Challenges of Implementing Green Entrepreneurship Education in the Classroom: An Exploratory Study

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ABSTRACT

Green Entrepreneurship Education (GEE) plays a strategic role in fostering students' Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB) in support of sustainable development. However, the classroom-level implementation of GEE in higher education remains challenging. This study aims to explore the initial conditions of green entrepreneurship learning, classroom implementation challenges, and learning development needs in the Bioentrepreneurship Study Program. An exploratory qualitative approach was employed, with data collected through in-depth interviews with lecturers and students. The data were analyzed using the Miles and Huberman interactive model, including data reduction, data display, and conclusion drawing. The findings reveal that lecturers perceive green entrepreneurship as highly urgent; However, learning practices remain predominantly theoretical, with limited experiential learning, insufficient facilities, and weak institutional support. Key barriers to the formation of students' GEI and GEB include limited practical facilities, low entrepreneurial self-efficacy, lack of mentoring, capital constraints, and weak industry networks. These conditions reinforce the intention–behavior gap between students' green entrepreneurial intentions and actual behaviors. Based on these findings, this study recommends the development of an experience-based green entrepreneurship learning model that integrates project-based learning, structured mentoring, and institutional support through applied laboratories and industry collaboration to strengthen the translation of GEI into GEB. This study highlights the need to develop a more applicable, contextual, and experience-based green entrepreneurship learning model to strengthen GEI and GEB in higher education.

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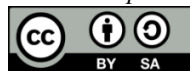
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Challenges of Implementing Green Entrepreneurship Education in the Classroom: An Exploratory Study of the Bioentrepreneurship Study Program

1. Introduction

Green entrepreneurship is increasingly recognized as a strategic approach to sustainable development, balancing economic growth with environmental protection. Green entrepreneurship emphasizes environmentally friendly innovation, resource efficiency, and the application of circular economy principles, which have been proven to support the achievement of global targets such as SDGs 8, 11, and 12 (Alwakid et al., 2021; Sreenivasan & Suresh, 2023). Universities are crucial actors because they serve as centers of knowledge, incubate innovation, and shape sustainable values for the younger generation. Higher education is increasingly recognized as a key element in facilitating the transformation toward a greener society by developing sustainability-based entrepreneurial competencies (Nguyen et al., 2025; Žalėnienė & Pereira, 2021). The success of this transformation depends heavily on the quality of classroom learning, particularly on how green entrepreneurship education is implemented in everyday learning practices (Rachmawati & Sholekhah, 2025). The classroom is the primary arena for the formation of students' entrepreneurial mindsets, attitudes, and competencies, so that the various dynamics and learning obstacles within it can influence the overall achievement of green entrepreneurship education (Kavishwar, 2024).

The high urgency of green entrepreneurship is not matched by relatively low participation rates among green entrepreneurs across countries. Numerous studies have shown that developing countries face significant obstacles, including a lack of regulatory support, limited access to green technology, and a weak sustainable entrepreneurial ecosystem (Makki et al., 2020; Phani et al., 2024). In developed regions such as the European Union, challenges including a conservative business culture and limited access to green finance remain significant (Misztal & Kowalska, 2023; Vasilescu et al., 2023). This situation indicates a global gap between sustainability commitments and human resource readiness to implement them effectively.

Students have great potential to become agents of environmental change through green entrepreneurship. This is reflected in Green Entrepreneurial Intention (GEI). GEI refers to an individual's psychological intention to start an environmentally friendly business. The formation of GEI does not always align with Green Entrepreneurial Behavior (GEB), which refers to actual behavior in developing or implementing sustainable business practices (Amankwah & Sesen, 2021). Research identifies an intention-behavior gap: students have strong intentions but are unable to translate them into concrete actions. This gap is influenced by factors such as low self-efficacy, lack of practical experience, capital constraints, and limited institutional support (Dixit et al., 2025; Hussain et al., 2021).

