

Research Article

Faculty Perceptions of Sustainability Initiatives: Insights on Knowledge, Readiness, and Integration of Sustainability Concepts in Teaching

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ABSTRACT

Sustainability has become a critical component of modern education, necessitating its integration into teaching practices. This study explores faculty perceptions of sustainability initiatives, focusing on their knowledge, readiness, and ability to incorporate sustainability concepts into their teaching. Using a mixed-methods approach, data were collected through surveys and interviews with faculty members from various disciplines. The findings highlight the extent of faculty awareness and understanding of sustainability, the challenges they face in integrating these concepts, and the support needed to enhance sustainability education. Results indicate that while faculty members recognize the importance of sustainability, gaps in training, institutional support, and curriculum resources hinder effective integration. Based on these insights, the study provides recommendations for professional development programs, policy enhancements, and curriculum revisions to foster sustainability-oriented teaching. The findings contribute to the broader discourse on sustainable education and offer practical strategies for higher education institutions to advance sustainability initiatives.

Keywords: Sustainability Education, Faculty Perceptions, Teaching Integration, Knowledge Readiness, Higher Education

1. INTRODUCTION

As higher education institutions (HEIs) increasingly commit to sustainability, faculty members serve as key in embedding sustainability principles into academic instruction and research. Their level of knowledge, preparedness, and willingness to incorporate sustainability concepts into curricula directly impacts students' awareness and engagement with environmental, social, and economic sustainability, as well as the United Nations Sustainable Development Goals (SDGs). Given their role in shaping future professionals and decision-makers, faculty members are instrumental in encouraging a culture of sustainability within educational institutions (Price et al., 2021).

The SDGs, introduced by the United Nations in 2015, comprise 17 interconnected goals designed to address critical global challenges such as poverty, inequality, and climate change (Wadhvani & Malpani, 2023). These goals offer a comprehensive framework for collaboration among governments, businesses, and civil society to achieve a more sustainable world by 2030 (Weiland et al., 2021). Expanding on the foundation of the Millennium Development Goals, the SDGs now encompass broader themes, including economic inequality, responsible consumption, and environmental stewardship ((Pizzi et al., 2020). Achieving these targets requires local-level action, inclusive stakeholder participation, and substantial investment in infrastructure and essential services (Wadhvani & Malpani, 2023).

In this context, HEIs are uniquely positioned to contribute by fostering sustainability-focused education, advancing research, and engaging communities in pursuit of these global objectives (Dawson, 2021). At its core, the SDGs represent a shared vision for a more equitable and prosperous world—one that depends on collective commitment, meaningful partnerships, and solidarity across sectors to create lasting, positive change (Blissman, n.d.; Wadhvani & Malpani, 2023).

Sustainability is a critical global concern, and higher education institutions (HEIs) play a significant role in preparing future generations to address environmental, social, and economic challenges. The integration of sustainability concepts in education is

crucial for promoting awareness and action toward sustainable development. However, the extent to which faculty members are knowledgeable, prepared, and willing to incorporate sustainability into their teaching remains a subject of interest. Faculty perceptions of sustainability initiatives in higher education reveal both opportunities and challenges. While arts and design faculty exhibit high confidence in teaching sustainability, they encounter barriers such as time constraints, limited resources, and knowledge gaps (Kang et al., 2024). Similarly, geography and environmental sustainability professors incorporate key sustainability competencies into their teaching, but often in a fragmented manner that does not fully align with best practices (Parry & Metzger, 2023). Faculty across disciplines acknowledge the importance of integrating sustainability into curricula but struggle with interdisciplinary implementation (McCunn et al., 2020). The challenges faculty face in sustainability education varies depending on their knowledge levels. Those with high sustainability knowledge often identify institutional accountability as a major barrier, whereas those with lower knowledge levels focus more on personal responsibility (Edem Holison, 2023). To enhance sustainability education, institutions must address these faculty-identified challenges by providing necessary resources, training, and opportunities for interdisciplinary collaboration. These efforts can provide more effective sustainability teaching and learning in higher education.

Recent studies have also examined the readiness of university faculty and student teachers to implement Education for Sustainable Development (ESD) through various approaches. Professional development programs based on problem-based learning (PBL) have been shown to improve teachers' readiness for ESD implementation, though institutional support remains crucial for large-scale change (Xiangyun Du et al., 2022). Specialized courses, such as the Implementation of Sustainable Development Goals in University Teaching (ImpSDGup), have successfully helped academics incorporate Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) methodologies into their teaching. The course utilizes the Training Model in Transformative Action for Sustainability (TMTAS), focusing on sustainability content, theoretical frameworks, and ESD teaching methodologies (Expósito & Sánchez, 2020). Student teachers' readiness for ESD implementation is influenced by factors such as gender, age, field of study, and exposure to ESD-related courses (Vukelić, 2022). Moreover, PBL as a pedagogical approach for ESD has demonstrated promise in transforming pre-service technology teachers' perceptions and behaviors regarding sustainability, critical citizenship, and their future roles as educators (Singh-Pillay, 2020). These findings emphasize the need to integrate ESD into teacher education programs and adopt innovative pedagogical strategies to enhance readiness for sustainable education.

