

THE ROLE OF ENTREPRENEURSHIP EDUCATION IN UNIVERSITIES TO PURSUE SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT

Flourishing businesses, in contrast to those solely prioritizing profit, have greater potential for innovation, more opportunities, reduced risk, and enhanced resilience in our rapidly changing world. This paper outlines the critical intersection between entrepreneurship education (EE) and the pursuit of UN Sustainable Development Goals (SDGs) within higher education institutions. This paper examines how universities can leverage EE as a stimulant for advancing sustainable development initiatives and fostering a culture of responsible entrepreneurship among students. Drawing on existing literature, the paper explores the multifaceted contributions of EE to the SDGs across various domains, including poverty alleviation, gender equality, environmental sustainability, and economic growth. It highlights the role of EE in equipping students with the knowledge, skills, and mindset necessary to address complex social and environmental challenges through entrepreneurial endeavors. Furthermore, the paper identifies the strategies and best practices for integrating sustainability principles into EE curricula, emphasizing the importance of experiential learning, interdisciplinary collaboration, and community engagement. It also discusses the role of universities as hubs of innovation and research in developing solutions to pressing global issues and fostering entrepreneurial ecosystems that support sustainable development initiatives. Overall, the paper underscores the transformative potential of entrepreneurship education in universities to drive meaningful progress towards the achievement of SDGs. It provides insights and recommendations for educators and practitioners seeking to harness the power of entrepreneurship education to create positive social, environmental, and economic impacts in the pursuit of sustainable development.

Keywords: Entrepreneurship Education; Sustainable Development Goals; Sustainable Entrepreneurship Education; Education for Sustainable Development; Flourishing Business Canvas.

INTRODUCTION

The growth of the human population brings negative effects on the environment because what humans do affect the air, water, land, natural resources, and even animals. People are using natural resources faster than the planet can replenish them and globalization surely fastens the process. That is why humans need a new collective goal, sustainability. Ehrenfeld (2008), an MIT scholar, defines sustainability as “*the possibility that human and other life will flourish on the Earth forever*”. Earth supplies are not infinite so if no serious transformational actions are being taken, we are going to run out of supplies.

In the contemporary landscape of global challenges, the imperative for sustainable development has emerged as a central concern for societies, governments, and businesses alike. The world has experienced a series of major setbacks to stability in regions around the world since the beginning of the COVID-19 pandemic. By 2030, the world bank estimated 59% of global extreme poor will be in countries affected by fragility, conflict, and violence (FCV). These new developments add to a growing number of risks for FCV settings, including food insecurity, climate change, rising inequality, demographic changes, and the social impact of influenza.

Addressing environmental challenges like climate change will undoubtedly necessitate significant social, economic, and technological transformations, many of which are expensive and will demand substantial investments. Tackling these intricate issues requires collaborative interdisciplinary approaches, as emphasized by Lang et al. (2012): spanning sectors (including governments, corporations, and civil society), operating at multiple levels (from local to global), and integrating diverse academic knowledge to comprehensively define and resolve the matter.

As the world strives to address complex issues such as poverty, inequality, environmental degradation, and economic instability, the role of entrepreneurship education (EE) becomes increasingly crucial. The United Nations (UN) has increasingly focused on promoting entrepreneurial initiatives to inspire ambitious young individuals to establish their enterprises. This approach aims to generate employment opportunities for themselves and others, recognizing the pivotal role of economic empowerment in achieving the Sustainable Development Goals (Rashid, 2019).

Entrepreneurship plays a crucial role in advancing sustainable products, services, and initiatives aimed at addressing diverse environmental and social issues, as indicated by Youssef et al. (2018) and Shabbir (2023). Entrepreneurship education, which was traditionally associated with fostering business acumen, innovation, and economic growth, is evolving to embrace a broader and more profound purpose. This paradigm shift recognizes that entrepreneurship, when imbued with a sustainability ethos, can be a potent force for addressing pressing global challenges. The significance of entrepreneurship education in fostering the adoption of sustainable business practices is recognized in studies by Hall et al. (2010) and Kuckertz & Wagner (2010).

A socially responsible market economy relies on individuals who are confident, responsible, and actively engaged in shaping their own and societal future through entrepreneurial and social initiatives (Lindner, 2018). Furthermore, Wyness & Jones (2019) argue for a shift in the strategy of sustainability practitioners, emphasizing the value and encouragement of entrepreneurial behaviors to address the substantial challenges faced by the global community. An essential aspect of this cultural transition involves encouraging sustainability educators in higher education, particularly those working in the field of Education for Sustainable Development (ESD), to embrace entrepreneurial concepts.