The implementation of green entrepreneurship curricula in higher education also plays a crucial role. Studies show that integrating sustainability into the curriculum can increase ecological awareness, influence attitudes, and strengthen students' confidence in engaging in green business (Fatoki, 2024; Valencia-Arias et al., 2025). However, some universities still face challenges such as inconsistent curricula, a lack of hands-on learning, and limited supporting facilities such as green entrepreneurship laboratories or business incubators (Paiva et al., 2023; Rosário & Raimundo, 2024). This challenge highlights the persistent gap between curriculum intentions and classroom-level implementation.

Recent research emphasizes the importance of innovative pedagogical approaches in strengthening GEI and GEB. Experiential learning models, project-based learning, green business simulations, and gamification approaches have been shown to enhance students' creativity, opportunity identification skills, and self-efficacy (Duong Thi Kim, 2019; Librado-

Gonzalez et al., 2024). Technological support, such as e-learning and artificial intelligence, in the digital era also strengthens students' abilities to develop sustainable business strategies (Li et al., 2023; Mohd Razalli et al., 2024). However, despite this growing pedagogical consensus, empirical evidence remains limited in explaining how such approaches are enacted or constrained within actual classroom contexts. Currently, there are limited empirical studies specifically addressing the challenges of classroom learning in green entrepreneurship education, particularly in the context of bioentrepreneurship-based study programs.

Based on these conditions, an in-depth exploration of the initial conditions of green entrepreneurship learning, classroom implementation challenges, and learning development needs in the Bioentrepreneurship Study Program is necessary. While previous studies have predominantly employed quantitative approaches to examine Green Entrepreneurship Education (GEE), Green Entrepreneurial Intention (GEI), and Green Entrepreneurial Behavior (GEB), these approaches tend to focus on the strength of relationships between variables and often overlook the lived classroom realities that underlie these relationships.

Specifically, quantitative findings are limited in explaining how lecturers and students experience and interpret institutional constraints, instructional practices, and psychological barriers in everyday learning processes, and how these factors interact to shape the intention–behavior gap in green entrepreneurship.

This study offers a novel contribution by providing rich qualitative insights into classroom-level dynamics, revealing context-specific mechanisms, such as fragmented curriculum integration, theory-dominated pedagogy, and informal coping strategies adopted by students, that cannot be adequately captured by numerical indicators alone.

Accordingly, this study aims to examine lecturers' perceptions, students' experiences, institutional support, and ongoing learning practices as a basis for developing a more contextual, applicable, and experience-based green entrepreneurship learning model capable of bridging the GEI–GEB gap in higher education (Álvarez-Vanegas et al., 2024; Yu et al., 2024).