However, despite the growing emphasis on sustainability at the institutional level, faculty engagement remains inconsistent, often due to limited training opportunities, lack of institutional support, and perceived difficulties in integrating sustainability across disciplines (Filho et al., 2020). Many educators recognize the importance of sustainability education but may struggle with incorporating relevant content into their courses due to knowledge gaps or the absence of clear implementation frameworks. Understanding faculty perceptions, including their readiness, challenges, and level of engagement, can provide critical insights into the effectiveness of sustainability initiatives within HEIs. A deeper exploration of these factors will help institutions identify barriers and develop strategies to support faculty in effectively embedding sustainability principles into their teaching practices.

This study explores faculty perceptions of sustainability initiatives in higher education, focusing on their knowledge, readiness to incorporate sustainability into their teaching, and the challenges they encounter. By understanding these factors, institutions can better support faculty in integrating sustainability into curricula. Additionally, this research explores faculty attitudes, experiences, and engagement with sustainability concepts to identify knowledge gaps, key influences on implementation, and practical strategies for strengthening sustainability education. The findings of this study will provide valuable insights for developing targeted faculty development programs, refining curriculum design, and improving institutional policies to promote sustainability literacy and its real-world application in academic settings. Enhancing faculty engagement in sustainability education will not only enrich student learning but also contribute to the broader goal of cultivating environmentally and socially responsible citizens.

2. MATERIALS AND METHODS

The study used a mixed-methods approach, integrating both surveys and interviews to explore faculty perceptions of sustainability initiatives in higher education. A total of 69 faculty members from various disciplines at Quezon City University in the Philippines participated in the study. Participants were drawn from the College of Education, College of Computer Studies, College of Engineering, and the College of Business Administration and Accountancy. The sample size was determined using a standard sample size calculator based on the total full-time faculty population of 92 as of October 2024, with a 95% confidence level, a 50% response distribution, and a 6% margin of error. While a 5% margin of error is commonly used, a 6% margin was considered acceptable given the relatively small population size. This sample represents approximately 75% of the total faculty population, providing a strong basis for data analysis and interpretation.

The study utilized purposive sampling, including faculty members who met the inclusion criterion of belonging to one of the four identified colleges. This approach ensured the participation of individuals with relevant academic backgrounds and potential engagement with sustainability-related themes in teaching. The research aimed to assess faculty understanding of sustainability concepts, their readiness to integrate these concepts into instruction, and the challenges they encountered at both institutional and personal levels. Data collection was conducted through online surveys, followed by in-depth interviews with selected faculty members to obtain a more comprehensive perspective. Quantitative data were analyzed using statistical methods, while qualitative responses were subjected to thematic analysis to identify common patterns and insights. The integration of these methods provided a comprehensive understanding of faculty perspectives and offered valuable findings to support the enhancement of sustainability education in higher education institutions.

3. RESULTS AND DISCUSSIONS

The study's findings will be presented in relation to the key research objectives. Preliminary results suggest variations in faculty knowledge and readiness levels across disciplines. Identified challenges include a lack of institutional support, limited access to resources, and disciplinary constraints. On the other hand, faculty members who actively engage with sustainability initiatives report greater confidence in integrating these concepts into their teaching.

The discussion will explore how HEIs can enhance faculty support systems, provide professional development opportunities, and create interdisciplinary collaborations to promote sustainability education.

Figure 1 shows that majority of the respondents were male faculty members followed by female faculty members, while some prefer not to say.

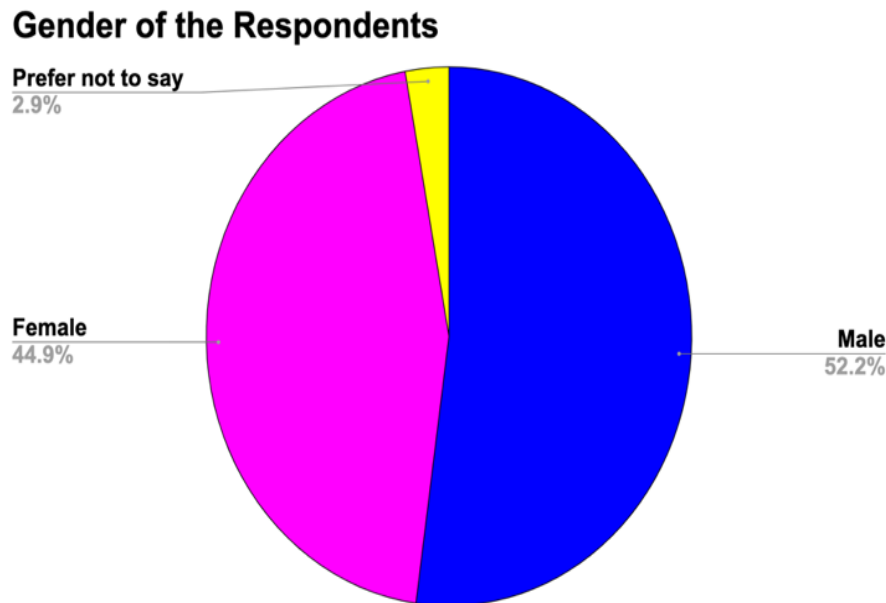


Figure 1. Gender of the Respondents

Figure 2 shows that the majority of respondents came from the College of Business Administration and Accountancy with 25 responses, followed by the College of Computer Studies with 24 responses, the College of Engineering with 12 responses, and the College of Education with 8 responses.

