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Article

Establishing the ESD and GCEd system in higher education: Analyzing the holistic approach of Yonsei University in South Korea

Jae Eun Shin^{1,2}, Eun Kyoung Rhee², Shinki An^{2,3}, Younah Kang^{2,4}, Keeheon Lee^{2,4}, In Han Song^{2,5,*}

¹Center for International Studies, Graduate School of International Studies, Yonsei University, Seoul, Republic of Korea

²Institute for Global Engagement & Empowerment, Yonsei University, Seoul, Republic of Korea

³Department of Medical Education, Yonsei University College of Medicine, Seoul, Republic of Korea

⁴Humanities, Arts, and Social Sciences (HASS) Division, Underwood International College, Yonsei University, Seoul, Republic of Korea

⁵School of Social Welfare, Yonsei University, Seoul, Republic of Korea

Abstracts

This study assesses the Global Citizenship Education (GCEd) and Education for Sustainable Development (ESD) initiatives at the Yonsei Institute of Global Engagement and Empowerment (IGEE). The objective is to identify strengths and areas for improvement in promoting ESD and GCEd principles and contributing to the Sustainable Development Goals (SDGs). This research employs a comprehensive analysis framework to evaluate Yonsei IGEE's initiatives, including the "Understanding Sustainable Development with Ban Ki-moon" lectures, "Social Engagement Fund (SEF)" research program, "SDG Initiative," and "Global Engagement and Empowerment Forum (GEEF)." It considers objectives, environmental focus, pedagogical strategies, topic coverage, learning dimensions, and outcome measurement. Yonsei IGEE initiatives demonstrate strengths in terms of clear objectives, environmental focus, and pedagogical strategies. They complement each other, fostering synergy in promoting ESD and GCEd principles. The lecture series offers a holistic view of SDG issues, whereas SEF empowers students to address challenges practically. The SDG Initiative guides Yonsei's research community, and GEEF disseminates SDG knowledge and fosters collaboration. This study contributes originality in two aspects. First, it presents an innovative evaluation framework specifically designed to assess the diverse GCEd and ESD programs at Yonsei IGEE. This framework serves as a valuable tool for future evaluations of similar initiatives in higher education institutions. Second, the data and contents analyzed in this research, drawn from Yonsei IGEE's programs, are novel and provide unique insights into the efficacy of the GCEd and ESD efforts.

Keywords

Education for Sustainable Development, Global Citizenship Education, Higher Education, Sustainable Development Goals, Sustainability, Impact Ranking

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*Corresponding author: In Han Song, isong@yonsei.ac.kr

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1. Introduction

Since the adoption of sustainable development goals (SDGs), education for sustainable development (ESD) and global citizenship education (GCEd) have gained increasing importance (UNESCO, 2016; UNESCO, 2020). These two concepts, while subject to different interpretations and debates, serve as significant pillars of SDG 4 and major catalysts for addressing global challenges and achieving the 17 SDGs (Khoo & Jorgensen, 2021). UNESCO's global action program emphasizes the development and dissemination of good practices, participatory programs, cultural aspects, and the promotion of interdisciplinary and multistakeholder approaches to ensure ESD and GCEd at all levels and in all forms of education (UNESCO, 2016).

The Korean government has actively pursued the promotion of ESD and GCEd in alignment with the global initiative. In 2018, the government established the National Sustainable Development Goals (K-SDGs), and the 4th Sustainable Development Basic Plan for Korea (2021-2040) involved a thorough process that included national surveys, expert opinions, forums, consultations with related ministries, and deliberations by committees (UNESCO Korea, 2022). The formulation and improvement of K-SDGs are highly important, as they actively reflect the SDGs within the Korean context and aim to implement them (UNESCO Korea, 2022). Additionally, the Korean government has taken a step further by incorporating education for environmental sustainability and democratic citizenship into the revised national curriculum, with implementation starting in the 2025 academic year (UNESCO Korea, 2022).

Despite these efforts, attention to ESD and the GCEd in higher education remains insufficient. Today, universities face the challenge of providing quality education that prepares students for a world filled with game-changing technologies and extreme uncertainties. At the same time, higher education must evolve to handle volatility, uncertainty, complexity, and ambiguity (VUCA), which reflects the unstable and uncertain nature of reality (Stewart *et al.*, 2016). Higher education is no longer about the mere transmission of information but should focus on transforming learners to embrace unsolved challenges and nurturing critical competencies for a sustainable future. In this context, the role of higher education institutions (HEIs) in pursuing ESD and GCEd is emphasized, as indicated by SDG 4.3. However, most practical initiatives have focused on K-12 education, and there is a need

for enhanced implementation and discussion of ESD and GCEd in higher education settings, with greater attention from the government.

Yonsei University, one of the esteemed universities in the Republic of Korea, has emerged as a leading HEI striving for ESD and GCEd. Yonsei has been seeking innovative approaches to higher education that promote sustainability and progress for global citizens and communities. Such efforts have led Yonsei to be ranked 14th in the 2023 THE Impact Rankings for Sustainability, the highest ranking among universities in Korea. Yonsei's Institute of Global Engagement and Empowerment (IGEE), established in 2017 with the 8th Secretary-General of the United Nations, Ban Ki-moon, has been at the forefront of the SDG initiatives of Yonsei. The Institute has been actively promoting ESD and GCEd through various activities, and this paper aims to analyze and introduce Yonsei IGEE's holistic approach to implementing ESD and GCEd.

To conduct this study, we reviewed the literature on ESD and GCEd and developed a framework for case study analysis. Yonsei IGEE's initiatives, including lectures, projects, and international conferences, were analyzed via this framework. The findings of the case analysis provide valuable insights for further improving the programs and can serve as a guideline for developing similar programs in other HEIs.

The paper is structured as follows: the next section reviews the literature on ESD and GCEd to understand their notions, objectives, and key components. In this study, rather than making a clear distinction between Education for Sustainable Development (ESD) and Global Citizenship Education (GCEd), we assume the existence of common educational orientations found in both concepts. Therefore, we conducted a review of previous studies focusing on the key components and expected outcomes of GCEd and ESD. On the basis of this review, section 3 establishes a framework for case analysis. Section 4 introduces and analyzes four different programs carried out by Yonsei IGEE, employing the developed framework. The results of the case analysis are discussed to draw meaningful implications for the further enhancement of the programs. Finally, the paper concludes with a summary of the key findings and recommendations.