Consequently, higher education institutions, especially business schools, can promote sustainability driven by self-interest and consideration of various stakeholders. By equipping individuals with the knowledge, skills, and values necessary to create businesses that balance economic success with social and environmental responsibility, EE emerges as a key player in advancing the SDGs.

Companies are obligated to integrate these three objectives into their business practices to enhance living conditions for everyone, without exceeding the planet's capacity or jeopardizing resources for future generations (Iqbal et al., 2020; Slimane, 2012). Achieving such a noble objective inevitably necessitates the comprehensive preparation of upcoming business leaders and entrepreneurs in the knowledge, skills, and values essential for sustaining businesses and enterprises that contribute to "inclusive" and "sustainable" economies. Consequently, there is a pressing need for consistent implementation of sustainable Entrepreneurship Education (EE), ensuring that business owners and leaders acquire the requisite values, skills, and knowledge to fulfill this objective.

This paper navigates through the transformative potential of entrepreneurship education, exploring its capacity to instigate sustainable business practices, empower individuals to contribute meaningfully to societal development and align entrepreneurial endeavors with the broader goals of environmental conservation and social equity. Through a comprehensive analysis, this paper aims to elucidate various impacts of EE on the realization of SDGs, emphasizing its role in shaping a generation of entrepreneurs committed to creating businesses that not only thrive economically but also contribute positively to the well-being of our planet and its inhabitants.

LITERATURE REVIEW

Sustainable Development Goals

The United Nations SDGs, adopted in September 2015, offer a holistic roadmap for global progress, emphasizing the interconnectedness of social, economic, and environmental dimensions (Morton et al., 2017). This integrated approach seeks to address diverse challenges by fostering collaboration and collective action. Each of the 17 SDGs (Figure 1) is intricately linked, illustrating the interdependence of efforts to achieve a sustainable and equitable world by 2030. They all include the three dimensions of sustainable development which are the social, economic, and environmental dimensions and focus on five areas namely people, planet, prosperity, peace, and partnerships (United Nations Department of Economic and Social Affairs, n.d.)



Figure 1. The UN SDGs
Source: <https://sdgs.un.org/goals/goal2>

Within the SDGs, a central focus is on poverty eradication (Goal 1), addressing issues of hunger, health, and education to uplift marginalized communities and enhance global living standards. By tackling the root causes of poverty, including social inequalities and lack of access to resources, Goal 1 contributes significantly to the broader agenda of sustainable development, creating a ripple effect that positively impacts other interconnected goals.

Poverty and hunger share a symbiotic relationship. Individuals living in poverty often struggle to access sufficient and nutritious food. Goal 2 aims to end hunger, achieve food security, and promote sustainable agriculture. Poverty is also a significant determinant of health outcomes. Individuals living in poverty often face challenges in accessing healthcare services, leading to higher rates of preventable diseases and mortality. Goal 3 focuses on ensuring healthy lives and promoting well-being for all at all ages.

Poverty and lack of education are closely interlinked. Individuals living in poverty often face barriers to accessing quality education, perpetuating the cycle of disadvantage across generations. Addressing poverty under Goal 1 involves providing opportunities for education and empowering individuals to break free from the constraints of poverty through knowledge and skills development. Achieving No Poverty sets the stage for creating thriving, healthy, and educated communities, fostering a more equitable and sustainable world. Quality education (Goal 4) is advocated to foster sustainable development. By ensuring inclusive and equitable education for both men and women (Goal 5), the SDGs aim to equip individuals with the knowledge and skills necessary to contribute to economic growth (Goal 8), social cohesion (Goal 16), and environmental stewardship (Goal 13).

Climate action (Goal 13) is also central to sustainable development, connecting environmental preservation with collective well-being. Climate change affects biodiversity, marine ecosystems, and terrestrial habitats (Goals 14 and 15). Extreme weather events, such as droughts and floods, impact livelihoods and agricultural productivity, directly affecting vulnerable communities (Goals 1 and 2). Hence, it can exacerbate conflicts over scarce resources, leading to social instability (Goal 16). Climate change poses health risks through increased prevalence of vector-borne diseases, heat-related illnesses, and disruptions to healthcare infrastructure (Goal 3).

One way to mitigate climate change is by transitioning to clean and sustainable energy sources (Goal 7). Innovation in renewable energy technologies and sustainable infrastructure contributes to reducing greenhouse gas emissions (Goal 9). Understanding this, climate change education is crucial for building resilience and fostering sustainable practices. Integrating climate-related curriculum into education helps raise awareness and equips individuals with the knowledge to address environmental challenges (Goals 4 and 5). As environmental challenges escalate, this goal becomes crucial in safeguarding the planet for future generations (Goal 11).