Colleges

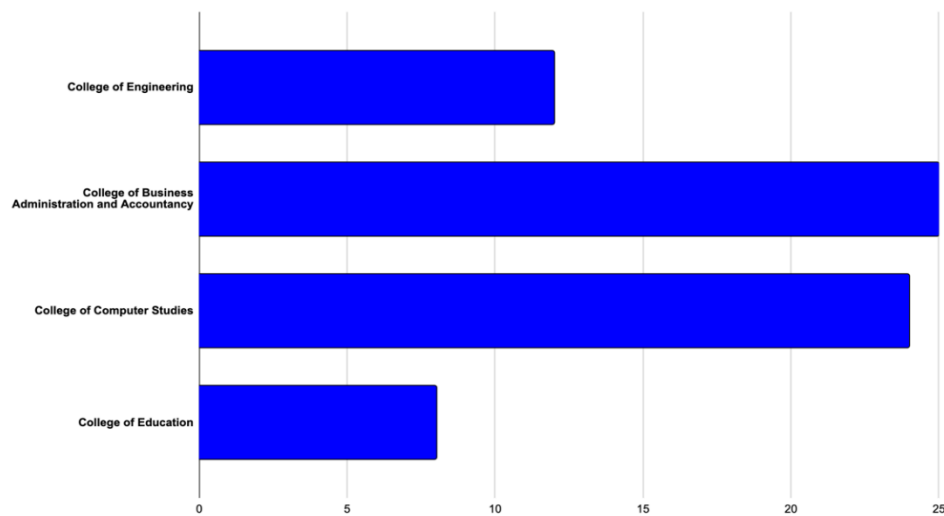


Figure 2. Respondents From Different Colleges

Figure 3 illustrates the respondents' familiarity with environmental sustainability and urban agriculture concepts. The majority across all colleges reported being either 'Somewhat Familiar' or 'Very Familiar' with these topics. However, it is noticeable that approximately 50% of respondents from the College of Computer Studies indicated they are 'Not Familiar At All,' highlighting a significant gap in awareness within that group."

Environmental Sustainability and Urban Agriculture Concepts Familiarity

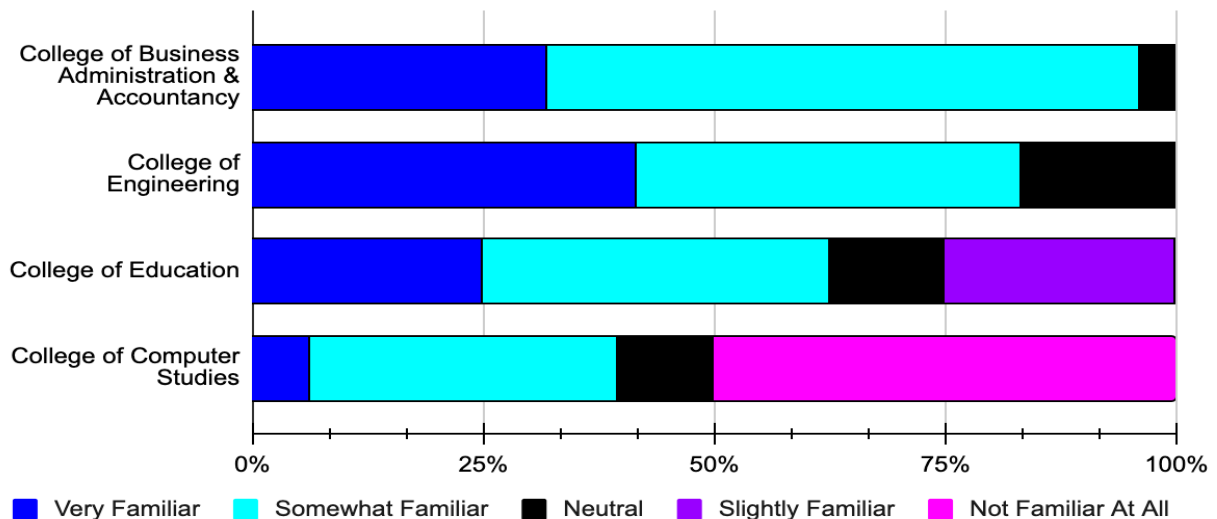


Figure 3. Environmental Sustainability and Urban Concept Familiarity

Figure 4 presents the responses to the question on which sustainability topics students believe are most important to learn within their subject areas. The results indicate that 'Green Technologies & Innovations,' 'Climate Change and its Impact,' and 'Sustainable Development Goals' (SDGs) are consistently recognized as top priorities across all colleges. These topics appear to be the most emphasized concerns in sustainability education among the different disciplines