2. Literature Review: Understanding ESD and GCEd

Education plays a central role in the 2030 Agenda for Sus-

tainable Development, extending beyond its standalone goal (SDG 4) and contributing to the success of all SDGs. In addition to SDG 4, education is recognized as essential for targets related to health, growth and employment; sustainable consumption and production; and climate change (UNESCO, 2016). UNESCO (2016) emphasized that education can accelerate progress toward achieving all the SDGs, making it a crucial component of strategies for each goal. Within SDG 4, Target 4.7 specifically calls for education for sustainable development and the promotion of global citizenship, whereas Target 4.3 addresses widening access to higher education. The aim of ESD and GCEd is to equip learners, particularly youth, with the necessary knowledge, skills, values, and attitudes to lead productive lives, make informed decisions, and actively address global challenges at both the local and global levels (UNESCO, 2016).

Efforts have been made to identify gaps and commonalities between ESD and GCEd, recognizing their potential to work synergistically in achieving alternative futures (Khoo & Jorgensen, 2021). One perspective views GCEd as a component of ESD, as it already encompasses education on cultural diversity (Oh *et al.*, 2016). Conversely, an alternative perspective suggests that sustainable development is a primary focus within the GCEd (Hwang *et al.*, 2017). Similarities and differences between the two have also been observed in relation to neighboring fields of education, such as civic education, international education, and intercultural education (Oh *et al.*, 2016; UNESCO Asia-Pacific Institute for International Education, 2017; Hwang *et al.*, 2017). According to a recent report from the Korea Institute for Curriculum and Evaluation (KICE), 66% of 497 middle and high school teachers perceive ESD as broader and inclusive of GCEd, whereas 19% consider ESD as a thread within diverse GCEd approaches. Additionally, 7.2% view ESD and GCEd as related but distinct, and 6.2% believe that they are nearly the same or similar (KICE, 2021). The report also highlights expert opinions from focus group interviews, indicating recognition of the conceptual difference between ESD, which emphasizes sustainable development, and GCEd, which focuses on citizenship. However, the experts emphasized the importance of understanding the differences in approaches used to achieve both concepts rather than solely distinguishing between them. UNESCO itself identifies ESD and GCEd as two pillars of education rather than attempting strict categorization. Therefore, it is crucial to correctly comprehend the concepts and approaches of both ESD and GCEd, as

this understanding can lead to the most efficient and effective outcomes.

ESD, as defined by UNESCO's Roadmap for Implementing the Global Action Programme on Education for Sustainable Development, aims to empower learners to make informed decisions and take responsible action for environmental integrity, economic viability, and a just society, both for present and future generations, while respecting cultural diversity (2014a). It emphasizes lifelong learning and requires a holistic and transformative approach to education, encompassing learning content and outcomes, pedagogy, and the learning environment (UNESCO, 2014a; 2014b). The recently announced "ESD for 2030" further specifies five priority areas for ESD: advancing ESD policy at the global, regional, national, and local levels; transforming learning environments through a whole-institution approach; building capacities for educators; empowering and mobilizing youth; and accelerating local-level action (UNESCO, 2020).

The topics and themes of ESD can be as broad as possible, as ESD is expected to raise awareness of the 17 SDGs in educational settings, promoting critical and contextualized understanding of the goals (UNESCO, 2020). UNESCO's report "Educational Content up close" (2019) identified the major themes of ESD as environmental sustainability, sustainable production and consumption, and human survival and well-being. It is also acknowledged that ESD should be designed to address various sustainability issues, not only focusing on environmental sustainability but also encompassing social and economic challenges that are interconnected with all SDGs (Remington-Doucette *et al.*, 2013; Chiba *et al.*, 2021).

Moreover, the GCEd aims to cultivate values, attitudes, and behaviors that support responsible global citizenship (UNESCO, 2014b). Global citizens are considered responsible and ethical individuals who actively engage with global issues related to human well-being, the environment, fundamental rights, and dignity, transcending ethnic and national boundaries (Pike, 2000). Oxfam defines a globally aware citizen as someone who possesses knowledge about the world, understands their role as a global citizen, respects and values diversity, comprehends how the world functions, is passionately committed to social justice, actively engages in communities at various levels, collaborates with others to create a more equitable and sustainable world, and takes responsibility for their actions (Oxfam, 2015, p.5).

According to Oxfam in the United Kingdom, the goal of

global citizenship education is to provide students with the necessary tools to think critically about and address diverse global issues within the school environment. They propose five areas to be covered in global citizenship education: social justice and equality, diversity, globalization and interdependence, sustainable development, and peace and conflict (Byun, 2010; Sung, 2010). UNESCO identifies key areas of GCED, including peace and human rights, diversity, justice, democracy, care, nondiscrimination, and tolerance (UNESCO, 2013).

While ESD and GCED have distinct primary objectives and educational areas, they share common expected outcomes across three dimensions of learning: cognitive, social and emotional, and behavioral. For ESD, the expected outcomes include developing an understanding of sustainability challenges (cognitive), raising awareness of their relevance to the surrounding realities (cognitive + social/emotional), and fostering positive change (behavioral) (UNESCO, 2020). Similarly, GCED is grounded in three learning domains: cognitive, socioemotional, and behavioral. Through promoting values of collaboration, nondiscrimination, diversity, cultural understanding, peace, and solidarity for humanity, GCED aims to equip learners with the knowledge and thinking skills necessary to better comprehend the world and its complexities (cognitive), understand and embrace values, attitudes, and social skills that facilitate affective, psychosocial, and physical development and enable collaboration with others (socioemotional), and engage in practical applications, performance, and active involvement (behavioral) (UNESCO, n.d.). Both ESD and GCED emphasize a holistic approach and lifelong learning to achieve their desired outcomes in the three learning dimensions (UNESCO, 2016; 2020). The ESD recognizes the importance of providing learners with opportunities to critically analyze and engage in dialog about complex social, economic, and environmental issues, with the belief that this process will benefit society as a whole (Ferguson & Rooft, 2020). In the case of GCED, there is an emphasis on promoting participatory and student-led approaches in teaching, empowering learners to actively participate in their own (Hunt, 2017).