SDG 17, Partnerships for the Goals, serves as a cornerstone that underscores the interconnected nature of global challenges. This goal recognizes the complexity and interdependence of issues facing our world today, emphasizing the need for collaboration, cooperation, and collective action to achieve sustainable development. The interconnectedness stems from the understanding that no single nation, organization, or community can address the multifaceted challenges alone. In an era of globalization, economic interdependence, and shared environmental resources, Goal 17 emphasizes the imperative of forming robust partnerships across borders and sectors.

Goal 17 highlights interconnectedness through its assertion of the involvement of diverse stakeholders, including governments, private sector entities, civil society, and

individuals. It acknowledges that addressing complex challenges requires a joint effort where each stakeholder brings unique perspectives, resources, and expertise to the table. The goal recognizes that the successful implementation of the entire SDG framework is contingent upon fostering partnerships that leverage the strengths of various actors.

Moreover, Goal 17 promotes the exchange of knowledge, technology, and financial resources among nations. It emphasizes the importance of developed countries supporting developing countries in their pursuit of sustainable development. By fostering technology transfer, encouraging capacity-building, and providing financial assistance, the goal aims to bridge gaps and ensure that progress is not limited by geographic or economic disparities. In addition to that, the goal also brings attention to the interconnected nature of challenges by advocating for coherence in policy and decision-making. It encourages integrated approaches to development that consider the interlinkages between social, economic, and environmental dimensions. This recognizes that solutions in one area may have ripple effects across others, and a comprehensive approach is necessary to address systemic issues.

The Role of Higher Education Institutions in Achieving the SDGs

The integration of sustainable development into the activities of an institution is a challenge for higher education administrators. In addition to integration challenges, HEIs also face additional obstacles in their day-to-day activities and operations related to resource availability, technology, or institutional culture as they attempt to move towards sustainability (Ávila et al., 2017). Higher education institutions have the responsibility to nurture global citizens who understand their interconnectedness with the world. They prepare the next generation of politicians, administrators, scientists, philosophers, and other actors who will be entrusted to build a better world to live in (Neubauer and Calame, 2017). Universities cultivate a sense of responsibility, empathy, and cultural awareness among students by promoting global citizenship education. This broader perspective encourages individuals to actively engage in addressing global challenges and working towards a more sustainable and equitable world.

Higher education institutions can lead by example through sustainable campus operations by adopting environmentally friendly practices, such as energy efficiency, waste reduction, and sustainable procurement, universities demonstrate a commitment to responsible and sustainable practices. Sustainable campus initiatives also serve as educational tools, inspiring students, and fostering a culture of sustainability. Universities, with their intellectual capital, are influential advocates for sustainable policies and practices. Through leadership, universities can shape public discourse, influence policy decisions, and inspire collective changes. Faculty members and researchers often engage in public debates, contribute to policy development, and advocate for evidence-based solutions to global challenges.

When it comes to sustainable development, higher education institutions have a major influence in raising awareness (Griebeler et al., 2022). They also play a vital role in advancing and fulfilling the SDGs. Research, education, and community engagement are areas that universities can contribute significantly to. Academic institutions can integrate sustainability principles into their curricula by offering courses and programs focused on sustainability, environmental science, social justice, and related fields. These institutions equip students with the knowledge and skills necessary to contribute to sustainable solutions, fostering a mindset of responsibility, critical thinking, and ethical decision-making among students. Research conducted by higher education institutions can generate innovative solutions to address environmental, social, and economic challenges.

Researchers at higher education institutions, lecturers, and students, can conduct studies that directly contribute to understanding and mitigating issues outlined in the SDGs, such as poverty, climate change, public health, and quality education. Innovations born out of academic research can have transformative impacts on sustainable development practices (SDSN, 2017, Soini et al. 2018).

Through community engagement initiatives, universities that are deeply embedded in their local and global communities can address immediate challenges and contribute to long-term sustainable development. This involves partnerships with local organizations, addressing community needs, and including students and faculty in service-learning projects that directly impact the communities they serve. Achieving the SDGs requires collaboration among diverse stakeholders (Albareda-Tiana et al., 2018). Higher education institutions are well-positioned to build partnerships among academia, government, industry, and civil society. Collaborative efforts can leverage collective expertise, resources, and networks to address complex challenges comprehensively. Partnerships can extend beyond national borders, contributing to global initiatives for sustainable development and becoming instrumental agents in promoting and realizing the transformative vision of the SDGs (Neubauer and Calame, 2017).