This study makes a theoretical contribution by extending the Green Entrepreneurship Education (GEE) literature through an exploratory classroom-level analysis that explicitly links instructional practices, institutional support, and psychological barriers to the intention-behavior (GEI-GEB) gap. Unlike previous studies that primarily employ quantitative approaches, this study provides contextualized qualitative insights from a bioentrepreneurship program, offering a micro-level understanding of how classroom dynamics shape green entrepreneurship outcomes. Based on the SLR and the identified research gaps, this study developed a conceptual framework that describes the relationship between the implementation of Green Entrepreneurship Education (GEE) at the classroom level with the formation of Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB), which is mediated by the intention-behavior gap and influenced by various psychological and institutional barriers. The study's conceptual framework is presented in Figure 1.
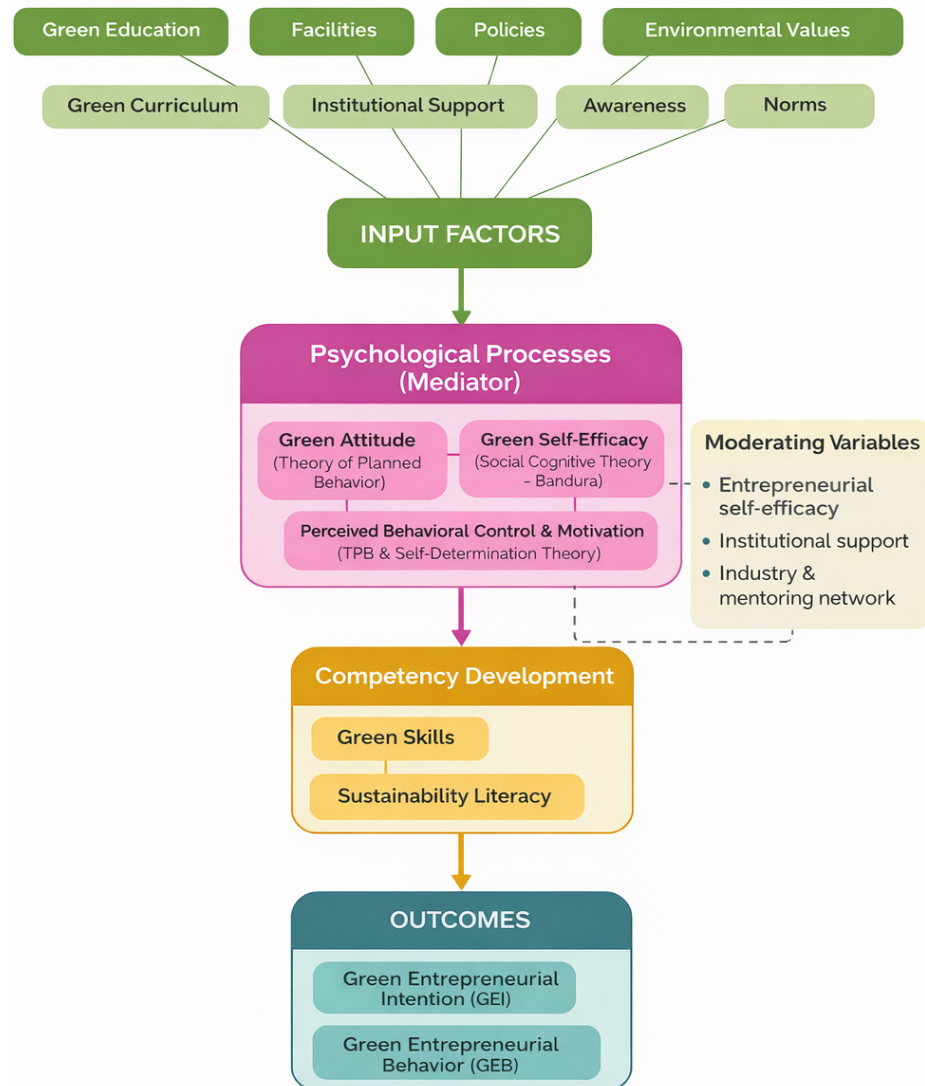
Figure 1. Conceptual Framework for Synthesis of the Literature (SLR) on GEE

2. Method

Research Design

This study employs an exploratory qualitative research design to examine classroom learning challenges in the implementation of Green Entrepreneurship Education (GEE) and their influence on the formation of students' Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB). This design was selected to capture participants' experiences, perceptions, and meanings in depth, rather than to test hypotheses or establish causal relationships. The qualitative approach enables a contextual understanding of how green entrepreneurship learning is practiced and experienced within the bioentrepreneurship setting.

Location, Time, and Subject of Research

The research was conducted in the Bioentrepreneurship Study Program at a higher education institution, during the 2024/2025 academic year. This program was selected because it directly relates to the implementation of green entrepreneurship concepts in teaching and learning activities. The research subjects consisted of two main groups:

1. Lecturers (n=2), who were involved in teaching entrepreneurship-related courses, to explore perceptions of learning design, challenges in implementing GEE, institutional support, and strategies for strengthening sustainability values in learning.