Moreover, both ESD and GCED acknowledge the importance of integrating theory and practice in their curricula. ESD advocates a transdisciplinary approach that combines various academic disciplines and encourages participatory teaching methods, such as case study analysis, group discussions, and interactive exercises (Chiba *et al.*, 2021). Ad-

ditionally, it highlights the importance of making the content relevant to students' majors and interests (Chiba *et al.*, 2021). Similarly, GCED tends to have a theory-oriented curriculum that focuses on developing multicultural competence, addressing social equity, and employing equity pedagogy. It is often implemented through formal educational structures (Chiba *et al.*, 2021).

In terms of scale, both ESD and GCED can be more effective when the content is connected to smaller scales, such as communities and regions. This approach enables students to better understand and relate to principles by connecting them with their personal experiences (Brody & Ryu, 2006). By engaging students in localized contexts, ESD and GCED can foster a deeper understanding and meaningful engagement with the concepts and values they promote.

Role of higher education

The role of higher education institutions (HEIs) in promoting global citizenship education (GCED) and education for sustainable development (ESD) has been relatively overlooked compared with the emphasis on GCED in K-12 education. Existing research predominantly focuses on the GCED in K-12 education, particularly in terms of teachers' training and pedagogical skills (Lewis Chiu *et al.*, 2017; Reid *et al.*, 2019; Tomlinson *et al.*, 2003; Mundy and Manion, 2008). However, it is important to recognize the significant potential of HEIs to contribute to the achievement of sustainable development goals (SDGs) through their engagement with GCED and ESD.

UNESCO acknowledges higher education as a cornerstone for the SDGs and emphasizes the role of HEIs in promoting sustainable development (UNESCO, 2017). HEIs have a social responsibility to foster competencies for sustainable development among their students and within their communities (Franco *et al.*, 2019). By incorporating sustainability into teaching and learning, HEIs can provide learners with opportunities to think critically about complex social, economic, and environmental issues, benefiting society as a whole (Leal Filho *et al.*, 2019; Décamps *et al.*, 2017).

To advance GCED and ESD, HEIs should integrate these principles into their curricula, pedagogical approaches, and campus practices. By integrating the GCED and ESD across various disciplines and academic programs, HEIs can cultivate global citizens who possess the knowledge, skills, and values necessary to address complex global challenges

(UNESCO, 2016; Lewis Chiu *et al.*, 2017). HEIs can serve as platforms for critical thinking, dialog, and the engagement of diverse perspectives, promoting values such as collaboration, cultural understanding, peace, and solidarity (Ramaswamy *et al.*, 2021). Additionally, HEIs can provide experiential learning opportunities for students to engage with communities of different backgrounds, fostering a deeper understanding of sustainable development and internationalization (Ramaswamy *et al.*, 2021).

Fully realizing the potential of HEIs in promoting the GCEd and ESD requires increased attention and investment in research, curriculum development, and faculty development specifically tailored to higher education settings. This involves exploring innovative pedagogies, promoting interdisciplinary approaches, and integrating sustainability topics into various disciplines (Ferguson & Roofoe, 2020; Vaughter, 2018). HEIs can also act as living laboratories for sustainability by implementing sustainable practices on campuses and engaging with local communities to address real-world sustainability challenges (Leal Filho *et al.*, 2019).

3. Framework Building

The literature review has provided valuable insights into the concepts of Education for Sustainable Development (ESD) and Global Citizenship Education (GCEd), as well as their relationships, understanding, expected outcomes, and role as higher education institutions. Building upon this foundation, a framework has been developed to guide the implementation and evaluation of ESD and GCEd programs. This framework incorporates key criteria that are essential for the effective integration of ESD and GCEd in educational settings.

The framework consists of several criteria that serve as guiding principles for policy development, objective setting, environmental considerations, pedagogical approaches, thematic focus, learning content structure, and expected outcomes. While the policy criterion is shared by both ESD and GCEd, the other criteria are specifically tailored to address the unique aspects of each approach. The framework aims to provide a comprehensive and systematic approach to ensure that ESD and GCEd are implemented in a holistic and transformative manner.

To illustrate the framework and its components, Table 1 is presented below, outlining the criteria and their corresponding elements for ESD and GCEd. While the framework was developed with the purpose of analyzing Yonei's specific

ESD and GCEd initiatives, it offers a versatile and adaptable structure that can be utilized in different contexts. By utilizing this framework, educational institutions and policymakers can establish clear objectives and policies, create conducive learning environments, adopt appropriate pedagogical strategies, identify relevant themes and topics, structure the learning content effectively, and define the expected outcomes for learners. This framework will facilitate the alignment of ESD and GCEd programs with the broader goals of sustainable development and global citizenship, enabling learners to develop the necessary knowledge, skills, values, and attitudes to address complex global challenges.

4. Case Analyses: Yonsei IGEE's ESD and GCEd Initiatives

Yonsei University, spearheaded by the Institute of Global Engagement and Empowerment (IGEE), has developed a range of initiatives focused on ESD and Global Citizenship Education (GCEd). These initiatives embody a comprehensive approach that extends beyond student education to encompass researchers and professors at Yonsei University. The university recognizes the importance of addressing the three dimensions of learning within the institution.

The first initiative is a dedicated lecture series on sustainable development and the cultivation of global citizenship. This lecture series aims to provide a solid foundation for students and faculty members to develop an understanding of and engagement with ESD and GCEd principles. The second initiative involves providing *research funding for student team projects* specifically targeting individual sustainable development goals (SDGs). This initiative not only empowers students to undertake meaningful research but also fosters a culture of engagement and commitment to addressing specific social and environmental issues. The third initiative is a research project funded by the university president. This project serves as a groundwork for promoting further SDG research and establishing research networks for more strategic engagement with the SDGs. This project demonstrates Yonsei's commitment to advancing the knowledge and understanding of sustainable development through rigorous research efforts. Finally, Yonsei University organizes the Global Engagement and Empowerment Forum (GEEF), South Korea's premier international conference dedicated to the SDGs. GEEF serves as a platform for disseminating ESD and GCEd practices and engaging with a broader society.

