

Raising Awareness of Sustainable Development Goals in Higher Education Institutions

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Abstract

Higher education institutions play a crucial role in advancing sustainable development goals. They bear the responsibility of informing and encouraging all stakeholders, including faculty members, students, and industry partners, to collaborate towards achieving these goals. While many universities are integrating Sustainable Development Goals into their operations and educational programs, there is an increasing need to establish collaborative platforms with private sectors and non-governmental organizations to further champion this agenda. Educating the future workforce is a key responsibility of these institutions, and they should actively raise students' awareness of these goals, enabling them to develop competencies related to sustainability. This study aims to explore how higher education institutions can effectively raise awareness of sustainable development goals. In addition, the research contributes to the literature by presenting a curriculum designed in a Turkish higher

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education institution to foster awareness of sustainable development goals. The findings hold the potential to significantly enrich existing literature on awareness-raising practices and the promotion of sustainability strategies, extending beyond higher education institutions to organizations at large.

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Introduction

The concept of sustainability emerged in the 1970s in response to the escalating environmental challenges driven by industrial and economic growth models (Gillespie, 2018; Purvis et al., 2019). The growing environmental problems, resulting from the prevailing development paradigm in economic models, prompted a global shift toward sustainable development, making it a central theme in social and economic studies worldwide. The United Nations (UN) framework for sustainable development represents a universal call to action, urging all countries, to engage in a global partnership to achieve 17 (Figure.1) Sustainable Development Goals (SDGs) by 2030. Initially rooted in environmental concerns, the scope of SDGs has expanded to address a variety of social issues. The legitimacy and widespread acceptance of SDGs stems from the undeniable reality of visible environmental challenges, including the increasing frequency and severity of natural disasters, the impacts of climate change, and global and national inequalities.



Figure 1. Source: Sustainable Development Goals United Nations

Department of Global Communications (United Nations, 2023).

The increased global access to information has elevated the significance of the SDGs framework compared to its predecessors. Nations worldwide are actively working to enhance awareness of the SDGs, and certain developed countries are reinforcing this commitment through regulatory measures (Suwartha & Berawi, 2019). Estonia, for instance, mandates that aid recipients incorporate public information dissemination into their budget, utilize government-provided logos for humanitarian aid and development, and engage in outreach activities (Republic of Estonia Ministry of Foreign Affairs, 2022). Aid recipient countries are required to showcase the supported activities on their websites, social media, and other communication channels. Furthermore, in line with these efforts, Türkiye, under the Ministry of Development, established a National Sustainable Development Commission to coordinate collaborative activities among all relevant stakeholders to achieve the SDGs (European



Development Agency, Briefing, 2020). A clear indication of the seriousness associated with this initiative is the vision of the Presidency of the Republic of Türkiye to transform all its institutions by these goals by establishing an SDG-based unit (Türkiye ve Sürdürülebilir Kalkınma Amaçları, n.d.).

Given that today's students are destined to occupy various roles within the workforce – spanning employers, employees, managers, and even political leaders – they possess the agency to infuse SDGs into their career trajectories. Therefore, educational institutions, particularly HEIs, play a crucial role in advancing SDGs. While HEIs have been actively involved in pursuing the Millennium Development Goals since 2000 (Chang, 2002), the introduction of the SDGs framework by the UN in 2015 raised the expectations for these institutions. Consequently, HEIs have recognized the urgent need to explore educational methods and policy frameworks to integrate SDGs into their campus operations, research directions, and educational plans, despite the pressing global challenges (Dlouháet et al., 2019; Franco et al., 2019; Lovren et al. 2020; Ramísio et al., 2019). The United Nations' Agenda 21 (1992) underscored the responsibility of educational authorities in promoting established educational methods, developing innovative teaching approaches, and integrating traditional education systems within local communities to implement SDGs under the banner of "Promoting Education, Public Awareness & Training" (Section IV, Chapter 36, 1992).