Entrepreneurship Education and SDGs

The word ‘entrepreneur’ comes from French (*entreprendre*) which means to undertake or to launch. Entrepreneurs, according to (Schumpeter, 1912), are the primary drivers of economic and social dynamics. Schumpeter emphasized their skills and abilities in the independent development and implementation of ideas and pointed out their innovative power, which includes the creation of new products, production methods, organizational structures, or alternative distribution channels. Entrepreneurship is a creative and innovative industrial skill that creates what was previously available and improves on existing ones (Ayeni & Erwat, 2023). Entrepreneurs have the capability to bring together money, people, ideas, and other resources to form value creating networks. Whereas all entrepreneurs engage in bridging activities between suppliers and customers to create and disrupt markets (Schaltegger & Wagner, 2011).

Education plays an important role in preparing students to enter the business world that is rapidly changing and becoming more complex. Higher education is critical in setting the groundwork for the development of skills required to deal with the opportunities and risks that come along with climate change, environmental degradation, and resource scarcity (Borel-Saladin & Turok, 2013; Lans et al., 2014). Entrepreneurship is considered important for the development of sustainable products and services and the implementation of new projects addressing various environmental and social concerns. EE refers to the development of independent ideas and the acquisition of the respective skills and abilities that are necessary to implement these ideas. There are three intentions of EE which are learning to become an entrepreneur, learning to become entrepreneurial, and learning to understand entrepreneurship (Gibb & Nelson, 1996). Understanding these intentions will help develop teaching and learning methods in various disciplines.

Previously, scholars in the education field tended to focus exclusively on either ESD or EE, but not both. While EE is commonly associated with business schools, ESD typically originates from the realm of environmental education departments. To facilitate effective cross-university integration of EE, interdisciplinary solutions and an embedded curriculum are essential. Furthermore, due to an increased emphasis on sustainability, EE is now a mandatory component in nearly all undergraduate programs. Consequently, students often

encounter EE organically throughout their programs rather than intentionally selecting an entrepreneurial concentration (Lans et al., 2014).

The term 'sustainable entrepreneurship' has gained prominence as a lens through which to examine the impact of entrepreneurial endeavors on social, ecological, and economic aspects, encapsulated in the concept of sustainable development. The primary motivation behind sustainable entrepreneurship is to address social and environmental challenges through the establishment of successful businesses. Sustainable entrepreneurship represents a business creation process that connects entrepreneurial activities with the realization of sustainable innovations that benefit a broader segment of society (O'Neill et al., 2006). By implementing such (radical) sustainability innovations, sustainable entrepreneurs often meet the unmet demands of a larger group of stakeholders. Notably, sustainable entrepreneurs differ from conventional entrepreneurs, as highlighted by Schaltegger & Wagner (2011), by effectively combining environmental progress and market success through the initiation of activities and processes that identify, evaluate, and capitalize on profitable business opportunities while contributing to sustainable development.

Education should actively promote sustainable development by instilling values and capacities in students to coexist harmoniously, embrace human diversity, uphold gender equality and human rights, and actively engage in sustainable development. To enable current and future sustainability entrepreneurs to succeed, higher education institutions are required to provide support and skills to entrepreneurs in general and to facilitate the transfer of skills (Kimanzi, 2020). In addition to that, identifying and creating opportunities while studying will lead to more desirable outcomes (Lindner, 2018). Recognizing the interconnectedness of cognitive processes and sustainability-related content can encourage university leaders and scholars to champion sustainable development and entrepreneurship (Lourenço et al., 2012).

The relationships between EE and SDGs contribute to various aspects of sustainable development. Entrepreneurship has been proven to advance social and environmental sustainability, yielding positive impacts in various areas, such as financial inclusion, women's empowerment, sustainable agriculture, and minority integration (Apostolopoulos et al., 2018). EE equips individuals with the skills and knowledge to create businesses and generate income, thereby contributing to poverty reduction (SDG 1). By fostering entrepreneurial endeavors, EE creates opportunities for economic empowerment and social mobility, ultimately helping to lift individuals and communities out of poverty. EE stimulates job creation, fosters economic growth, and promotes sustainable livelihoods by encouraging entrepreneurship and small business development. It can also generate employment opportunities and enhance economic productivity by nurturing an entrepreneurial culture and supporting startups and small enterprises (SDG 8).

EE can empower the current and future generations with profitability and societal values (Ayeni & Erwat, 2023). It also promotes lifelong learning and skills development, which are essential components of quality education (SDG 4). EE enhances students' ability to think critically, solve problems creatively, and adapt to changing environments by integrating entrepreneurship principles into educational curricula, thereby fostering a culture of innovation and entrepreneurship. In addition to that, by addressing gender disparities in entrepreneurship and promoting female participation in the entrepreneurial ecosystem, EE has the potential to empower women and promote gender equality by including and providing them with access to entrepreneurial opportunities and resources (SDG 5 and 10).