Table 1. Framework of ESD and GCEd for Case Analysis (Source: Authors referring to previous literature)

	A. ESD	B. GCEd
1. Policy	1AB_1. School-level endorsement of ESD and GCEd	
2. Objective	2A_1. Promote understanding of global challenges 2A_2. Empower learners to make informed decisions 2A_3. Take individual and collective action to change society	2B_1. Empower learners of all ages to assume active roles, both locally and globally, in building more peaceful, tolerant, inclusive, and secure societies 2B_2. Promote values of collaboration, nondiscrimination, diversity, cultural understanding, peace, and solidarity for humanity
3. Learning Environment	3AB_1. Whole-institution approach	
4. Pedagogy	4A_1. Interactive, Project-based, Learner-centered pedagogy	4B_1. Theory oriented, focusing on multicultural competence, society equity 4B_2. Linkage with communities (both local and global) and real-life experiences
5. Theme/Topics	5A_1. Environmental Sustainability, Sustainable Production and Consumption, Human Survival and Well-Being	5B_1. Cultural Diversity and Tolerance, Peace and Non-Violence, Human Rights and Gender Equality
6. Learning Contents	6A_1. Transdisciplinary course encompassing both theory and practice 6A_2. Participatory curriculum including various in-class activities (i.e., case study analysis, group exercises)	6B_1. Theory oriented formal curriculum 6B_2. Experience of cultural diversity
7. Learning dimensions	7A_1. Cognitive: Understanding sustainability challenges, contents/topic knowledge 7A_2. Cognitive + Social/Emotional: To be aware of their relevance to the surrounding realities, promoting positive values and attitudes 7A_3. Behavioral : take action for change	7B_1. Cognitive: adopting a multiperspective approach that recognizes different dimension, perspectives and angles of issues 7B_2. Social/Emotional: develop socioeconomic skills (i.e., empathy, conflict resolution, and communicative skills and aptitudes for networking and interacting with people of different backgrounds, origins, cultures and perspectives) 7B_3. Behavioral: collective and responsible action for collective good

While each initiative may differ in their approaches, structures, contents, and target groups, they all share a common goal of promoting the principles of ESD and GCEd. These initiatives are aligned with Yonsei University's overarching 'Vision-Yonsei 150'¹, which is composed of three pillars: Excellence, Innovation, and Engagement. Through these initiatives, Yonsei aims to deliver transformative messages and create a positive impact that extends beyond the university

¹Vision-Yonsei 150" is the strategic vision of Yonsei University, outlining its aspirations and goals for the future. The name "Vision-Yonsei 150" is derived from the university's long and illustrious history, as it was founded in 1885, and the vision looks ahead to the next 150 years. The main pillars of Vision-Yonsei 150 are "Excellence, Innovation, and Engagement." Each pillar represents a key aspect of the university's mission. 'Excellence' expresses Yonsei University's aim to maintain and enhance its position as a world-class institution of higher learning. This involves pursuing academic and research excellence across various fields, fostering a vibrant intellectual community, and providing high-quality education to its students. 'Innovation' represents Yonsei's emphasis of innovation in addressing complex global challenges and driving positive change. Through 'Engagement,' Yonsei seeks to be actively engaged with society, making a positive impact on local and global communities. The university encourages social responsibility, community service, and active participation in addressing social issues and contributing to the public good.

itself, encompassing a wide range of objectives, from theoretical exploration to practical implementation and knowledge sharing, as illustrated in Figure 1. By embracing this holistic approach, Yonsei seeks to contribute not only to its own community but also to the global pursuit of sustainable development and global citizenship.

In the following sections, we delve into each initiative in detail, exploring their objectives, activities, and outcomes. Furthermore, we analyze these initiatives via the framework we have developed to gain insights into their contributions to sustainable development and global citizenship.

The lecture: Understanding Sustainable Development with Ban Ki-Moon

Yonsei IGEE has opened a lecture titled "Understanding Sustainable Development with Ban Ki-moon" every semester since 2018. Throughout the years, this course has

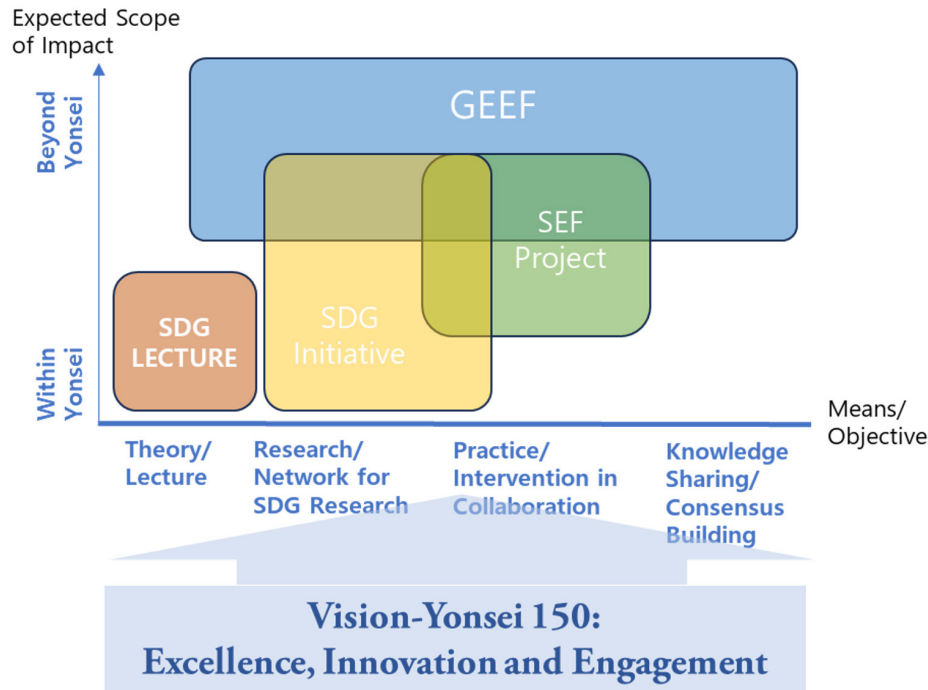


Figure 1. Yonsei's Initiatives for ESD and GCEd (Source: Drawn by the authors)

evolved to have the current coteaching structure since the Spring semester of 2021. The course covers various aspects of sustainable development, encourages students to delve into specific SDGs, and aims to foster a sense of global citizenship. Specifically, the course is designed to provide students with an understanding of the theories, contexts, and practices of sustainable development goals (SDGs).