2. Students (n=5), who had participated in green entrepreneurship-related learning activities were asked to reveal their learning experiences, perceptions of GEE, obstacles encountered during the learning process, and the dynamics of GEI and GEB formation. Subject selection was carried out purposively, with consideration of their direct involvement in the green entrepreneurship learning process. Data collection continued until redundancy in the data and thematic saturation were achieved, as no new relevant themes emerged from subsequent interviews.

Data collection technique

Data were collected through in-depth semi-structured interviews conducted in two complementary modes: synchronous online interviews via Zoom and asynchronous written responses via Google Forms. This combination was applied to ensure data completeness and participant accessibility. Zoom-based interviews were conducted with participants who were available for real-time interaction, allowing for deeper probing of responses and clarification of emerging themes related to learning design, classroom practices, institutional support, and barriers to the formation of GEI and GEB. Each Zoom interview lasted approximately 30–45 minutes, was audio-recorded with participants' informed consent, and subsequently transcribed verbatim. For participants who were unable to attend the Zoom interviews due to time constraints or technical limitations, data were collected through Google Forms. The Google Form included open-ended questions aligned with the interview guide used in the Zoom sessions, enabling participants to provide reflective, detailed written responses. This approach ensured data consistency across collection modes. An interview guide served as the primary research instrument, consisting of open-ended questions that addressed learning experiences, perceptions of green entrepreneurship education, challenges encountered during learning, institutional support, and the dynamics of Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB). Field notes were also maintained during Zoom interviews to capture contextual information and researcher reflections.

Data Analysis Techniques

Data analysis in this study was conducted using the Miles and Huberman interactive model, which includes three main stages: data reduction, data presentation, and conclusion drawing and verification. In the data reduction stage, interview results were selected, coded, and grouped into main themes relevant to the research focus, particularly those related to classroom learning challenges, Green Entrepreneurship Education (GEE) learning practices, and factors that shape and hinder students' Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB). Furthermore, during the data presentation stage, the coding results were organized into a thematic matrix and a structured narrative to facilitate the identification of patterns, relationships among categories, and the dynamics of the green entrepreneurship learning process. The final stage was conclusion-drawing and verification, which was carried out through repeated interpretation of the findings and testing the data's validity by triangulating sources between lecturers and students, as well as re-clarifying with informants, if necessary, to obtain valid and scientifically accountable conclusions.

3. Research Findings

Initial Conditions of Green Entrepreneurship Learning

The interview results indicate that lecturers have a positive perception of the urgency of green entrepreneurship education. They view green entrepreneurship not only as a means of developing entrepreneurial skills but also as a way of preparing students to become agents of change capable of addressing environmental issues through business activities. One lecturer explicitly stated:

"Green entrepreneurship is important because students should understand that business can also be a solution to environmental problems, not only profit-oriented." (Lecturer 1)

Despite this positive perception, the paradigm shift toward green entrepreneurship at the study program level has not been fully realized. The integration of sustainability values remains limited to specific courses, such as Bioentrepreneurship, Bioindustry, and Waste Management, while other general courses have not consistently incorporated ecological perspectives. This concern was reflected by another lecturer:

"So far, sustainability is only emphasized in certain courses. In other courses, it has not yet become a shared perspective." (Lecturer 2)

This finding indicates that green entrepreneurship education has not yet been implemented holistically across the curriculum.

In terms of learning practices, entrepreneurship education is still dominated by theoretical approaches. Both lecturers and students reported that limited facilities and learning conditions restrict opportunities for hands-on practice. A student described this condition as follows:

"Most of the learning is still theoretical. We rarely can practice because there is no laboratory or space to develop products." (Student 2)

Project-based assignments are often completed independently by students, with minimal guidance and limited exposure to real-world entrepreneurial contexts. Consequently, the learning experience is perceived as less engaging.

From an institutional perspective, campus support for green entrepreneurship learning is perceived as limited. Support is mainly reflected in curriculum documents and lesson plans, but there are no concrete institutional mechanisms. One lecturer emphasized:

"Institutional support is mostly in the form of documents. There are no incubators or applied laboratories that truly support green entrepreneurship activities." (Lecturer 1)

Overall, these findings suggest that although awareness of green entrepreneurship education exists, its implementation remains at an early stage.