By promoting responsible entrepreneurship practices and supporting the creation of sustainable businesses and innovative ventures, EE contributes to the development of a dynamic and resilient entrepreneurial ecosystem, driving innovation, and facilitating the creation of sustainable infrastructure (SDG 9). It also contributes to building resilient and inclusive cities that are environmentally sustainable and socially equitable (SDG 11). Furthermore, EE encourages businesses to adopt environmentally friendly and socially responsible approaches to production and consumption patterns (SDG 12).

Providing individuals with a robust academic education generates the human capital necessary for enhancing product and process innovation. Specialized EE further refines human capital, skills, and behaviors crucial for entrepreneurship (Baumol et al., 2011; Martin et al., 2013; Walter & Block, 2016). EE is indispensable in unlocking the full potential of entrepreneurship, particularly in contexts marked by vulnerability and poverty, where untrained entrepreneurs prevail, and small business operations often progress slowly and primarily function in survival mode (Rashid, 2019).

Sustainable development necessitates entrepreneurs with a proven track record of achieving social or environmental objectives while generating profits from consumers through superior products or processes (Schaltegger & Wagner, 2011). Successful sustainable entrepreneurs possess skills in recognizing opportunities and interpersonal abilities that enable effective communication, learning from, and adapting to stakeholders. Creativity and innovation play a crucial role in sustainability, as sustainable entrepreneurs not only seek environmentally friendly solutions to existing problems but also anticipate new challenges, trends, and solutions. Given the complexity of sustainability issues, professionals who can explore new solutions and embrace new perspectives are essential for addressing these challenges.

RESEARCH METHODS

Research methodology using literature review as a method involves systematically collecting, analyzing, and synthesizing existing scholarly literature relevant to a particular research topic or question. This method is commonly used in academic research to gain a comprehensive understanding of the current state of knowledge in a specific field or area of study. There are different approaches to conduct literature review such as systematic review, semi-systematic review, and integrative review (Snyder, 2019). Given the right circumstances, all these review strategies can be very helpful in answering a specific research question.

This study uses the semi-systematic or narrative review approach which is designed to impede a systematic review process for topics which have been studied differently by various groups of researchers in different fields (Wong et al., 2013). A few methods can be used to analyze and synthesize findings from a semi-systematic review. These methods often have similarities to approaches used in qualitative research in general. A qualitative approach is a process of examining descriptive data from individuals, experts, scholars, or phenomena.

After defining the research topic, a search strategy is developed to identify relevant literature. This involves searching electronic databases, academic journals, books, conference proceedings, and other sources of scholarly information. Researchers then establish selection criteria to determine which sources will be included in the literature review. Criteria includes publication date (mostly ten years to date), relevance to the research topic (SDGs, triple bottom line, EE, higher education institutions, Flourishing

Business canvas, Abundance Cycle canvas), methodological rigor, and credibility of the authors. Relevant literature based on the established selection criteria was collected and the selected literature was analyzed to identify key themes, trends, patterns, and gaps in the existing research. The findings of the literature review are used to develop a coherent narrative that summarizes the current state of knowledge on the research topic. The synthesis step involves organizing the literature thematically, chronologically, or by theoretical framework. Finally, researchers write up the findings of the literature review in a clear and coherent manner.

RESULTS AND DISCUSSION

Integrating Sustainability Principles into Entrepreneurship Education

It is noticeable that higher education institutions are gradually incorporating SDGs and other commitments related to them into their current policies and plans (Griebeler et al., 2022). Currently, the only global performance table assessing the contribution of universities to the United Nations' SDGs is the Times Higher Education (THE) Impact Ranking. It can be a catalyst for action, a mechanism for holding universities to account and an opportunity for them to highlight great work that they are already doing. The THE Impact Ranking uses carefully calibrated indicators to provide comprehensive and balanced comparison across four broad areas which are research, stewardship, outreach, and teaching. SDG 4 (Quality Education), for example, includes indicator such as research on early years and lifelong learning education, proportion of graduates with teaching qualification, lifelong learning measures, and proportion of first-generation students (students starting a degree who identify as being the first person in their immediate family to attend university). A high-quality education should be an area where universities thrive. Education, especially multigenerational ones, is a key gateway out of inequalities. Access to inclusive education can also help local people acquire the tools they need to solve world's most pressing problems in addition to improving quality of life (Times Higher Education, 2023).