Most Important Sustainability Topics Students Should Learn

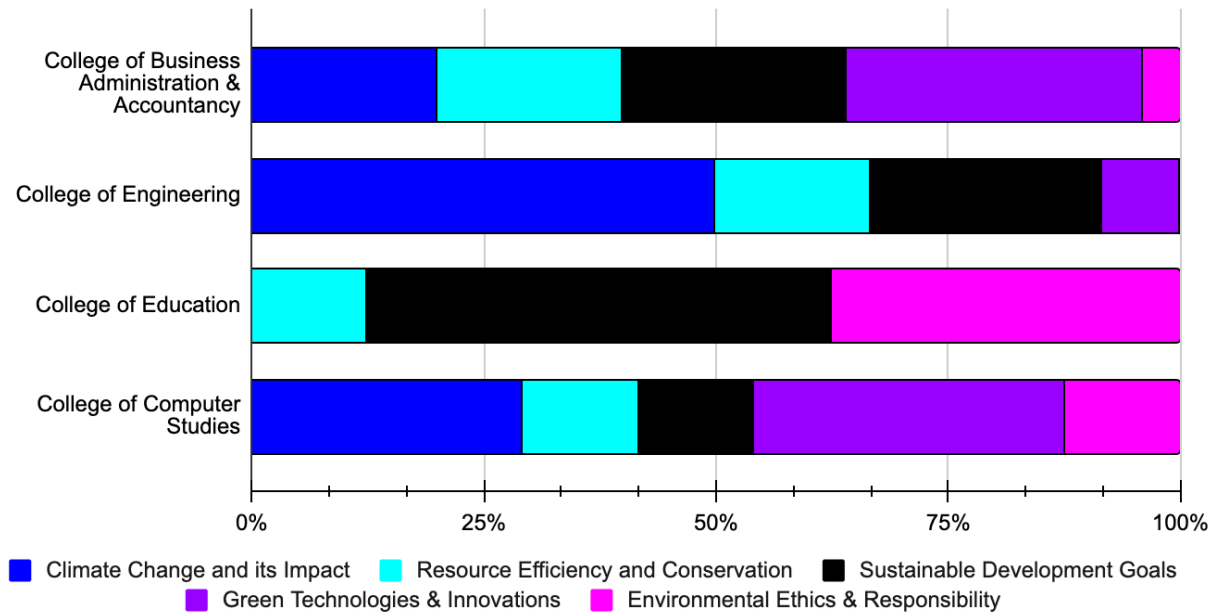


Figure 4. Most Important Sustainability Topics Students Should Learn

Figure 5 illustrates the respondents' level of preparedness in teaching topics related to environmental responsibility or urban agriculture. The results show that across all colleges, the majority of respondents consider themselves 'Somewhat Prepared.' This trend is consistent among all disciplines, indicating a general sense of moderate confidence in addressing these topics in their teaching.

Preparedness in teaching topics related to environmental responsibility or urban agriculture

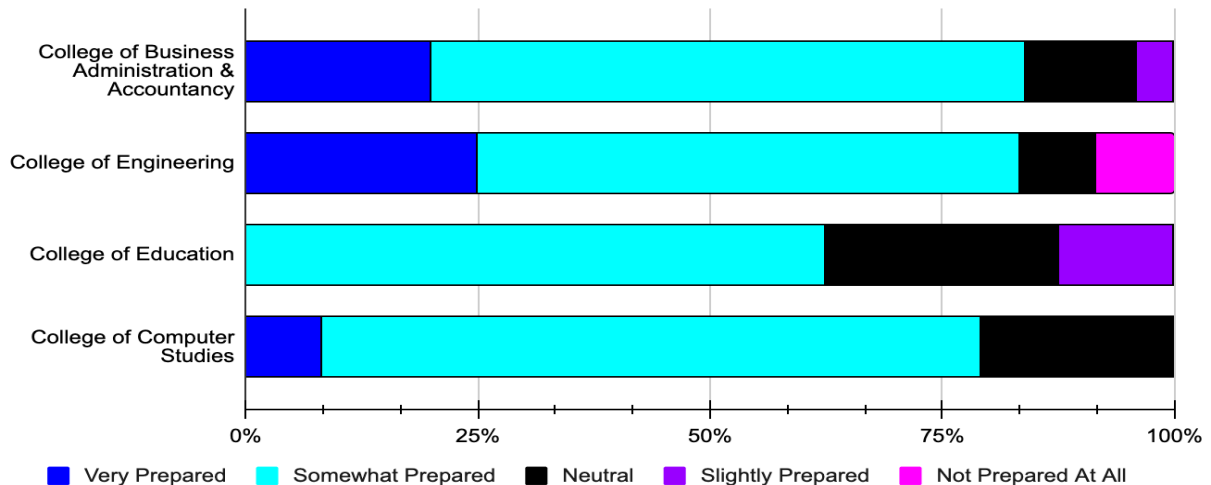


Figure 5. Faculty Preparedness in Teaching Topics Related to Environmental Responsibility or Urban Agriculture

Figure 6 shows that project-based learning—engaging students in hands-on projects addressing real-world sustainability challenges—and fieldwork or community engagement are the teaching methods most respondents believe to be effective for incorporating sustainability into the curriculum. These preferences are consistent across most colleges. However, the College of

Computer Studies stands out by showing a stronger preference for digital tools and resources over fieldwork and community engagement.