In the realm of raising awareness, it is essential to explore the dynamics and shared language between the UN and social marketing actors. Social marketing (Robison, 1998) a strategy employed not only by corporations but also by various entities, serves as a powerful tool for promoting environmental awareness, equity, and other societal issues.



While the UN actively utilizes social marketing as a tactic to advance its programs, it's crucial to recognize that this approach extends beyond the UN to encompass a broader spectrum of actors. Social marketing involves not only corporations but also non-governmental organizations, governmental bodies, and other entities committed to influencing positive change through awareness campaigns. (TAP Network, n.d., Sayers, 2006). To comprehend the nuances of this engagement, it is imperative to identify who else participates in social marketing and understand how the UN strategically incorporates it into its initiatives.

As the case higher education *institution* in this study, Abdullah Gül University (AGU) not only imparts knowledge, fosters desire, teaches skills, creates value, facilitates learning, stimulates creativity, and reinforces these goals for its students but also extends these efforts to its faculty and administrative personnel. Collaborative initiatives involving all stakeholders are indispensable for achieving SDGs at an institutional level. The term "holistic nationwide" emphasizes the significance of a comprehensive and nationwide approach. This involves not only addressing sustainability comprehensively within the institution but also extending these practices on a national scale. The intention is to underscore that sustainability efforts should go beyond being holistic or nationwide individually; rather, they should be integrated into a unified strategy that considers both dimensions. While a more detailed discussion on this approach unfolds later in the article, this critical perspective emphasizes the importance of combining a holistic approach with a nationwide scope to address the complex challenges posed by the SDGs.

In some situations, such as during the COVID-19 pandemic, policies may be implemented that require changes in HEI's education. To make



these changes without disrupting education, new curricula are designed, educators are provided with training, and other measures are taken (Kim et al., 2021). In such cases, changes are generally supported and accepted without resistance. The implementation of SDGs requires holistic nationwide changes at every level, including individual, organizational, governmental, and societal. However, changes of this magnitude will inevitably have financial, economic, and cultural impacts on society. Generally, people do not readily accept change and their initial reaction may be resistance due to a lack of awareness.

To ensure that students' extracurricular activities align with the UN SDGs, *the institution* has implemented a comprehensive strategy. This involves integrating SDGs into various aspects of student engagement beyond the traditional classroom setting. For instance, *the institution* actively tracks and encourages students' participation in internships and projects that support small, independent, or green businesses, providing them with practical exposure to sustainability initiatives. Additionally, *the institution* facilitates partnerships with relevant industries and organizations, creating opportunities for students to engage in activities that contribute to the achievement of specific SDGs.

Literature Review

HEIs' Involvement with SDGs

Institutions play a crucial role in implementing SDGs at regional, national, and global levels, aligning with the broader aims of sustainable development, as highlighted in the literature review (Adomßent et al., 2014; Franco et al., 2019; Kioupi & Voulvoulis, 2019; Korhonen-Kurki, 2019; Nhamo & Mjimba, 2019). HEIs, in particular, can contribute significantly to sustainable development, benefiting

individuals, communities, and global society through the provision of quality education.

Scholars emphasize that HEIs aim to empower students to apply acquired knowledge in sustainable development by fostering multicultural, global, and future-oriented perspectives, promoting complex decision-making and behavior, and assisting them in acting accordingly in sophisticated situations (Filho et al., 2019; Mawonde & Togo, 2019). Additionally, HEIs play a role in helping students develop sustainable consumption and production patterns. It is essential to equip students with the ability to respond to uncertain futures (Argento et al., 2020; Kioupi & Voulvoulis, 2019; Mula et al., 2017). Recognition of the need to develop these approaches in future graduate skills is crucial for future employers and agencies (Slocum et al., 2019). The role and status of SDGs in HEIs are discussed in four subsections: raising awareness, operational implementation, educational implementation, and challenges.

