



Higher Education's Role in Achieving SDGs through OBE and Character Education

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Abstract

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Higher education holds a strategic and central role in achieving the Sustainable Development Goals by shaping human resources who are knowledgeable, ethical, and committed to sustainability. Universities serve not only as centers of knowledge and innovation but also as transformative agents that embed sustainability values into academic culture and social engagement. Through the integration of sustainability principles into the curriculum and the implementation of the Outcome-Based Education approach, institutions of higher learning can effectively cultivate moral values, social responsibility, critical thinking, and environmental awareness among students. This study aims to analyze the role of higher education in aligning Sustainable Development Goals with character education by employing a literature review of scholarly works published in the last five years. The results reveal that the application of Outcome-Based Education and character education significantly contributes to enhancing ecological consciousness, promoting social innovation, and advancing sustainable development both within universities and across communities. Furthermore, higher education institutions are encouraged to strengthen their roles in education, research, and community service to produce graduates of integrity who possess global competitiveness and a strong sense of ethical and environmental responsibility.



1. Introduction

Higher education plays a highly strategic role in efforts to achieve sustainable development, as it is the center for the development of knowledge, innovation, and human character formation. On a global scale, higher education institutions function not only as educational bodies but also act as responsible agents of social change in implementing the SDGs. According to Zhou et al. (2019), universities play a crucial role in encouraging the achievement of the SDGs by providing education that instills environmental awareness, social responsibility, and fosters sustainable innovation. Higher education institutions function as a social experimental ground that generates ideas, knowledge, and solutions to various global problems, such as social inequality, climate change, and environmental damage.

In addition to producing knowledgeable graduates, higher education institutions also have the responsibility to produce individuals with strong character, social empathy, and concern for the environment. Character education plays a crucial role in building students' integrity, morality, and ethical awareness so that they can contribute positively to society. Kosor (2023) states that the success of higher education in supporting sustainable development is determined not only by academic innovation but also by the institution's ability to instill humanitarian values and social responsibility within campus life. Through learning oriented towards sustainability values, students are not only enriched with intellectual capacity but are also trained to think critically and reflectively about the social and ecological consequences of their actions.

One educational paradigm aligned with the goals of the SDGs is the OBE approach. This approach focuses on learning outcomes that cover three main domains: knowledge, skills, and attitude. With this paradigm, the educational process no longer emphasizes only theoretical mastery but also real application in social and professional contexts. Pedro et al. (2020) affirm that OBE encourages higher education institutions to design flexible, adaptive, and relevant curricula that meet the needs of society and industry, while also being oriented towards achieving the SDGs. This approach demands active student participation so that they can achieve competencies that are measurable, realistic, and relevant to real-world problems.

To implement sustainability principles in higher education, close collaboration between all stakeholders is required. Ocaña-Zúñiga et al. (2023) reveal that the implementation of SDGs in the university environment still faces obstacles such as low levels of awareness among the academic community and limited institutional support. Therefore, a shared commitment from university leaders, lecturers, students, and the government is essential to build an educational system that favors sustainability and inclusivity. Furthermore, education for sustainable development must also adopt a cross-disciplinary approach. Mokski et al. (2023) emphasize that the transformation towards a sustainable university can only be realized through interdisciplinary cooperation, such as technology, economics, social sciences, and environment. This cross-sector collaboration allows students to comprehensively understand the interconnection between social, economic, and ecological aspects, thus enabling them to formulate holistic solutions to sustainability issues.

Higher education needs to transform into an institution that balances the development of knowledge, humanitarian values, and responsibility for the preservation of the earth. The implementation of OBE and the strengthening of character education are key strategies in achieving this goal because both focus on tangible and socially impactful learning outcomes. Through outcome-based learning and moral values, higher education institutions can produce a young generation that is not only academically superior but also possesses high social awareness and ecological sensitivity. Collaboration between research, academic innovation, and community service becomes the main foundation for sustainable universities to contribute concretely to the achievement of the SDGs globally.

2. Methods

This study employs the literature review method as the primary approach to analyze the contribution of higher education to achieving the SDG through the integration of character education and OBE. This approach was chosen because it can provide a comprehensive understanding of previous research findings, while also identifying relevant trends, challenges, and implementation strategies in the context of sustainable education.