Effective teaching methods for incorporating sustainability in the curriculum

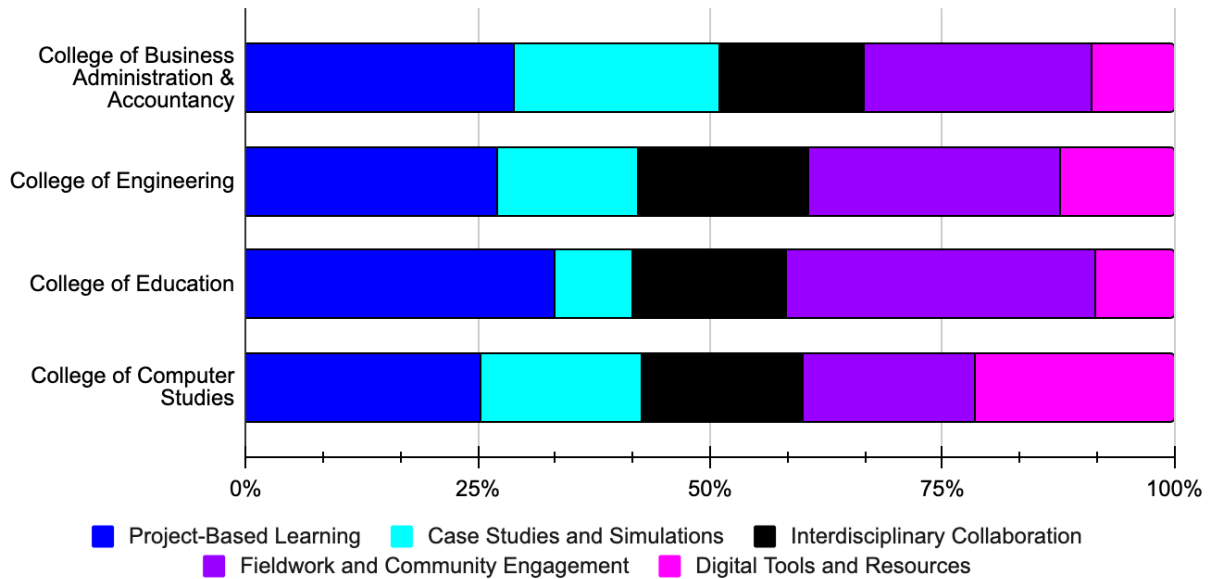


Figure 6. Effective teaching methods for incorporating sustainability in the curriculum

Figure 7 show that the majority of the colleges consider limited resources as the primary challenge in integrating sustainability topics into the curriculum. However, the College of Engineering identifies lack of time as the main hindrance to implementing such initiatives.

Challenges in Integrating Sustainability Topic

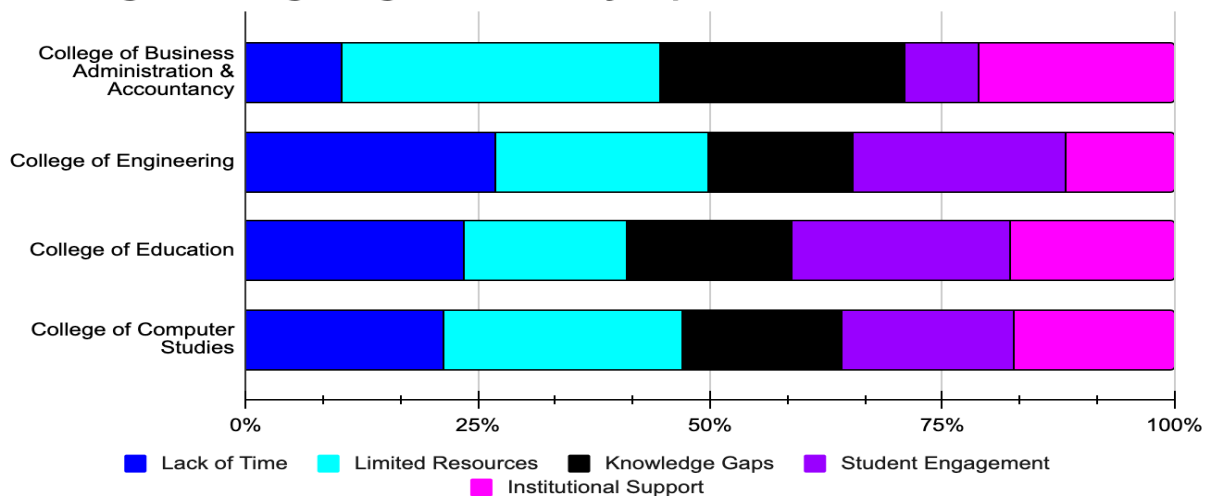


Figure 7. Challenges in Integrating Sustainability Topic

Figure 8 illustrates that waste management is the most commonly identified environmental action that can be integrated into class discussions across most colleges. However, the College of Computer Studies leans more towards incorporating sustainable design

into their curriculum.