Raising Awareness

Raising awareness of the SDGs has become a crucial concern in higher education, as emphasized by the 2030 Agenda for Sustainable Development. Students need to be more conscious of their impact on the world (Manolis & Manoli, 2021). Integrating sustainability into the core of education, research, and extension programs can enhance awareness and foster responsibility towards the SDGs (Ramísio et al., 2019). Training programs not only contribute to raising awareness and promoting the development of SDGs but also have a significant impact on altering students' responses to the SDGs through awareness creation (Skene & Malcolm, 2019; Zamora-Polo et al., 2019). This underscores the significance of integrating SDG-related education into academic curricula to foster a generation of individuals who are well-



informed and committed to sustainable practices. Maharjan et al. (2019) supported Skene and Malcolm's finding, affirming that 67% of students never heard of SDGs before an awareness campaign and their responsiveness to SDGs increased after the awareness was raised.

Raising awareness of the SDGs is vital for global progress, yet it faces substantial challenges. Firstly, such campaigns require significant resources including funding, expertise, and time, which can be particularly demanding for smaller entities or in resource-limited settings. Engaging the public effectively is another major hurdle, as it involves making the SDGs relevant to their daily lives and inspiring action. The global nature of the SDGs also means that messages must be adapted to diverse cultural and linguistic contexts, a task that is essential but often complex. Coordinated efforts across governments, NGOs, the private sector, and civil society are crucial to avoid fragmented and inconsistent messaging, yet achieving this level of coordination is frequently challenging (Mulholland et al., 2017). Additionally, assessing the direct impact of these campaigns on tangible changes like policy shifts or sustainable practices is difficult, complicating the justification and guidance for future efforts. Furthermore, the reliance on digital platforms for these campaigns' risks excluding those without internet access or digital literacy, especially in developing countries (Mulholland et al., 2017). Despite these obstacles, the push for SDG awareness is crucial and necessitates innovative strategies, collaboration, and persistent efforts to surmount these limitations, aiming for a more sustainable and equitable world.

With the examination of universities from 17 countries spread over the five continents revealing that 78% of participants were fully aware of SDGs, the application of SDGs in teaching varied, with only 32% applying them, 40% partly applying them, 11% applying them to a

small extent, and 18% not applying them at all (Filho et al., 2019). Mawonde and Togo (2019) conducted an analysis of sustainability databases, including Scopus, and publishers such as Emerald, Springer, and Elsevier. They found that universities in economically developed countries are taking more substantial actions toward addressing SDGs. However, the study revealed a notable gap, as very few articles included "raising SDGs awareness" as a specific subject. Moreover, the current literature lacks diverse approaches to raising awareness of SDGs among university students (Manolis & Manoli, 2021). Recognizing students as future scholars, government workers, and external stakeholders, integrating SDGs into their work is important (Adomßent et al., 2014). One effective strategy would be embedding SDGs in both formal and informal education, spanning from preschool through higher education (Cebrián et al., 2020; Yuan et al., 2021). Furthermore, given the critical role of universities in implementing SDGs, success in this endeavor is contingent upon raising awareness (Manolis & Manoli, 2021). Additionally, student awareness could act as a catalyst for regime-level changes concerning SDGs, providing a foundation for inspiration and motivation for young scientists in their pursuit of solutions (Korhonen-Kurki et al., 2019).

Operational Implementation

The literature review highlights that HEIs are incorporating SDGs into their overall organizational operations, particularly in areas such as building resilient infrastructure (Goal 9), when feasible or deemed preferable by the institution. However, efforts by HEIs tend to be compartmentalized, primarily focusing on internal operations and research profiling rather than being spread across various aspects of the institution's activities (Filho et al., 2019; Findler et al., 2019). The

decision-making process regarding SDG implementation in HEIs may involve considerations such as contract renewals for energy infrastructure or the preference for innovative, cost-effective, and durable solutions.