The course aims to provide students with a comprehensive understanding of sustainable development from multiple perspectives. It covers various aspects, including the definition and historical background of sustainable development, as well as normative and analytical frameworks. One of the key objectives of the course is to explore the five Ps of sustainable development: people, peace, prosperity, planet, and partnership. Students are encouraged to critically examine the key issues and current challenges associated with each of these dimensions. In addition to knowledge acquisition, the course also seeks to cultivate a sense of global citizenship among students. By engaging with diverse topics and perspectives, students are encouraged to develop a broader understanding of the interconnectedness of global issues and the need for collective action. Over the past three years, lecture topics have covered a wide range of subjects related

to sustainable development. These include healthcare and medical education in developing countries, COVID-19 response in developing nations, healthcare policy for sustainable development, AI for sustainability, design thinking for the SDGs, science and technology innovation, space technology, and international development cooperation. While the course has evolved over time, the current topics covered in the class primarily revolve around SDGs 1 (No Poverty), 3 (Good Health and Well-being), 4 (Quality Education), 9 (Industry, Innovation and Infrastructure), 11 (Sustainable Cities and Communities), 13 (Climate Action), and 17 (Partnerships for the Goals). However, there is a plan to expand the course to encompass all 17 SDGs in the future. By exploring the full spectrum of the SDGs, the course aims to equip students with a comprehensive understanding of the interconnected challenges and opportunities for achieving sustainable development globally.

The course follows a flipped learning approach where students watch prerecorded lectures uploaded on Fridays, and the following Wednesday, there are real-time lectures and discussions on the topics covered in the lectures. The teaching team for this course includes renowned figures such as Ban Ki-moon, the former Secretary-General of the United

search. The primary objective of SEF is to familiarize undergraduate students with the SDG framework and approaches, encouraging them to apply their knowledge in real-world contexts and become proactive agents of change. An important aspect of the program is the promotion of interdisciplinary collaboration, as teams are formed with students from various majors.

Yonsei IGEE takes the lead in operating and managing the SEF program, providing administrative support and scholarships to participating students. The program receives partial sponsorship from the University Innovation Support Project at Yonsei University. The SEF program has undergone adjustments to better cater to undergraduate students over the years. Initially, both researcher and student teams were supported, but starting in 2019, the program focused exclusively on supporting student teams. From 2019--2020, student teams were assigned an advisor who serves as the project director, providing guidance and support throughout their activities. Since 2021, teams have been run solely by students. The program has seen an increase in participants since its inception, with the number of teams growing from 5--9 (from 11 individual participants to 26) by 2023. The budget has also grown over time, starting from 15,000,000 WON (approx. \$12,000.00) and reaching 40,000,000 WON (approx. \$38,000.00) in 2023. Detailed information on the SEF process is available in the Appendix.

For effective project implementation, Yonsei IGEE also offers essential training, including overseas travel safety training, gender awareness training, and technology utilization guidelines. Notably, students receive a preliminary orientation on project management, equipping them with the necessary skills to plan and implement their research activities effectively within the six-month research period. Collaboration is emphasized throughout the program, enabling students to learn how to work together and leverage diverse perspectives to achieve their research goals.

There are several essential components of SEF projects that every team must fulfill. First, all teams are expected to conduct fieldwork and interviews during their research in relevant areas. For teams addressing international issues, there are opportunities for overseas field trips, allowing students to gather firsthand information and insights from the field. This experiential learning approach enables students to develop innovative and radical solutions by closely engaging with the challenges they are researching. The teams are also required to present interim and final reports as part of

their project evaluation. The top-performing teams have the unique opportunity to participate in the Global Engagement and Empowerment Forum (GEEF) in 2024. GEEF, which will be discussed below, aims to raise awareness and promote the global implementation of the SDGs. By participating in GEEF, these teams can share their research outcomes and contribute to the advancement of the SDGs. The reports of the winning teams will also be published on the IGEE website and social network services, ensuring that a wider audience can benefit from valuable information and perspectives on the SDGs.

Since its inception, the SEF program has covered a wide range of project topics. In the current year, 2023, student teams are working on projects such as reviewing legislation on NF3 (nitrogen trifluoride) greenhouse gas, designing an integrated environmental management plan for carbon neutrality and green growth, studying coral bleaching and developing a restoration strategy for coral ecosystems, creating a new generation disposal bin to address urban littering of cigarette butts, and assisting out-of-school youth in building self-identity, among others.

Research: SDG Initiative Project of IGEE

The "SDG Initiative" is a research project funded by the president of Yonsei University as one of the university's policy research initiatives. The project aims to address the need for comprehensive and integrated approaches to address the social issues outlined in the Sustainable Development Goals (SDGs). Problem-centered solutions require the convergence of existing academic disciplines, which is currently lacking in the academic system.

The objective of the "SDG Initiative" is to assess Yonsei University's academic contributions and practices related to sustainable development, identify patterns and directions, and develop a strategic research portfolio to achieve the SDGs. The project has three main goals. First, it aims to conduct in-depth investigations and analyses of transnational social issues to identify priority areas for problem solving. Second, it seeks to evaluate Yonsei University's academic contributions to sustainable development by analyzing data on capabilities and achievements at the departmental, individual, and research group levels. Finally, it aims to establish a strategic plan for Yonsei University to fulfill its social responsibility as an advanced research institution and for the Institute of Global Engagement and Empowerment (IGEE)

to execute further sustainable development research that includes the formation of a strategic research portfolio.

