the sustainability internships should be focused not only on the short-term goals such as knowledge, attitudes and skill but also on long-term behavioural change commitments (Wynveen, 2017).

Assessment

HEIs are faced with increasing requests to disclose how they integrate, and contribute to, sustainability, for example, from quality management systems (Holm et al., 2015; Wals, 2014), or by participating in voluntary initiatives such as the Principles for Responsible Management Education (PRME, 2016). In recent years, there has been an emergence of different sustainability assessment tools for higher education (see Shriberg, 2002; Yarime & Tanaka, 2012). Subsequently, the topic of sustainability assessment has been receiving more attention in the literature (Ceulemans et al., 2015). For example, a special issue of Assessment & Evaluation in Higher Education has recently been devoted entirely to this topic (Shiel et al., 2015). Sustainability assessments examine the integration of sustainability into HEIs' functions of education, research, operations, and community engagement (Fischer et al., 2015; Lozano, 2006; Yarime & Tanaka, 2012). Within the realm of education, curricular assessments examine the presence of sustainability themes in the curriculum. Curricular assessments give insight as to the extent sustainability is integrated into study programs, which can offer university leaders a starting point for change (Lozano & Young, 2013). However, consensus has not been reached on how exactly to assess the integration of sustainability in curricula (Shriberg, 2002), as evidenced by the varying assessment tools available to higher education. The differing conceptualizations of 'sustainability' complicate assessments in general and curricular assessment in particular, because an assessment requires the ability to qualify what is being assessed, and as sustainability is a contested concept in perpetual metamorphose, the assessment itself proves to be a challenging task.

Dedicated Higher Education Institutes

The integration of SD has become a relevant topic in higher education and increasingly, HEIs are attempting to take responsibility as agents in promoting SD principles (Lozano et al., 2015; Lukman & Glavič, 2006; Ramos et al., 2015). HEIs can contribute significantly to fostering the transition towards a sustainable society due to their double role: (1) creating knowledge and transferring this knowledge to the society; and (2) preparing students for their future role in society (de Lange, 2013; Disterheft et al., 2013). Business schools have particular responsibilities to prepare their graduates to make ethical and responsible economic and management decisions (Figueiró & Raufflet, 2015; Stubbs & Cocklin, 2008; Wu et al., 2010), as well as specific challenges to integrating sustainability into their curriculum, including gaining faculty awareness of SDGs and faculty support for such integration (Maloni et al., 2012; Rusinko, 2010).

Recommendations

- Focused Approach on Sustainability

A focused and streamlined approach on sustainability curriculum is needed that is characterized by manifold relationships and connections with important stakeholders. A focused approach should involve a formal participation process, a broadly accepted guiding vision statement, and sustainability implementation across education, research, campus operations, and outreach that results in an overall paradigm shift. Other scholars refer to this type of integration as a 'whole-institution approach', in which SD is institutionalized in all areas and at the core of the HEI (D'Andrea & Gosling, 2005). Exclusive degrees and certificates (UG, Masters, Accelerated) can be offered on Sustainability (only a handful are currently offering these).

ESD is implemented with the help of sustainability ambassadors at the HEIs. A wide spectrum of external stakeholders also support the adoption of ESD, which creates a sense of urgency through increasing external pressure and coalitions of different bandwidth of stakeholders. This top-management support enables a formal collaborative visioning process that defines ESD goals for the higher education institution by involving the campus community. This participation results in a formalized vision statement and strategy that is executed and further monitored by a quality assessment system. To implement the strategy, the organizational structure is adapted accordingly. Dedicated resources – such as funding, faculty training, ongoing dialogue-focused communication, and collaboration – ensure a long-lasting change process (Weiß, 2021).

- Step by Step Integration

An alternative to a full-time program on Sustainability can be to offer a part of the academic course credits on the same. Students and/or faculty may begin the process by asking for and incorporating specific courses and programs within a few departments. These initiatives often have their start in environmental projects, such as recycling initiatives.