In a study of 50 universities, only 13% reported their energy consumption (Filho et al., 2019). The source does not explicitly discuss the interpretation of this statistic, leaving room for varied perspectives. It could indicate a positive trend toward lower energy consumption, or conversely, it might suggest a need for improvement in reporting practices, which should be explored further. Besides, SDG implementation as a top priority demands a multifaceted approach, encompassing technical, scientific, administrative, and political dimensions (Kapitulcinova et al., 2018; Nhamo & Mjimba, 2019). HEIs must navigate a complex landscape that involves integrating sustainability principles into educational, research, and operational domains. The success of such initiatives often hinges on the alignment of institutional policies, government support, and active involvement from various sectors (Filho et al., 2019; Franco et al., 2019; Santos et al., 2020). In the subsequent sections, we will explore the intricate dynamics involved in each dimension of SDG implementation within HEIs, shedding light on the challenges and opportunities that arise in this process.

Educational implementation

While there is a need to foster an interdisciplinary academic culture, limited attention has been paid to shaping curricula or course content within HEIs (Argento et al., 2020). The predominant focus in research often revolves around the operational implementation of SDGs. For instance, Korhonen-Kurki et al. (2019) observed that various SDGs are integrated into multiple degree program descriptions at the University



of Helsinki. Additionally, Aleixo et al. (2018) found that there is a higher inclusion of SDG-related courses in graduate degrees compared to undergraduate degrees in Portugal.

Certain HEIs are making commendable strides by embedding sustainability into specific degree programs (Argento et al., 2020) and incorporating SDGs into their strategic agenda (Franco et al., 2019). In some countries, universities are proactively reorienting, adjusting, and updating their curricula to align with SDGs (Mula et al., 2017; Nhamo & Mjimba, 2019). Innovative approaches adopted by U.S. universities include Carnegie Mellon University's interactive exhibit, where students shared reflections on SDGs, public webinars by Georgia Tech, and initiatives like community engagement programs by Rice and the University of California (Alaoui, 2021). The University of Tennessee, Knoxville, took a systematic approach by mapping and cataloging courses related to SDGs. Many universities have also established student/campus chapters of the United Nations Association of the USA (Alaoui, 2021)

Despite many universities considering the integration of SDGs into their education programs, according to Korhonen-Kurki et al. (2019) universities in the Scandinavian region, particularly those in Finland, place particular emphasis on SDG 4 (Quality Education), SDG 17 (Partnerships for the Goals), and SDG 3 (Good Health and Well-being) in various HEI initiatives. Notably, SDG 1 (No Poverty), SDG 6 (Clean Water and Sanitation), and SDG 5 (Gender Equality) receive less priority at Helsinki University. This discrepancy in emphasis among the SDGs in the Scandinavian region presents a challenge that requires the exploration of potential solutions. Moreover, for a HEI, prioritizing the integration of SDG 4, SDG 17, SDG 3, and SDG 14 could be more practical and applicable.

Filho et al. (2019) strongly advocate for the direct integration of global goals, particularly the SDGs, into university curricula. They argue that academic programs across all disciplines should empower learners to critically engage with sustainability issues, fostering not just disciplinary understanding but also shaping them as informed, responsible citizens. This perspective highlights the dual role of education in developing professional expertise and societal awareness. The authors emphasize the growing need to align curricula in HEIs with cutting-edge research, advocating for the incorporation of innovative content, learning methodologies, and transformative educational approaches. This alignment is seen as crucial in keeping educational programs relevant and effective in addressing contemporary challenges. Furthermore, Filho et al. (2019) stress the importance of developing applied research that is specifically focused on the SDGs. Such research would not only contribute to academic knowledge but also have practical implications for addressing global sustainability challenges.