To achieve its specific research objectives, the project employs various methodologies. To assess Yonsei University's academic contributions to sustainable development, the project involves building a meta database that includes not only the research data but also various contextual factors, establishing data organization and management systems, and enhancing the efficiency of the systems. An analysis tool, 'sdg.ai', is developed on the basis of NLP (natural language processing) and vector semantics to analyze Yonsei University's research achievements, classifying their contributions to the SDGs. Further analysis, such as comparison analysis, contextual factor analysis, and network analysis at the university, college, department, and individual levels, will be conducted.

Moreover, to fulfill Yonsei University's social responsibility as an advanced research institution, the project selects and compiles social issues aligned with Yonsei University's mission. From these issues, the project identifies those that can be most effectively addressed by Yonsei University's research capabilities. The project then derives a strategic research portfolio and formulates a plan for the IGEE Sustainable Development Research Center. The key methodology employed in this process is optimization methods, such as firefly and particle swarm optimization (PSO), as well as linear programming.

The "SDG Initiative" aims to utilize its research findings within Yonsei University and beyond. It plans to share the research status of the SDGs within the university, enhancing awareness among researchers and establishing networks among them. On the basis of the research status, the project will develop a strategic research portfolio and a plan for the IGEE Sustainable Development Research Center. Additionally, it aims to secure internal and external research funding, attract philanthropic donations, and establish partnerships with international research institutions, civil society organizations, and private sector entities. These efforts aim to build a sustainable research platform and lead SDG research in South Korea.

Conference: Global Engagement and Empowerment Forum

Yonsei University's Institute of Global Engagement and Empowerment (IGEE) organizes the Global Engagement

and Empowerment Forum (GEEF) annually in collaboration with the former United Nations Secretary-General Ban Ki-moon. GEEF was initiated with the objective of raising awareness about the SDGs and promoting their implementation on a global scale. Recognizing the urgent need to address pressing global issues, Yonsei University established GEEF as a platform for sharing knowledge, experiences, and best practices related to sustainable development. Since its first event in 2018, GEEF has served as a space for fostering dialog, generating innovative ideas, and mobilizing collaborative efforts toward achieving the SDGs.

GEEF fulfills several key purposes. First, it showcases and disseminates successful SDG practices from various sectors and regions. Through keynote speeches, panel discussions, and interactive sessions, GEEF provides stakeholders with a platform to share their experiences, initiatives, and innovative solutions that contribute to sustainable development. These practices serve as inspiration and catalysts for action, fostering a global community committed to addressing the challenges of sustainable development. Additionally, GEEF facilitates in-depth discussions on critical issues and challenges related to the SDGs. It offers participants an opportunity to explore the intersections between different goals, identify synergies, and address potential trade-offs. These discussions deepen understanding, foster collaboration, and develop practical strategies to advance SDG implementation across sectors and regions.

Participation in GEEF is diverse, ranging from internationally esteemed high-level officials and leaders of private sectors to students who have engaged in SDG research. The forum covers a wide range of sectors and topics, including gender, humanity, health, smart cities, social impact businesses, AI, art and sustainability, higher education, ESG, the environment, and more. Since 2018, more than 11,000 participants have attended both online and offline while hosting more than 2,000 onsite audience members every year.

Except for 2021 and 2022 GEEF, which were held online due to the pandemic, all GEEFs (2018, 2019, 2023) were hosted offline at Yonsei University. Since 2021, to increase accessibility and reach, GEEF has also streamed online in real time, and all sessions have also been recorded and shared after the GEEF at the IGEE GEEF website and YouTube Channel. These recordings enable individuals who are unable to attend the forum to watch the sessions at their convenience, promoting inclusivity and knowledge sharing among a broader audience. The number of YouTube views

reached more than 22,000 in 2021, which might have increased with respect to the pandemic situation, whereas it reached 8,500 and 4,700 in 2022 and 2023, respectively. A detailed description of the GEEF results is provided in the Appendix.

Following each GEEF event, a comprehensive GEEF report is published to ensure the continuity and dissemination of the knowledge generated. The report captures the main arguments and ideas discussed in each session, providing a valuable resource for participants and a wider audience interested in sustainable development. It offers a summary of insights, innovative solutions, and policy recommendations shared by speakers and participants. The report is shared with stakeholders who participated in the event, enabling them to further reflect on the discussions and integrate insights into their initiatives and policies. Additionally, the report is made accessible to the public through the IGEE GEEF website, allowing a broader audience to benefit from the wealth of information and perspectives shared during GEEF.

By ensuring the accessibility and availability of the GEEF report and session recordings, Yonsei University's IGEE demonstrates its commitment to knowledge sharing, transparency, and inclusivity. These efforts amplify the impact of GEEF, enabling the discussions and ideas generated at the event to reach a wider audience and catalyze positive change in the pursuit of sustainable development.

Application of the Framework: Analyses Results

The four initiatives introduced above are further analyzed by applying the framework suggested in [Table I]. The detailed analysis results for each evaluation criterion are presented in Table II-A in the Appendix. In this section, we elaborate on the overall results, identified strengths and weaknesses, and implications for future improvements.

The analysis of the four initiatives in global citizenship education (GCEd) and education for sustainable development (ESD) at Yonsei University reveals a harmonious and complementary relationship among these programs, leading to a synergistic effect. One of the notable strengths of these initiatives lies in their clear objectives, embracing both the GCEd and ESD principles. They reflect a whole-institution approach, where Yonsei University demonstrates its commitment to promoting sustainable development and global citizenship across its diverse activities.