Possible Environmental Actions or Practices that can be Linked in Class Discussions

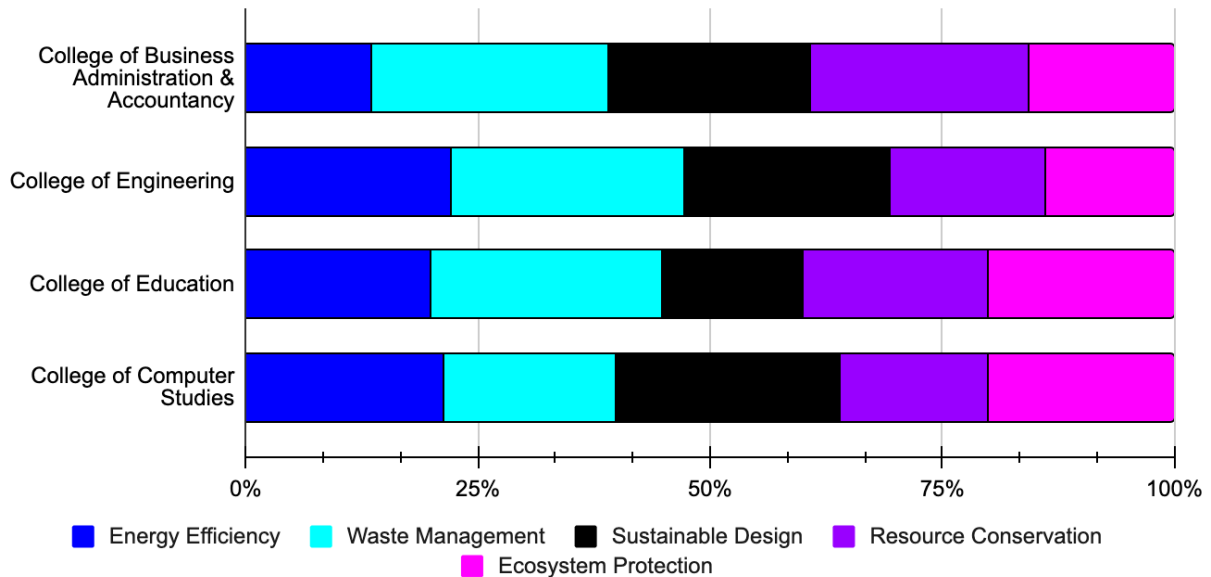


Figure 8. Possible Environmental Actions or Practices that can be Linked in Class Discussions

Figure 9 shows that all respondents from various colleges indicated that workshops and seminars would enhance their confidence in teaching sustainability concepts. Notably, in the College of Computer Studies, an equal percentage of respondents preferred both workshops and seminars, as well as digital tools and online resources, as effective means to improve their teaching confidence.

Trainings or resources that can help faculty members feel more confident in teaching sustainability concepts

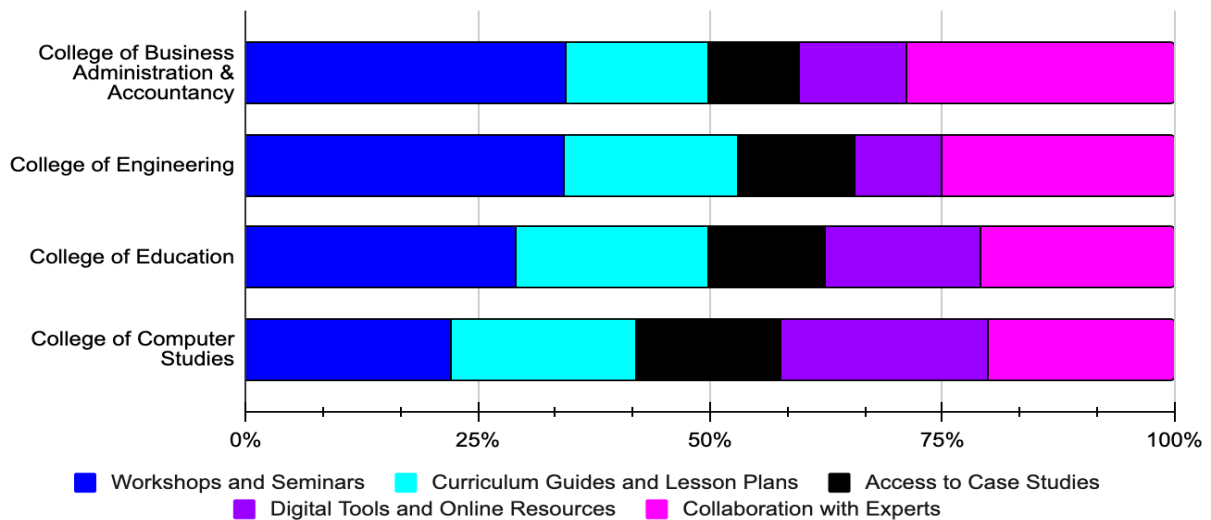


Figure 9. Trainings or resources that can help faculty members feel more confident in teaching sustainability concepts

Figure 10 shows that most colleges believe the best way to align the new curriculum with existing course objectives and learning

outcomes is to integrate sustainability gradually. However, the College of Engineering is more inclined to align it with core competencies.