A significant aspect of their recommendations is the active engagement of the student body in committing to and acting in support of the SDGs. This involves not just educating students about these goals but also enabling and encouraging them to act, both within their academic pursuits and in broader societal contexts. These recommendations from Filho et al. provide a comprehensive framework for HEIs to make substantial strides towards sustainability. By aligning education with research, innovating in content and methods, and engaging students actively, universities can play a pivotal role in advancing the global agenda for sustainable development.

Challenges to Enacting SDGs

Several authors have identified core challenges that HEIs face when implementing SDGs. The most commonly mentioned challenges include the capacity and skills of academics, motivation, ethical decisions, politics, bureaucratic obligations, policies, cognitions, faculty structures, and social, economic, and environmental factors. In their 2020 study, Lovren and colleagues identified further obstacles in integrating the SDGs into educational curricula. They highlighted the lack of time as a significant barrier, indicating that educators and institutions often struggle to find sufficient time to effectively incorporate SDG-related topics into already packed curricula. Additionally, the absence of comprehensive institutional strategies was noted as a critical issue. Without clear, overarching strategies and guidance, schools and universities may find it challenging to systematically embed the SDGs into their teaching and learning frameworks. A key hurdle is the level of students' awareness and understanding of sustainability issues (Lovren et al., 2020). If students are not adequately aware or informed about sustainability and the SDGs, it becomes more difficult to engage them in these topics and foster a deeper understanding and commitment to these global goals. These challenges underscore the need for more concerted efforts and resource allocation to effectively integrate the SDGs into educational settings.

The biggest gap in the university curricula is the ethical foundation of sustainability which includes human rights, dignity, gender issues, poverty reduction, and climate change mitigation (Lovren et al., 2020). Regarding ethical issues, the integration of ethics and responsible management into management education and the curriculum of HEIs has been suggested (Avelar et al., 2019; Kapitulčinová et al., 2018).

Addressing this important subject, Dlouhá et al. (2019) proposed that sustainability competencies in HEIs should encompass normative knowledge and a personal dimension, including values, emotions, and motivation.

Furthermore, Lovren et al. (2020) emphasized the importance of a holistic approach to integrating SDGs into educational curricula, advocating for this integration at both the curriculum and institutional/organizational levels. They argued that such an approach would ensure a comprehensive and effective implementation of the SDGs, promoting a deeper understanding and commitment among students. However, the realization of this holistic integration is not always evident in practice, as highlighted by Kioupi and Voulvoulis (2019). They noted that, despite the potential for universities to adopt such an all-encompassing approach, the actual implementation often falls short. This discrepancy can be attributed to various factors, including institutional inertia, lack of resources, or inadequate prioritization of sustainability goals within the academic framework.

Including SDGs, in course weekly plans can enhance and extend human capital, boost engagement in activities, and guide students toward sustainability. This integration can heighten students' awareness, encouraging them to integrate SDGs into their assignments and feel prepared to pursue internships. By fostering multidisciplinary studies and research, promoting innovation, and establishing connections with human rights, students become more inclined to adopt responsible practices in utilizing natural resources and contributing to sustainable architecture. Achieving the incorporation of SDGs into courses requires support from instructors and departmental policies, facilitating the immersion of sustainability



principles throughout teaching methods and the learning environment.

For the integration of SDGs into HEIs to meet diverse requirements (Nhamo & Mjimba, 2019) and advocacy, it is crucial to establish and deploy multidisciplinary research teams, create sustainability centers, and develop interdisciplinary Master's programs focused on sustainability to facilitate the integration of sustainability principles into HEIs (Korhonen-Kurki et al., 2019). It is also important to adopt innovative educational strategies in HEIs to enhance students' critical thinking skills, especially in addressing societal problems (Adom̂sent et al., 2014). They recommend incorporating methods like role plays, case studies, problem-based learning, and simulations into curricula. These interactive and experiential learning techniques are particularly effective in engaging students more deeply with real-world issues.