The pedagogical approach used in these initiatives is an-

other strength. It strikes a balance between theory and practice, linking academic learning with real-world challenges. The "Understanding Sustainable Development with Ban Ki-moon" lecture series exemplifies interdisciplinary education by utilizing Yonsei's rich resources and providing comprehensive coverage of various SDG issues and challenges. Similarly, the Social Engagement Fund (SEF) encourages students to engage in in-depth contemplation of solutions for specific problems and take practical action, fostering proactive change-makers. In the meantime, the "SDG Initiative" demonstrates strength in its role as a strategic platform for promoting SDG research at Yonsei University. By building awareness of SDG research among professors and researchers, the initiative establishes a firm foundation for furthering sustainability-focused research at the university. Additionally, the initiative's efforts to identify strategic research directions aligning with the SDGs are instrumental in guiding Yonsei's research community toward impactful contributions to sustainable development. Finally, the "Global Engagement and Empowerment Forum (GEEF)" stands as a representative initiative in disseminating knowledge about SDG challenges and solutions to a broader audience. As the only regular international conference on the SDGs in South Korea, GEEF plays a crucial role in increasing awareness of global goals and encouraging collaborative efforts among diverse stakeholders. By providing a platform for dialog, idea exchange, and collaboration, GEEF fosters a global community committed to achieving the SDGs.

However, the analysis also points to areas of improvement. One such area is the curriculum content. While the initiatives cover a wide range of topics, there is room for expansion to include even more diverse themes, broadening the scope of sustainable development and global citizenship education. Moreover, offering lectures in English could enhance inclusiveness and attract a more diverse audience, further promoting international engagement and knowledge sharing. Additionally, initiatives could benefit from a more robust system to measure and evaluate outcomes. Implementing close follow-up and conducting before-and-after surveys can provide valuable insights into the impact of these initiatives on participants and the broader community. This data-driven approach will aid in continuously refining and enhancing the effectiveness of the programs.

Furthermore, the analysis reveals that the current initiatives may place relatively lower emphasis on noncognitive learning aspects, such as empathy, communicative skills,

and conflict-resolution skills. While these may be present in other Yonsei universities' activities, such as foreign exchange programs and volunteer programs, incorporating these elements more explicitly into the IGEE initiatives could further enrich students' learning experiences.

Despite these areas for improvement, the overall analysis shows that Yonsei IGEE's initiatives make significant strides in promoting global citizenship and sustainable development. By capitalizing on their strengths and addressing the identified areas for enhancement, these initiatives can further empower individuals to become agents of positive change, fostering a more sustainable and inclusive future for all.

Conclusion

The importance and role of higher education in addressing global issues and achieving sustainable development goals (SDGs) have been increasingly emphasized. Today's global challenges cannot be adequately addressed solely through political, economic, or technological means. Sustainable development and global citizenship education are considered essential for effectively achieving the SDGs. This study focuses on four initiatives by the Institute of Global Engagement and Empowerment (IGEE) at Yonsei University, a respected higher education institution in Korea. This study examines how these initiatives align with global standards for sustainable development education and global citizenship education through a case study.

To conduct this research, a framework was developed on the basis of a literature review. The framework encompasses policy development, objective setting, environmental considerations, pedagogical approaches, thematic focus, learning content structure, and expected outcomes for sustainable development education and global citizenship education.

The findings reveal that all four initiatives have clear objectives that incorporate both global citizenship education and education for sustainable development principles, meaning that the IGEE provides education that meets international standards and contributes to the international community. Additionally, all initiatives are carried out via a whole-institution approach, signifying Yonsei University's commitment to sustainable development. The pedagogical approach used in these initiatives involves a balance between theory and practice, connecting academic learning with real-world challenges.

However, there are areas that can be improved. The cur-

rent initiatives cover a considerable range of topics but tend to focus more on specific sustainable development goals. To enhance sustainable development and global citizenship education, future initiatives should include a broader array of topics. Additionally, offering lectures in English instead of Korean can make them more inclusive and attract a wider audience, promoting international engagement and knowledge sharing. Moreover, incorporating noncognitive skills more explicitly into initiatives could enrich students' learning experiences. Moreover, implementing close follow-up and conducting before-and-after surveys can offer valuable insights into the impact of these initiatives on participants and the broader community. This data-driven approach will continuously refine and enhance the effectiveness of the programs.

The study suggests further research, including a comparative analysis of initiatives at Yonsei University and other universities in South Korea, to provide valuable insights for improving the programs. It could also serve as a guideline for developing similar programs in higher education institutions in developing countries.

References

- Byun, Y. J. (2010). *A contents analysis on global citizenship education in 2007 revised elementary social studies curriculum* (Master's thesis). Seoul National University of Education.
- Chiba, M., Sustarsic, M., Perriton, S., & Edwards Jr, D. B. (2021). Investigating effective teaching and learning for sustainable development and global citizenship: Implications from a systematic review of the literature. *International Journal of Educational Development*, 81, 102337. <https://doi.org/10.1016/j.ijedudev.2020.102337>
- Décamps, A., Barbat, G., Carteron, J., Hands, V., & Parkes, C. (2017). Sulitest: A collaborative initiative to support and assess sustainability literacy in higher education. *The International Journal of Management Education*, 15(2), 138-152. <https://doi.org/10.1016/j.ijme.2017.02.003>
- Ferguson, T. (2019). Climate change education for sustainable development. *Encyclopedia of sustainability in higher education*, 1-10. https://doi.org/10.1007/978-3-319-63951-2_472-1
- Ferguson, T., & Rooft, C. G. (2020). SDG 4 in higher education: Challenges and opportunities. *International Journal of Sustainability in Higher Education*, 21(5), 959-975. <https://doi.org/10.1108/IJSHE-12-2019-0363>
- Franco, I., Saito, O., Vaughter, P., Whereat, J., Kanie, N., & Takemoto, K. (2019). Higher education for sustainable develop-