Respondents' Views on How to Best Align the New Curriculum with Existing Course Objectives and Learning Outcomes

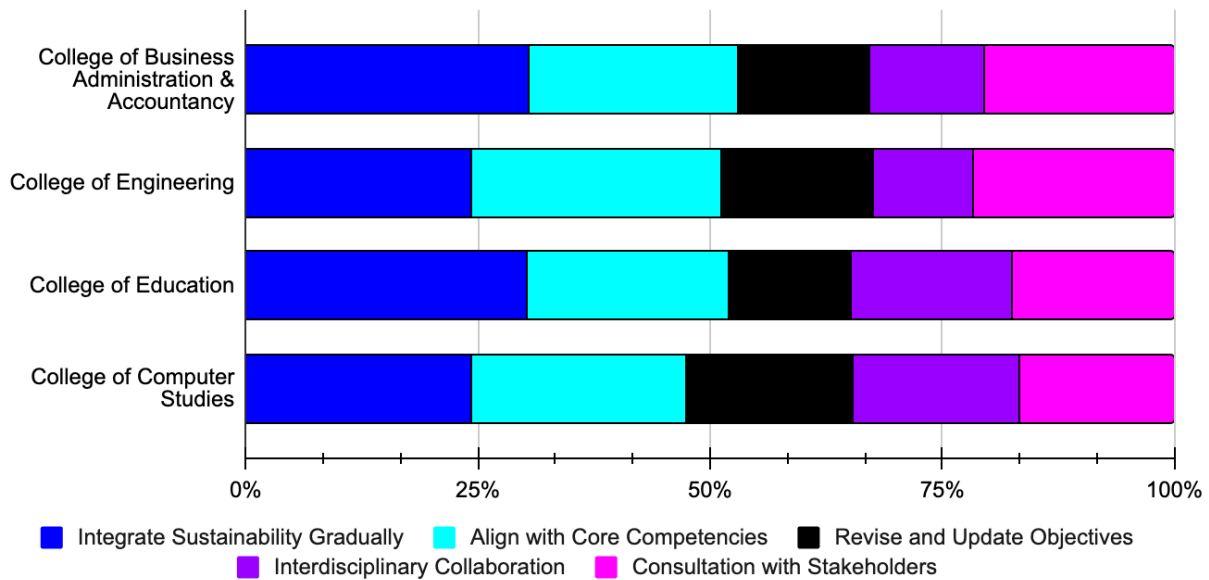


Figure 10. Respondent's view on how to best align the new curriculum with existing course objectives and learning outcomes

Figure 11 shows the results of a survey in which faculty members were asked about the potential student response to sustainability topics in their subjects. The majority of colleges believe students will be somewhat engaged in the discussion. However, the College of Business Administration and Accountancy is more optimistic, expecting students to be highly engaged. No faculty members indicated that students would be resistant to sustainability topics.

Faculty Insights on Student Engagement with Sustainability Topics in their Subjects

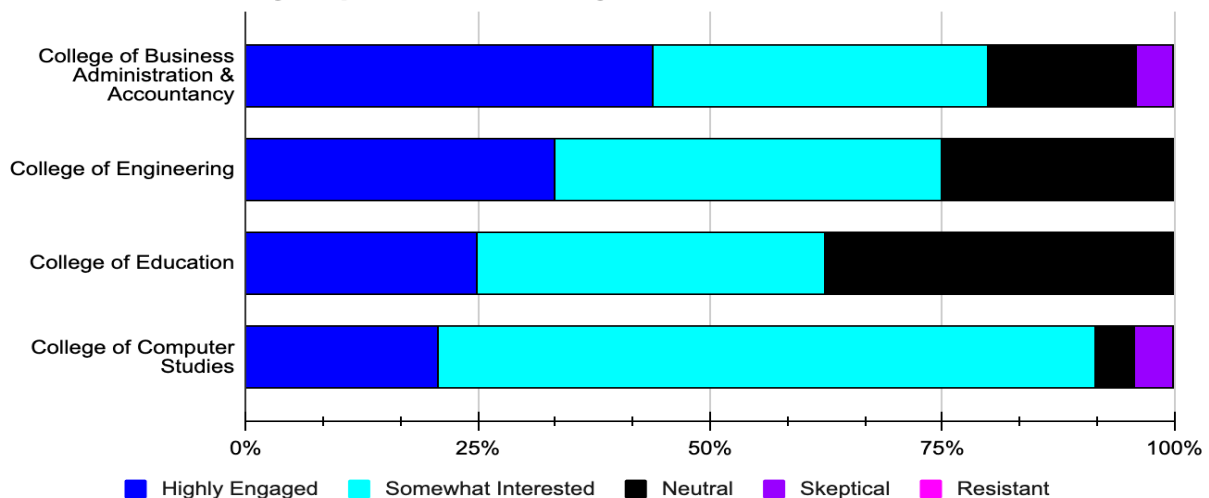


Figure 11. Faculty Insights on Student Engagement with Sustainability Topics in their Subjects

Figure 12 shows that the majority of respondents see themselves primarily as educators, teaching and integrating environmental

responsibility topics into the curriculum. This is followed by their role as mentors, guiding students in applying sustainability principles to their projects and daily lives in fostering environmental stewardship.