In the context of various teaching styles, including self-inquiry-based learning, group-based learning, and active learning when delivering SDG-related or SDG-focused courses, it is imperative to analyze and implement these diverse approaches. Furthermore, seven principles for developing an Institutional Sustainable Strategy for HEIs have been identified. These principles include adopting a mixed bottom-up and top-down management model, ensuring the across-the-board integration of all sustainability policies, implementing specific programs focused on the efficient use of resources, maintaining continuous monitoring and communication, integrating collaborative networks, demonstrating commitment to stakeholders, and institutionalizing sustainable policies (Ramísio et al., 2019).

Methodology

This study employs a comprehensive methodology comprising an in-depth literature review and the presentation of a meticulously crafted curriculum aimed at enhancing awareness of SDGs within a public university setting. A pronounced emphasis is placed on elucidating the intricate process underpinning the curriculum's development, while concurrently delving into the underlying rationale that informed the chosen approach.

Institutional Background

The *institution* AGU is a state university located in the Anatolian Region of Türkiye, one of the first third-generation state universities that aims to expand the functional areas from purely conventional study and research to entrepreneurship and cooperation. The university currently has five schools, namely the School of Engineering, Architecture, Life and Natural Sciences, Managerial Sciences, and Humanities and Social Sciences, and offers various undergraduate and graduate degrees. Most of the academic personnel hold Ph.D. degrees from prestigious international schools. Those who do not possess international degrees have considerable international experience as post-doctoral fellows elsewhere. *The institution* is a strong advocate of SDGs and has been making serious attempts to raise awareness about SDGs on campus and implement them in every field (Bengu et al., 2020). The university has been ranked in the Times Higher Education UN SDGs for three consecutive years in the 101-200 tier. In the recent report, the university obtained its best scores in the following SDGs: “1-No Poverty (40th in the world)”, “11-Sustainable Cities and Communities (45th)”, “13-Climate Action (54th)”, “7-Affordable and Clean Energy (67th)”, and “17-Partnerships for the Goals” (79th) (AGU, n.d.a). Departments are also designing SDG-

specific activities for communities. For example, in 2021, the School of Architecture organized a workshop on SDGs for Children in which children between the ages of 7-12 participated. The university also recently launched a new program called the Public Seminar Series, where faculty members lead seminars every Wednesday on different subjects such as responsible production and consumption, urban life inequality, and so on. (AGU, n.d.a).

Curriculum Design Framework

The innovative 3Dimensional curriculum (referred to as 3dC) was created to develop youth who can contribute to society and shape the future of their communities by increasing their awareness of the seventeen fundamental goals established by the United Nations. 3dC comprises three paths: Personal and Professional Development, Globe-Local Challenges (Glocal), and Specialization Studies (Bengu et al., 2020). The Personal and Professional Development path aims to promote the personal, professional, and social growth of students. The Glocal Challenges path aims to raise awareness and sensitivity towards fundamental issues at the global, national, and local scales and develop sustainable solutions for assigned problems. The Specialization Studies path aims to equip students with skills and knowledge that align with the demands of the job market.

In 2016, the Global Problems & Responsibilities Courses (referred to as GLB Courses) emerged as a unique outcome of the Glocal Challenges path. Globe-Local (Glocal) Challenges Path which is the second dimension, offers courses that address glocal issues aligned with the UN's SDGs. The main objective of these sustainability-related courses is to increase awareness and sensitivity to the seventeen fundamental agendas developed by the UN (AGU, n.d.b.). These courses are an excellent example of integrating SDGs vertically.



Global competence is the ultimate goal of this curriculum course (AGU, n.d.b.). It includes developing mindsets such as valuing diverse perspectives, empathy, and a commitment to improving the world. It also involves gaining knowledge of world conditions, current events, and cultures (Tichnor-Wagner, 2019). Additionally, the courses in this curriculum focus on building skills like intercultural communication, cooperative teamwork in diverse groups, and acting on global issues (Tichnor-Wagner, 2019). The aim is to equip individuals with the necessary tools to thrive in a diverse and interconnected world, benefiting their life, work, and citizenship.