An informal facilitation strategy characterized by knowledge exchange through informal communicative arenas is employed to advance implementation and ensure a critical mass of supporters with the aim of encouraging unity among the campus community and sharing resources to implement ESD. Due to the lack of leadership backing and specific financial resources during this stage, more inventive means of financing allocation are adopted, most often from outside sources, such splitting expenses with the city or forming a sponsoring club. Following the initial phase, the originally modest presidential leadership support grows thanks to a new leadership team or increasing knowledge. The training strategy changes as a result, moving from a bottom-up effort to a more formalized, leadership-supported plan and facilitation. The formalization of communication, support systems (including professional development), the sporadic involvement of stakeholders from the inside out, and quality control systems. ESD is typically described in the institution's statement of purpose as well. With time and sporadic cross-synergies, sustainability is developed in studies, campus activities, and engagement.

Discussions

Throughout the clusters, a variety of internal and external stakeholders, including students, professors, leadership, and external stakeholders (such as international researchers), have the capacity to start a comprehensive implementation process. In order to facilitate change inside HEIs, internal stakeholders are more potent than external stakeholders.

The implementation of sustainability curricula can begin with individual initiatives in education, campus operations, research, or outreach activities: we found that both across and within patterns, the impetus for implementing sustainability in education often has its starting point in other areas of the institution. For instance, a higher education institution with a focus on a sustainable campus management system often expands the topic of sustainability to the educational area at some point after students have expressed interest in learning more about campus recycling initiatives via courses and programs. Another possibility for implementing sustainability curricula lies in transferring it from the area of research to that of education, which may begin in a collaborative project with external and/or inter- or transdisciplinary partners. Other studies have also found that it is conducive to involve all areas of a higher education institution in implementing sustainability topics in order to achieve more comprehensive sustainability curriculum implementation (Velazquez et al., 2005) across patterns, the form and extent of communication – and participation initiatives differentiate the patterns of sustainability implementation. More comprehensive implementation is always accompanied by a communication – and participation strategy to create a sense of ownership, formalize the change in a unified guiding vision statement, and make the impact last. It does not matter which stakeholder group begins the communication process; however, at some point, a formal, broad-based communication process that is supported by the institution's leadership is more powerful as it can evolve into a formal participation- and decision-making process. The more seriously that communication is seen as a two-way process with a focus on mutual feedback and participation, the higher the achieved level of sustainability curriculum implementation will be as this implementation helps to create an understanding of sustainability and a desire for its integration. Useful tools in this process can include starting an awareness-raising campaign (e.g. a sustainability inventory that shows sustainability initiatives that have already been implemented), creating communicative arenas, running a web portal (public wiki) that provides feedback on a strategic plan, and fostering a collaborative visioning process. Interdisciplinary spaces enable more comprehensive sustainability curriculum implementation but must be supported by leadership. Where such formal communication measures are not available, informal opportunities for champions to exchange knowledge and motivate one another can serve as partial compensation.

Conclusion

Sustainability curriculum is becoming an imperative in today's world. The below image captures the dominant key themes that emerged as a part of our study, and the essence of what each respondent highlighted has been indicated in Figs. 4.1 and 4.2.

Fig. 4.1.   Word Cloud Containing the Dominantly Occurring Keywords For All Interviews Summarized and Taken Together. *Source*: Author's own.

The primary research conducted for this study includes in-depth interviews conducted with diversified eminent professionals like NGO activists, educationalists, UN associates, independent environment consultants, education consultants, corporates and manufacturing to name a few as well as students who are currently pursuing courses on sustainability. The sample chosen was International in nature, from many parts of the world- and this makes this study very significant and they represent a holistic view on the topic of Sustainability. The analysis was done using the latest version of *N Vivo* software.