Obstacles Affecting the Formation of Green Entrepreneurial Intention and Behavior

The findings reveal that obstacles influencing the formation of Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB) are multidimensional, encompassing structural, instructional, and psychological aspects.

From the lecturers' perspective, the lack of practical facilities such as laboratories and production spaces constitutes a major structural barrier. As stated by one lecturer:

"Without adequate facilities, students cannot experience the real process of developing and testing green products." (Lecturer 2)

Students (n = 5) also reported various challenges, including limited access to capital, insufficient mentoring, uncertainty about how to initiate green business activities, and inadequate product-promotion skills. One student clearly expressed this difficulty:

"We are interested in green business, but we are confused about where to start because there is no mentoring and no clear guidance." (Student 5)

These challenges contribute to psychological barriers, such as doubt and low entrepreneurial self-confidence. Another student highlighted the gap between theory and practice:

"We learn the concepts in class, but when we try to apply them, it feels difficult because there is no direct practice." (Student 1)

Furthermore, limited institutional support and weak industry collaboration hinder the translation of entrepreneurial intentions into actual entrepreneurial behavior. These conditions collectively indicate the presence of an intention–behavior gap in green entrepreneurship learning.

Needs and Expectations for Green Entrepreneurship Learning Development

The findings show that both lecturers and students express strong expectations for a more applicable, context-specific green entrepreneurship learning model. Lecturers emphasized the importance of learning approaches that prioritize real-life projects, environmental problem-

solving, and collaboration with micro, small, and medium enterprises (MSMEs) or bio-based industries. One lecturer noted:

"Students need to be involved in real projects and collaborate with external partners so they can experience green entrepreneurship in practice." (Lecturer 1)

Students emphasized the need for more practical learning opportunities, including access to laboratories and equipment, as well as structured mentoring. They expressed interest in developing environmentally friendly product prototypes through guided project activities. As one student stated:

"We want to develop real eco-friendly products, but we need facilities and guidance to make it possible." (Student 3)

In addition, both lecturers and students highlighted expectations for stronger integration of sustainability values across courses, cross-disciplinary collaboration, and the use of digital technologies to support the development and validation of green business ideas. Overall, these findings demonstrate a clear relationship among initial learning conditions, encountered obstacles, and expectations for the development of green entrepreneurship learning, as summarized in Figure 2.
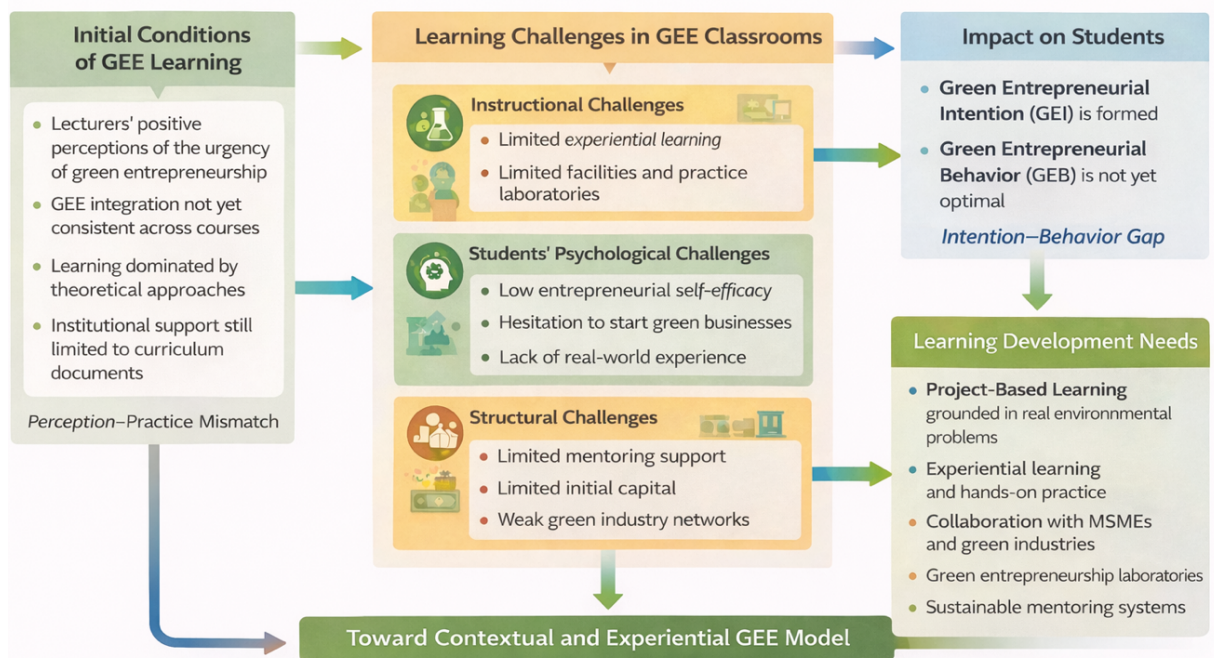
Figure 2. Challenges of Implementing Green Entrepreneurship Education in the Classroom