The research stages begin with the collection of secondary data from various scientific sources published within the last five years through the Google Scholar, Research Gate and Elsevier database. The selection process was carried out by setting inclusion criteria to ensure the relevance of the sources to the research topic,

which includes the themes of higher education, sustainable development, character education, and OBE implementation.

Following the data collection process, a thematic analysis was conducted to group the information into several main categories, namely: (1) the role of universities in supporting the implementation of SDGs, (2) the application of OBE in the development of higher education curricula, (3) the connection between character education and sustainability principles, and (4) the challenges of implementing SDGs in the academic environment. This analysis was conducted qualitatively, by comparing and synthesizing findings from various literature to identify patterns, relationships between concepts, and consistent conceptual conclusions. The next stage is a critical review of each source used to assess its validity, relevance, and reliability. Only articles that meet academic standards, have a strong empirical basis, and are published in reputable journals were included in the analysis.

This process helped the researcher gain an in-depth understanding of how higher education contributes to supporting the achievement of the SDGs through the application of character education and the outcome-based approach. By using the literature review method, this study does not only present a summary of findings from previous research but also highlights the knowledge gap (research gap) in the practice of SDG implementation in higher education institutions. This approach provides a strong conceptual framework for understanding the synergy between OBE and character education in building a higher education system that is oriented

towards sustainability, competitiveness, and focused on holistic human development.

3. Results

The findings of the literature review indicate that higher education plays a highly strategic role in supporting the realization of sustainable development through three main pillars: education, research, and community service. These three aspects serve as the main drivers for universities to adapt and respond to increasingly complex global challenges, such as the environmental crisis, social inequality, and the rapid pace of technological development. In this context, higher education institutions are not only instrumental in producing academically superior graduates but are also responsible for fostering ecological awareness, social empathy, and a sense of moral responsibility towards the sustainability of human life and the environment (Gordon et al. 2023).

According to Ashida (2022), universities have a central role in accelerating the implementation of the SDG's by integrating sustainability values into the education system, both through curriculum and institutional policies. Higher education is considered a center for innovation and renewal that can transform knowledge into practical solutions to development challenges. Higher education institutions that apply a sustainability-oriented strategy will be able to generate systemic transformations in society, as sustainability is no longer considered supplementary, but a fundamental part of the university's entire academic and managerial activity.

Several studies show that universities in various countries have begun implementing the OBE approach in an effort to strengthen the relevance of higher education to the goals of the SDGs. Adhikari and Shrestha (2023) explain that OBE provides a systematic framework to ensure that student learning achievements are aligned with the needs of society and the workforce that support sustainability. This approach emphasizes measurable learning outcomes, covering cognitive, affective, and psychomotor aspects. In its implementation, OBE demands that every higher education institution design learning outcomes that reflect the values of social justice, efficiency in resource use, and responsibility for the living environment.

However, the implementation of OBE and sustainable education principles does not always run smoothly. Lim et al. (2022) reveal that many universities still face obstacles in integrating the SDGs comprehensively. Some higher education institutions do not yet have adequate institutional capacity and awareness to implement sustainability principles systematically. Sustainability is often viewed as a short-term project, rather than a philosophy inherent in the educational vision. These challenges are caused by limited supportive policies, lack of human resources trained in sustainable education, and the sub-optimal cross-disciplinary collaboration between faculties.

In addition to structural factors, the cultural and ethical dimensions also have a large influence on the success of implementing sustainable education. Kosor (2023) asserts that universities need to instill sustainability values as part of the living academic culture on campus. In this regard, character education holds an important role as a means of internalizing moral values, social empathy, and ecological

responsibility. Through character education, students are shaped to have an ethical awareness of the social and environmental consequences of their every action. In the context of the SDGs, character education becomes the ethical foundation that ensures every form of innovation, research, and academic policy is carried out for the good of humanity and the preservation of nature.

The results of the study also show that the synergy between character education and OBE yields a positive impact on the formation of graduates who are globally competitive and socially integrated. By combining the outcome-based approach and the formation of character values, universities can instill values such as honesty, collaboration, empathy, and ecological responsibility into learning achievements. Mokski et al. (2023) explain that the integration of SDGs into the higher education system requires cross-disciplinary collaboration between social sciences, science, technology, and humanities. This interdisciplinary approach allows students to comprehensively understand the interconnectedness between social, economic, and environmental dimensions.