- ment: Actioning the global goals in policy, curriculum and practice. *Sustainable Science*, 14, 1621-1642. <https://doi.org/10.1007/s11625-018-0628-4>
- Hwang, S. Y., Choi, J. W., Mun, J. H., & Choi, Y. (2017). *How to activate youth activities to foster global citizenship*. National Youth Policy Institute. https://www.nypi.re.kr/brdr/boardrView.do?menu_nix=409771b7&brd_id=BDIDX_PJk7xvf7L096m1g-7Phd3YC&cont_idx=586&seltab_idx=0&edomweivgp=R
- IGEE. (2022). *Yonsei University sustainability roadmap 2030*. Institute for Global Engagement and Empowerment, Yonsei University.
- Khoo, S., & Jørgensen, N. J. (2021). Intersections and collaborative potentials between global citizenship education and education for sustainable development. *Globalisation, Societies and Education*, 19(4), 470-481. <https://doi.org/10.1080/14767724.2021.1889361>
- Kim, Y. S., & Yoon, H. H. (2018). A study on the support methods of education for sustainable development in connection with global citizenship education. *Journal of Education & Culture*, 24(4), 33-52. <https://doi.org/10.18189/yes/24567890>
- Kwon, Y., Lee, M., Kim, H., Yoo, E., & Kim, C. (2021). *Research on national and social demand for education of sustainable development*. Korea Institute of Curriculum and Evaluation (KICE). ISBN 979-11-91582-46-8-93370.
- Leal Filho, W., Shiel, C., Paco, A., Mifsud, M., Ávila, L., Brandli, L., Molthan-Hill, P., Pace, P., Azeiteiro, U., Vargas, V., & Caeiro, S. (2019). Sustainable development goals and sustainability teaching at universities: Falling behind or getting ahead of the pack. *Journal of Cleaner Production*, 232, 285-294. <https://doi.org/10.1016/j.jclepro.2019.05.309>
- Lewis Chiu, C., Sayman, D., Carrero, K., Gibbon, T., Zolkoski, S., & Lusk, M. (2017). Developing culturally competent preservice teachers. *Multicultural Perspectives*, 19(1), 47-52. <https://doi.org/10.1080/15210960.2017.1267515>
- Mundy, K., & Manion, C. (2008). Global education in Canadian elementary schools: An exploratory study. *Canadian Journal of Education/Revue Canadienne De L'éducation*, 31(4), 941-974. <https://doi.org/10.2307/20466796>
- Oh, S. K., Oh, Y. H., & Choi, H. (2016). The elementary and middle school teachers' perception on the education of sustainable development in relation to the global citizenship education. *The Journal Of Humanities and Social Sciences* 21, 7(5), 87-101.
- Oxfam. (2015). *Education for global citizenship: A guide for schools*. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/620105/edu-global-citizenship-schools-guide-091115-en.pdf?sequence=11&isAllowed=y>
- Pike, G. (2000). Global education and national identity: In pursuit of meaning. *Theory into Practice*, 39(2), 64-73. https://doi.org/10.1207/s15430421tip3902_2
- Ramaswamy, M., Marciniuk, D. D., Csonka, V., Colò, L., & Saso, L. (2021). Reimagining internationalization in higher education through the United Nations sustainable development goals for the betterment of society. *Journal of Studies in International Education*, 25(4), 388-406. <https://doi.org/10.1177/10283153211007500>
- Reid, J., Kagan, S., & Scott-Little, C. (2019). New understandings of cultural diversity and the implications for early childhood policy, pedagogy, and practice. *Early Child Development and Care*, 189(6), 976-989. <https://doi.org/10.1080/03004430.2017.1337763>
- Remington-Doucette, S. M., Hiller Connell, K. Y., Armstrong, C. M., & Musgrove, S. L. (2013). Assessing sustainability education in a transdisciplinary undergraduate course focused on real-world problem solving: A case for disciplinary grounding. *International Journal of Sustainability in Higher Education*, 14(4), 404-433. <https://doi.org/10.1108/IJSHE-01-2012-0001>
- Stewart, B., Khare, A., & Schatz, R. (2016). *Volatility, uncertainty, complexity and ambiguity in higher education. Managing in a VUCA world*, 241-250. https://doi.org/10.1007/978-3-319-16889-0_14
- Sung, Y. K. (2010). A theoretical discussion on universal core elements and Korean distinctiveness in global citizenship education. *The Journal of Korean Education*, 37(2), 109-130.
- Tomlinson, C., Brighton, C., Hertberg, H., Callahan, C., Moon, T., Brimjoin, K., Conover, L., & Reynolds, T. (2013). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal of Education of the Gifted*, 27(2-3), 119-145. <https://doi.org/10.1177/01623532030270020>
- UNESCO. (2013). *Outcome document of the Technical Consultation on Global Citizenship Education: Global citizenship education: An emerging perspective*. Technical Consultation on Global Citizenship Education, Seoul. <https://unesdoc.unesco.org/ark:/48223/pf0000224115>
- UNESCO. (2014a). *UNESCO Roadmap for implementing the global action programme on Education for Sustainable Development*. UNESCO, France. <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1674&menu=1515>
- UNESCO. (2014b). *Global citizenship education: Preparing learners for the challenges of the 21st century*. UNESCO, France. <https://unesdoc.unesco.org/ark:/48223/pf0000227729>
- UNESCO. (2016). *Incheon Declaration and Framework for Action*

- for the Implementation of Sustainable Development Goal 4.* UNESCO, France. <https://unesdoc.unesco.org/ark:/48223/pf0000245656>
- UNESCO. (2017). *Education for Sustainable Development Goals: Learning objectives.* UNESCO, France. <https://unesdoc.unesco.org/ark:/48223/pf0000247444>
- UNESCO. (2019). *Educational content up close: Examining the learning dimensions of Education for Sustainable Development and Global Citizenship Education.* UNESCO, France. <https://unesdoc.unesco.org/ark:/48223/pf0000372327>
- UNESCO. (2020). *Education for sustainable development: A roadmap.* UNESCO, France. <https://unesdoc.unesco.org/ark:/48223/pf0000374802>
- UNESCO Korea. (2022). *2021 Republic of Korea Report on Progress of Understanding SDG4.* Korean National Commission for UNESCO, South Korea. https://www.unesco.or.kr/assets/data/report/TTsHgWMqNFcxbKKlwT4MBmD8moAe3o_1645406991_2.pdf
- Vaughter, P. (2018). *Beacons, not towers: How higher education can help achieve the sustainable development goals.* Policy Brief 13, United Nations University Institute for the Advanced Study of Sustainability.
- Yoo, H. K. (2023). *How far has ESD reached? Comparing policies of Korea, U.S., and Japan.* E-KOREA News, February 10, 2023. <https://www.ekoreanews.co.kr/news/articleView.html?idx-no=65283>