The study has revealed many important and interesting insights. The key themes emerged are an innovative pedagogical approach, practical learnings, an Industry interface, practical learnings, Internships, and Assessments and employability. Detailed perspectives on each of these has been discussed. The concept of sustainability in the developed economies of the world (North) and developing economies of the world (South) has left a huge void caused by the difference in

Predominant theme / Interviewee	Assessment	Higher Education Institutes	Practical Learning	Curriculum	Industry Interface	Pedagogy	Internship	Climate finance	Employability
Gayatri Raghwa	✓	✓	✓	✓		✓		✓	
Rohini Balasubramanian	✓	✓	✓	✓			✓	✓	✓
Natarajan P		✓	✓				✓		
Tata L Raghuram	✓	✓	✓	✓	✓	✓			
Balaji Natarajan	✓	✓			✓		✓	✓	✓
Anand Sanghi		✓			✓		✓	✓	✓
Anusha Burte		✓	✓	✓		✓	✓		✓

Fig. 4.2.   A Snippet of Dominant Keywords Cross Tabulated Against its Occurrence in Individual Interviews. *Source*: Author's own.

growth strategies in the two geographies. HEIs, through their curriculum, can bring them both on the same page, so that the strategies and plan of action are synced and oriented in a unidirectional manner (Khoshoo, 1998). HEIs can also play a big role in educating the youth about issues of carbon footprint, climate change, etc. from the ground level. They can facilitate and conduct scientific and management research in this field to provide sensitization and innovative solutions to existing problems. and also contribute to developing a sustainable co-living environment alongside rapid industrialization (Lee, 2008).

HEIs can also help shape and form a base for offering various certifications, laws, and regulations across industries, brands, market segments, and consumers, that will have a global impact (Corcoran & Wals, 2004). Experiential learning, new methodologies of teaching, peer learning, and one of a kind curriculum that is fresh, will provide the students and the faculty with a wide array of opportunities, pedagogy, and creativity, to explore their thoughts and integrate various fields like technology, engineering, manufacturing, etc., in order to attain a formal competency in the subject of sustainability (Clugston & Calder, 1999).

Contributions to Theory

Two emerging sustainability theories that have been broadly covered in this chapter are Green economics and Triple bottom line theory.

Green Economics: The role of Green Economy, Sustainable Consumption and Production and Resource Efficiency for Sustainable Development: Sustainable Consumption and Production aims to improve production processes and consumption practices to reduce resource consumption, waste generation and emissions across the full life cycle of processes and products – while Resource Efficiency refers to the ways in which resources are used to deliver value to society and aims to reduce the amount of resources needed, and emissions and waste generated, per unit of product or service. The Green Economy provides a macroeconomic approach to sustainable economic growth with a central focus on investments, employment and skills (Bina, 2013).

Triple Bottom Line: The Triple Bottom Line is an accounting framework that incorporates three dimensions of performance: social, environmental and financial. This differs from traditional reporting frameworks as it includes ecological (or environmental) and social measures that can be difficult to assign appropriate means of measurement. The Triple Bottom Line dimensions are also commonly called the three Ps: people, planet and profits (Hammer, & Pivo, 2017).

Contributions to Practice

This study offers significant contributions to several stakeholders in society. The educationalists can develop a curriculum and a pedagogy that comprise both theoretical foundations based on Sustainability, and more importantly, interlay practical learnings from the field. This was voiced by both the industry as well as by the faculty. A hands-on approach, especially for those who are looking to make a career in this field, is considered critical. Organizations like the UN can

actively get more involved in formulating regulatory frameworks and assessments in the area of Sustainability. They can work with policymakers to ensure education Institutes include SDG protocols in their curriculum to students. Researchers have a lot to gain from the study. They can continue to work on details of which sectors need what kind of curriculum approach and work on tests to evaluate students' knowledge on this topic. Finally, industry practitioners can now understand what to expect from students graduating in Sustainability. They can work with Educational Institutes to formulate internship projects for students.

Overall, we believe that this chapter will provide fresh insights for anyone in the field of sustainability, and clear action points to work upon.

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