From a policy perspective, a number of universities in various regions, especially Europe and Asia, have begun implementing sustainable curricula with a project-based learning approach (Hou et al., 2023). This model allows students to be directly involved in solving real problems related to social and environmental sustainability. Through project-based learning, students are trained to think critically, creatively, and reflectively in connecting theory with practice. This approach is aligned with the OBE principle that emphasizes concrete learning outcomes and the social relevance of every academic activity. Thus, students do not only understand

the theory of sustainable development but also internalize ethical values and social responsibility in its application.

Furthermore, Ashida (2022) as well as Adhikari and Shrestha (2023) highlight the importance of multi-stakeholder collaboration in strengthening SDG implementation in higher education. Active involvement between the government, industry, civil society, and the academic world is a determining factor in the success of sustainability integration. The government can play a role through sustainable research funding policies and the implementation of green campus policy. Industry contributes by opening collaboration spaces for applied research and sustainability practices in the workplace. Meanwhile, civil society can play a role in providing feedback and active participation in sustainable education programs run by the university.

In addition to external support, the role of lecturers and educators is a crucial internal factor. Franco et al. (2019) emphasizes the importance of enhancing lecturer capacity in sustainable education so that they can integrate SDG concepts into the learning and teaching process. Continuous training for educators is necessary to strengthen their understanding and awareness of sustainability principles. Thus, teaching is not only a transfer of knowledge but also a process of value transformation oriented towards social and ecological balance. On the other hand, students as learners must be encouraged to play an active role through research, social innovation, and collaborative sustainability-based projects.

The literature review also highlights that digital technology is an important instrument in strengthening the implementation of SDGs in higher education. The

use of information technology enables the expansion of access to sustainable education through online learning, virtual laboratories, and data-driven evaluation systems. Technology not only functions as a learning medium but also as a tool to measure the effectiveness of campus sustainability programs, such as carbon footprint monitoring or energy use efficiency. This aligns with the OBE principle that emphasizes adaptivity, self-directed learning, and concrete and measurable learning outcomes.

Nevertheless, the research results affirm that the transformation towards a sustainable university requires a long-term process accompanied by consistent commitment from all stakeholders. The paradigm shift from a traditional education system to one based on outcomes and moral values does not only demand curriculum revision but a comprehensive reform of the very philosophy and practice of education. Universities must be able to instill sustainability principles in every aspect of operation, ranging from resource management, research, to social relations with the surrounding community.

The literature findings from the various article affirm that higher education is a fundamental pillar in realizing the SDGs globally. Through the combination of the OBE approach, which focuses on outcome achievement, and character education, which instills humanitarian values, universities can produce a generation that thinks systemically, ethically, and possesses the ability to find solutions to various sustainability challenges. Collaboration between academics, government, the industrial sector, and civil society becomes an important foundation for universities to act as agents of social change. Higher education institutions are not only tasked

with transferring knowledge but also ensuring that this knowledge is used to create positive social, economic, and ecological impacts. Thus, higher education can function as a transformative force in building a future that is sustainable, inclusive, and equitable for all humanity.

4. Conclusion

Based on the results of the literature review, it can be concluded that higher education has a strategic role in supporting the achievement of the SDGs through the integration of character education and the OBE approach. Higher education institutions function not only as knowledge-producing institutions but also as agents of social change that instill moral values, environmental responsibility, and social empathy in students. The implementation of OBE encourages learning that is outcome-oriented and relevant to the needs of society and the sustainable workforce. Character education serves as the ethical foundation that ensures every learning achievement, research, and innovation is carried out considering humanitarian aspects and environmental preservation.

The synergy between OBE and character education is proven to produce graduates who are competent, possess integrity, and have a global awareness of sustainability issues. Nevertheless, the transformation towards a sustainable university still faces structural, cultural, and policy challenges. Therefore, strong collaboration is needed among the government, industry, society, and the academic community to strengthen the implementation of SDGs in higher education. With a shared commitment and sustainable innovation, higher education institutions can

act as a driving force in building a society that is just, inclusive, and sustainable for future generations.

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