Faculty Perspectives on Their Role in Environmental Responsibility Among Students

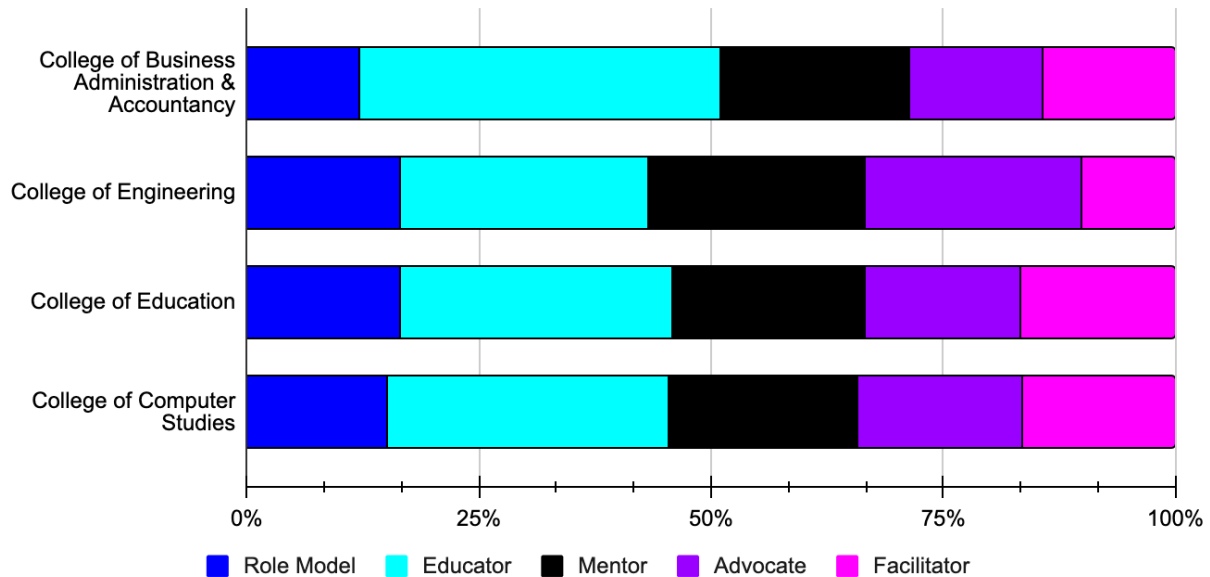


Figure 12. Faculty perspectives on their role in environmental responsibility among students

4. CONCLUSION

The findings of this study provide valuable insights into the current state of sustainability education within higher education institutions (HEIs). Overall, faculty members across various disciplines show a general understanding and engagement with sustainability topics, although there are notable variations in their familiarity, preparedness, and resources available to them. The majority of respondents view themselves as educators, integrating sustainability into their curriculum, with some taking on the role of mentors to guide students in applying sustainability principles to real-world projects.

While most colleges recognize the importance of incorporating sustainability, challenges such as limited resources, lack of institutional support, and time constraints persist. Notably, certain disciplines, such as the College of Computer Studies, exhibit unique preferences and challenges, such as a stronger inclination towards digital tools over fieldwork or community engagement.

Faculty members agree that workshops, seminars, and other professional development opportunities are essential to building confidence in teaching sustainability topics. There is also consensus on the need for gradual integration of sustainability into existing curricula, with some institutions advocating for alignment with core competencies.

Despite these challenges, faculty who are actively engaged with sustainability initiatives report greater confidence and readiness to incorporate these topics into their teaching. The study suggests that HEIs can enhance faculty support systems through targeted professional development, fostering interdisciplinary collaborations, and providing adequate resources, thus strengthening sustainability education across disciplines.

To address these challenges, HEIs should prioritize faculty development by offering structured training programs that equip educators with the skills and knowledge needed to integrate sustainability into their teaching. Providing incentives, such as research funding or professional development opportunities, can further encourage faculty to incorporate sustainability concepts into their courses. Promoting interdisciplinary collaboration can also enhance sustainability education by allowing faculty from different fields to exchange ideas and develop innovative teaching approaches. Additionally, ensuring easy access to high-quality teaching materials and resources can help faculty confidently embed sustainability topics into their curricula.

By strengthening institutional support, investing in faculty training, and fostering a culture of sustainability, HEIs can better equip educators to embed these principles into their teaching. This, in turn, will help shape future professionals who are prepared to tackle global sustainability challenges and contribute to a more environmentally conscious society.

This study highlights the crucial role faculty perceptions play in shaping sustainability initiatives within HEIs. The findings emphasize the need for enhanced institutional support, targeted training programs, and a strong culture of sustainability within academic institutions. Based on these insights, the following recommendations are proposed:

1. Developing faculty training programs focused on sustainability education.
2. Offering institutional incentives to encourage the integration of sustainability into curricula.
3. Promoting interdisciplinary collaboration to strengthen sustainability initiatives.
4. Improving access to sustainability-related teaching resources.

By addressing these factors, HEIs can better support faculty in integrating sustainability concepts into their teaching, ultimately fostering a more sustainable academic environment..

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This research stands not only as a scholarly endeavor but also as a testament to the collaborative and nurturing environment that Quezon City University fosters among its faculty and staff.

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