Each year, more and more universities join the database to demonstrate their commitment to the achievement of the SDGs and show rapid improvement over a period by implementing new policies or providing clearer and more open evidence about their progress. The first edition of THE Impact Ranking 2019 includes 467 universities from 76 countries led by New Zealand's University of Auckland, while Canada's McMaster University and University of British Columbia, also UK's University of Manchester and King's College London complete the top five. In the second edition, University of Auckland still leads among the total of 768 universities from 85 countries that participated. Japan, for the second time, is the most represented nation in the table with 63 institutions, followed by Russia with 47 and Turkey with 37. In 2021, Thailand's Chulalongkorn University became the top institution from an emerging economy at joint 23rd place among 1,118 universities from 94 countries/regions that participated. For the first time, the overall ranking is led by a UK university, University of Manchester. Australia's Western Sydney University led the overall ranking in 2022 and more countries from the UK, Saudi Arabia, Malaysia, New Zealand, and Japan featured their universities in the top 10. In a five-year period, the number of universities participating in the THE Impact Ranking has shown a dramatic increase from 467 universities in 2019 to 1,705 universities in 2023. UK became the most represented nation in the top 100 with 26 institutions, followed by Australia with 16, and Canada with 15. 32 universities from Indonesia listed their institutions in the THE Impact Ranking 2023

in which the top institution is University of Indonesia, ranking at twentieth (Times Higher Education, 2023).

It is undeniable that by providing knowledge of sustainable development and opportunities for innovation, higher education institutions can create aspiring entrepreneurs and prepare them to face uncertainty and changes in the business world (Kimanzi, 2020). Tiemann et al. (2018) emphasize the importance of higher education institutions in explaining how partnerships between universities, research organizations, customers, suppliers, business competitors or consumers have empowered innovative businesses which are either big or small. Although successful entrepreneurs have certain desirable characteristics, education and skills development are essential.

Since early 2017, five universities across the North Atlantic Arctic (University of Greenland, University of the Faroe Island, University of Akureyri, Technical University of Denmark, and College of the Atlantic) have been working together on the project to promote sustainable student entrepreneurship in the Arctic. These universities educate students in multidiscipline ranging from natural/technical to social sciences, and the project has been funded by the Nordic Council of Ministers, the Bank of Greenland Fund, and the Knud Højgaard's Fund (Blaxekjær et al., 2018). The key operational objective in the first year of the project is to train faculty members in Arctic higher education institutions to be able to teach, train, and develop entrepreneurial mindsets and skills among students. The project focused on the development and implementation of sustainable entrepreneurship courses for students, in conjunction with teacher training.

Integrating sustainability principles into entrepreneurship education curricula requires a strategic and comprehensive approach that incorporates both theoretical knowledge and practical application to equip students with the knowledge, skills, and mindset necessary to become responsible and sustainable entrepreneurs. There are some strategies and best practices for effectively integrating sustainability principles into entrepreneurship education including curriculum design, embedding sustainability across courses, experiential learning, guest speakers and industry partnerships, ethical decision making, assessment and evaluation.

Higher education institutions need to develop entrepreneurship curricula that explicitly incorporate sustainability principles, including topics such as social entrepreneurship, environmental sustainability, and ethical business practices. Designing courses that explore the intersection of entrepreneurship and sustainability provides students with a foundational understanding of the concepts and their applications. Entrepreneurship professors can incorporate topics such as sustainable business models, impact measurement, corporate social responsibility, and sustainable supply chain management into the curriculum to ensure comprehensive coverage of sustainability issues. During course meetings, lecturers are encouraged to emphasize experiential learning opportunities such as case studies, simulations, and real-world projects, that allow students to apply sustainability principles in entrepreneurial contexts. They can also inspire students to work on sustainability-focused ventures or projects that address social or environmental challenges, providing hands-on experience and practical skills development.

The University of Faroe Island, for example, developed three types of courses that implicitly contained innovation and entrepreneurship. The first type uses a teaching and learning approach with three elements, namely traditional classroom teaching and dialogue between teacher and students about academic literature and empirical examples, dialogue meetings with stakeholders relevant to the course topics, and students' own communication projects about a course topic communicated to a non-academic audience, in a 50-25-25%

division. The second type of courses projects on transition to a sustainable society and the third type applies an engaged scholarship approach coupled with narrative governance theory in practice by taking students to workshops and conferences with stakeholders and encouraging them to become green change agents in their local communities (Blaxekjær et al., 2018).

Different faculties from different departments or even different universities may foster interdisciplinary collaboration by integrating sustainability principles, case studies, and perspectives from various fields, including business, hospitality, environmental science, social sciences, design, engineering, and law into core entrepreneurship courses, as well as elective courses and specializations. These departments then will be able to offer joint courses or collaborative projects that bring together students and faculty from different disciplines to explore sustainability-focused entrepreneurship opportunities and solutions. Other initiatives that higher education institutions can implement is by inviting guest speakers, entrepreneurs, and industry experts who have successfully integrated sustainability into their businesses to share their experiences and insights with students. It is beneficial for universities to establish partnerships with sustainable businesses, NGOs, and community organizations to provide students with opportunities since it can lead to mentorship, internships, and real-world engagement.