Curriculum Development

The university integrates SDGs into the curriculum using both vertical and horizontal integration. The GLB Courses are an example of vertical integration. Horizontal integration is encouraged in departments to interweave sustainability into their specialization courses. As previously mentioned, the GLB Courses have been using different pedagogical approaches to facilitate student-centered and future-oriented learning, such as collaboration, discussion, feedback, and reflection, explicit, guided, experiential, and independent learning (AGU, n.d.b.). These modes necessitate distinct interactions between students, teachers, and the learning environment, with implications for curriculum, pedagogy, lesson planning, and space design. However, instructors may not always possess the necessary competencies. Although some teachers adopt new curriculum materials or approaches, their implementation may remain shallow due to their unchanged deep-seated beliefs (Heng & Song, 2020).

The GLB courses included in the GLB Curriculum aim to create an interdisciplinary class environment where students from different majors can take courses together. GLB 101 AGU Ways, GLB 102



Innovation and Entrepreneurship, GLB 201 Food and Health, GLB 202 Immigration and Population, and GLB 301 Sustainability courses are continued in the fall and spring semesters with the valuable contributions of many lecturers (AGU, n.d.b.).

Need Assessment

Establishment of a Committee. In 2021, the establishment of an interdisciplinary GLB Curriculum Committee was an essential outcome of the evaluation of these courses. The committee consisted of four faculty members (Urban Planning, Nanotechnology Engineering, Sociology, and Educational Science) and one research assistant.

The GLB Courses Committee is responsible for overseeing these courses with the following objectives: a) Actively engaging students with the UN agenda, b) Encouraging students to develop tangible solutions for sustainability issues, c) Encouraging teamwork and a transdisciplinary approach, d) Developing 21st-century competencies such as communication, leadership, teamwork, self-learning, motivation, time management, negotiation, decision-making, responsibility, empathy, flexibility, and consistency, e) Creating an interdisciplinary classroom environment that integrates students' disciplinary knowledge with a curious, responsible, creative, passionate, and entrepreneurial mindset, and f) Providing orientation to faculty members from multidisciplinary fields to become part of the GLB team of instructors.

To help instructors develop the necessary knowledge, skills, and mindsets to lead these courses, the committee: a) coordinates a week-long orientation for the team of instructors before each semester, b) provides instructors with a handbook to adapt to the instructional



strategies, and c) designs a rubric to standardize assessments. Since 2016, the committee and a team of instructors have collaborated on each of these items and created handbook(s) to provide support for instructors.

New Design. The interdisciplinary class environment of GLB courses will remain unchanged. However, based on student feedback, the course design has been modified in the following manner: GLB 1XX courses are offered as two continuous courses in the fall and spring semesters and designed as orientation courses, where each week, one of the SDGs is introduced to students without going into too much detail. They are required for all majors in their first year. GLB 2XX courses are designed by a team of instructors that focus on the SDGs in line with their fields of study or interests. This allows students to learn about the chosen SDG in greater detail. GLB 3XX course is brand new and designed to provide students with the opportunity to work on SDG-focused community projects with an interdisciplinary and collaborative approach, aimed at finding solutions to local and global problems. At this stage, students are expected to work closely with NGOs. Both GLB 2XX and 3XX become elective courses for the second and third years. Table 1. shows sample designs and topics for the 2021-2022 Academic Term Fall Semester and the 2022-2023 Academic Term Spring Semester.



Table 1.