Universities need to provide frameworks for ethical decision-making, emphasizing ethical reasoning, and value-driven entrepreneurship as integral components of sustainability education. Students will be encouraged to have critical reflection on the social, environmental, and ethical implications of entrepreneurial ventures and decisions. In the end, higher education institutions must develop assessment methods that evaluate students' understanding of sustainability principles and their ability to apply them in entrepreneurial contexts. Rubrics, peer evaluations, and project-based assessments can be used to assess students' knowledge, skills, and attitudes related to sustainability and entrepreneurship.

The Abundance Cycle Framework

Entrepreneurs may face difficulties in adapting sustainability to business strategies and tactics for new ventures, although most people believe that supporting sustainable development is vital. The Abundance Cycle canvas as shown in Figure 2, developed by Jay Friedlander, helps companies look at each aspect of their operations, uncover latent value, and spur creativity. The Abundance Cycle framework is tailored to leverage sustainable business models for starting businesses, restructuring existing ones and providing entrepreneurs with means of building economic value simultaneously while meeting the UN SDGs (Blaxekjær et al., 2018). Friedlander (2015) stated that abundant solutions generate a mutually reinforcing cycle where economic, social, and environmental improvements can be achieved together. By offering new ways to identify problems, the pursuit of this Abundance Cycle is leading to innovation and new opportunities.

There are five steps to create abundance according to Friedlander. The first one is understanding your purpose. Ideally, every organization was initiated to address frustration, solve problems, or improve people's lives. The second step is to identify the enterprises' competitive strengths—their core activities that distinguish them from their competitors. The third step is to apply different tactics to the areas of strength to reexamine solutions, innovate, and identify new opportunities. The Abundance Cycle applies the 3P perspective to core activities, namely people, planet, and profit. It seeks specific outcomes with prosperity for all stakeholders. On the people side, entrepreneurs ask questions such as how

to improve the workplace, build community, and solve people issues. On the planet side, entrepreneurs try to figure out how to reduce waste, use waste as a resource, and regenerate natural capital. On the profit side, entrepreneurs think about how to reduce risk, cut costs, and grow sales. Language and perspective are essential in building bridges to achieve step four, which is implementation. Entrepreneurs should be able to communicate with both internal and external stakeholders in a language that resonates with them then select initial projects which are achievable and maximize impact. The final step to create abundance is measure, report, and repeat. Statistics are not strategies. That is why the Abundance Cycle Canvas can be used to chart business courses and establish measures that are meaningful from the perspective of business, environmental, and social.

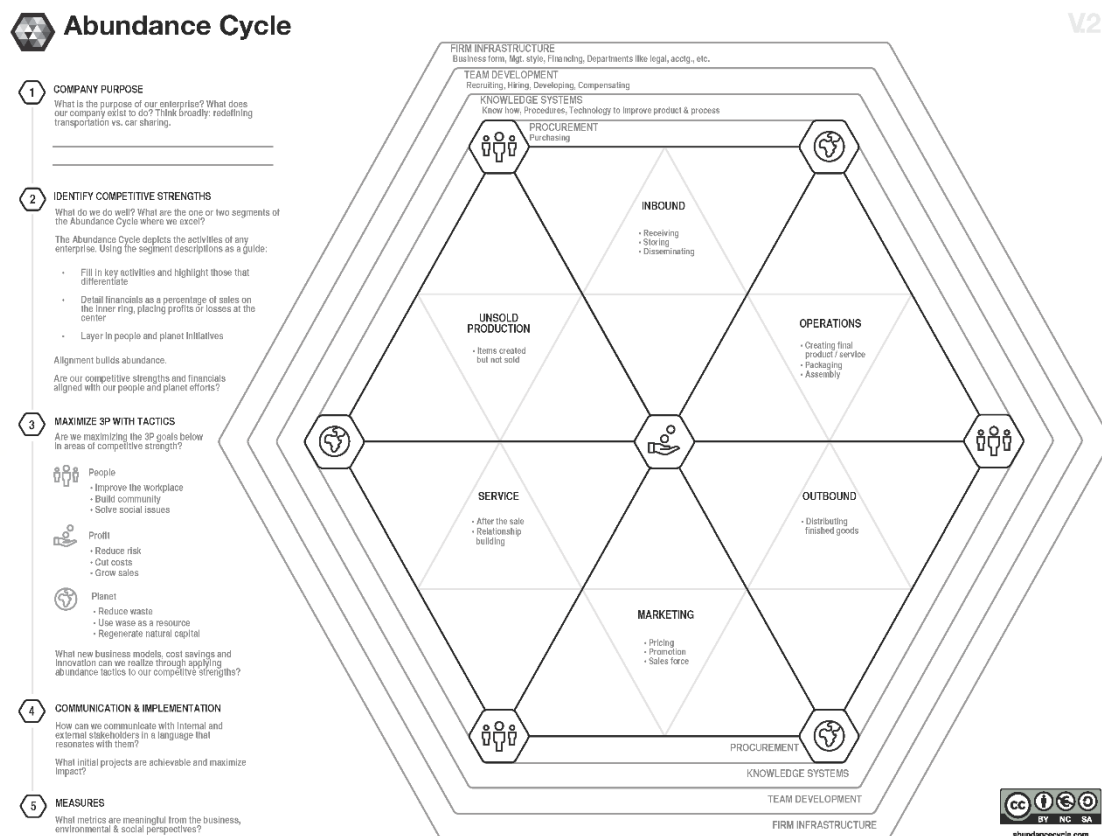


Figure 2. The Abundance Cycle Canvas
 Source: <https://www.abundancecycle.com/>

Flourishing Business Canvas

The common portrayal of entrepreneurs often centers around a focus on monetary gain, growth, and economic objectives. However, this perspective overlooks individuals' capacities and intentions to create opportunities where ecological and societal goals are seamlessly integrated into viable, successful, and ultimately sustainable business models (Lans et al., 2014). The Flourishing Business Canvas, depicted in Figure 2, serves as a tool that offers a shared language within a visually accessible framework. It enables organizational stakeholders to collaboratively design, describe, understand, develop, measure, and communicate a business model that is not only financially sound but also socially beneficial and environmentally generative (Elkington & Upward, 2016). This

canvas proves especially valuable for businesses that define success as achieving profitability while contributing positively to societal and environmental well-being.

Developed based on the traditional Business Model Canvas by Osterwalder & Pigneur (2010), the Flourishing Business Canvas aims to create, deliver, and capture economic value. It consists of key elements, including value proposition, customer segments, channels, revenue streams, key activities, resources, partnerships, and cost structure. However, it goes beyond the traditional approach by emphasizing the exploration and leveraging of market opportunities to create strategically crafted and competitive business models that align with social and environmental objectives. In other words, what sets the Flourishing Business Canvas apart is its emphasis on integrating sustainability principles into every aspect of the business model.



Figure 3. The Flourishing Business Canvas

Source: C Antony Upward / Edward James Consulting Ltd, 2014, all rights reserved

An effective way to introduce sustainable entrepreneurship to aspiring entrepreneurs through EE is by using this canvas to explore sustainable business ideas. EE programs that incorporate the Flourishing Business Canvas provide students with a comprehensive understanding of sustainable business practices. By guiding students through the process of developing business models that prioritize social and environmental responsibility, these programs instill a sense of purpose and values-driven entrepreneurship. Students learn to identify opportunities for positive impact, integrate sustainability into their business strategies, and communicate their vision effectively to stakeholders.

Moreover, the Flourishing Business Canvas serves as a valuable tool for fostering innovation and creativity in entrepreneurship education. The canvas stimulates critical thinking and problem-solving skills because students are encouraged to think holistically about their business ideas and consider the broader implications of their decisions. Students

are challenged to explore innovative solutions to social and environmental challenges while building businesses that are financially sustainable and socially impactful.

CONCLUSIONS

It is no longer evitable to ignore sustainability issues in doing business and focus only on making a profit because that approach to economic growth has consequently undermined people's quality of life and the health of our planet. The UN SDGs represent a shared vision for a better world, promoting inclusivity, environmental stewardship, and social equity. As a universal call to action, the SDGs provide a roadmap for collective efforts to address the most pressing issues facing humanity and build a sustainable future for all. True sustainability requires a more radical, fundamental, and tough transformation. That is why, the role of education is significant to prepare students to become sustainable entrepreneurs who destroy existing conventional production methods, products, market structures and consumption patterns, and replace them with superior environmental and social products and services.

Higher education institutions can act as catalysts for sustainable development by fostering a culture of learning, research, and community engagement that aligns with the principles of the SDGs. Through their comprehensive roles, universities contribute significantly to building a more sustainable and inclusive future. EE is closely linked to the SDGs as it promotes economic growth, social inclusion, environmental sustainability, and innovation. By fostering entrepreneurial skills, knowledge, and attitudes, EE contributes to achieving the SDGs.

The integration of Flourishing Business Canvas in EE programs offers a transformative learning experience that prepares students to become responsible and successful entrepreneurs. Flourishing Business Canvas is a tool that can be used by students and aspiring entrepreneurs who strive to build businesses by implementing a triple bottom line, a sustainability framework that measures a business's success in three key areas: profit (the traditional measure of corporate profit), people (a measure of how socially responsible the organization has been in its operations), and the planet (a measure of how environmentally responsible the business has been).

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