Sample syllabus design and topics

	GLB 101	GLB 102	GLB 2XX 1st semester	GLB 2XX 2nd semester	GLB 3XX	
Topics	SDG 1-7	SDG 8- 17	SDG 3- 11- 12	SDG 3- 6- 7- 9- 10- 11	Glocal projects	level
number of students	600	534	550	435	500	
Number of sections & instructors	16	17	12	11	1 municipality, 10 NGOs, 15 instructors, 15 student clubs	
Number of SDG- related guest speakers	3	3	5	5	5	
Pedagogical approaches	Learner-centered, active learning, and transformative learning. Simple team tasks		Learner-centered, problem- based learning and team- based learning		Learner-centered, project-based learning, problem- based and transformative learning	
Video Communication tool	Zoom*					
Course management system	CANVAS*					

*As of 2013, the institution started using MS Teams as part of the institutional agreement, and no difference was observed in terms of presenting the content

Creation of Supportive Documents. Additionally, a comprehensive handbook for instructors and an information pack for students have been designed to ensure consistency, efficiency, effective communication, and accountability. This is aimed at providing both students and instructors with a clear understanding of the curriculum's objectives, goals, and teaching strategies.

Discussion

In the face of global challenges like climate change, nuclear threats, inequalities, mass migrations, and the erosion of democracies, it's recognized that HEIs need to play a crucial role in advancing SDGs. This aligns with existing literature that supports the importance of integrating SDG-related education into academic curricula (Skene & Malcolm, 2019). Educational systems and institutions must undergo a significant transformation to equip the next generation with the tools to effectively tackle these issues. Our study further emphasizes the need for innovative strategies and collaboration.

Universities worldwide are working to incorporate SDGs into their operational and educational frameworks. Our study aligns with the literature in highlighting the compartmentalized nature of SDG implementation in HEIs (Filho et al., 2019). However, to drive meaningful change, collaborations with governmental bodies, management, and administrations are crucial. A more interdisciplinary academic culture is needed (Aleixo et al., 2018; Korhonen-Kurki et al., 2019) This can enhance the potential to implement SDGs and instigate vital political reforms.

The literature suggests the integration of ethics into management education. Thus, while infusing SDGs into curricula, it is essential to underscore the "ethical foundation of sustainability" (Avelar et al., 2019; Lovren et al., 2020). This includes aspects like human rights, dignity, gender equality, poverty reduction, and climate change mitigation, to bridge any existing gaps. To effectively promote and achieve SDG-related goals, HEIs need strong support from governmental bodies and administrative entities. These supports should be forward-looking and consider potential changes or



improvements in political systems with an awareness of potential future political reforms.

The cultivation of sustainability competencies becomes crucial in building capacities that empower individuals to critically assess prevailing values, policies, and practices (Vareda, 2020). This not only enables students to make informed decisions but also emboldens them to initiate transformative actions. These competencies also serve as a wellspring of inspiration, motivating students to emerge as proactive citizens adept at participating in the collective endeavor of forging a sustainable future. Armed with these refined abilities, students are prepared to recalibrate their actions with due consideration for long-term sustainability. Given that today's students are destined to occupy various roles within the workforce they possess the agency to infuse SDGs into their career trajectories.

The significance of fostering awareness regarding SDGs cannot be overstated; this imperative applies universally to students, faculty, communities, and institutions alike. Grounded in existing literature, the foundational step for HEIs lies in heightening students' consciousness regarding SDGs. While the integration of SDGs into daily practices may encounter specific challenges in developing nations due to various obstacles, including political instabilities, cultural and social factors, and infrastructure challenges, the strategic promotion of awareness within the existing curriculum proves to be a pragmatic approach. Aligned with innovative trends in university curricula that often rely on vertical, horizontal, and/or network-based structures, this approach aims to mitigate challenges efficiently without necessitating additional budget allocation. Our study contributes to the existing literature by providing a nuanced understanding of SDG implementation in HEIs. The identified



Suklun & Bengu (2024). Raising awareness of SDGs in higher education institutions.

variations and challenges underscore the complexity of implementing SDGs, offering valuable insights for future research, policy, and practice.

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