4. Discussion

This section discusses the research findings by interpreting them in relation to existing literature on Green Entrepreneurship Education (GEE). The discussion follows the same thematic structure as the research findings to ensure coherence, while emphasizing analytical interpretation rather than repeating empirical results.

Initial Conditions of Green Entrepreneurship Learning

The findings indicate that positive perceptions of lecturers toward green entrepreneurship education constitute a critical foundational condition for sustainability-oriented learning. This condition reflects the growing recognition of higher education institutions as key agents of green innovation and green entrepreneurship, in which lecturers play a strategic role in shaping students' sustainability values and entrepreneurial mindsets (Nguyen et al., 2025). However, the persistence of fragmented curriculum integration suggests that positive perceptions alone are insufficient to drive systemic pedagogical change.

The limited diffusion of sustainability values across courses highlights a structural

weakness in curriculum Design. When green entrepreneurship is confined to specific subjects rather than embedded holistically, students are exposed to sustainability as a discrete topic rather than a guiding framework. This pattern has been widely identified as a common challenge in higher education, particularly in the absence of standardized green curricula and cross-course alignment (Sirelkhatim & Gangi, 2015; Valencia-Arias et al., 2025). As a result, students may develop partial understanding without achieving integrative sustainability competencies.

Furthermore, the dominance of theoretical instructional approaches reflects constraints related to infrastructure and learning conditions. The lack of experiential learning opportunities limits students' engagement with real-world environmental and entrepreneurial challenges. Prior studies emphasize that experiential learning is essential for fostering meaningful entrepreneurial knowledge, particularly in sustainability contexts that require applied problem-solving and innovation (Duong Thi Kim, 2019; Librado-Gonzalez et al., 2024). These conditions suggest that the initial readiness of green entrepreneurship learning remains conceptual rather than operational.

From an institutional perspective, lecturers assessed that campus support is still limited to the development of curriculum documents and RPS (Lesson Plans). There are no specific policies that provide space for the development of a green entrepreneurship ecosystem, such as incubators, applied laboratories, or sustainable industry partnerships. This overview indicates that while there is perceived readiness, in terms of practice and structural support, study programs are still in the early stages of developing green entrepreneurship learning. This finding aligns with research stating that support from higher education institutions is a crucial determinant of GEI and GEB, particularly through the provision of green entrepreneurship facilities, policies, and ecosystems (Álvarez-Vanegas et al., 2024; Shabeeb Ali et al., 2023).

Obstacles Affecting the Formation of Green Entrepreneurial Intention and Behavior

The emergence of multidimensional barriers underscores that the formation of Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB) is shaped by more than individual motivation. Structural constraints, particularly the absence of practical facilities and applied learning spaces, significantly weaken students' opportunities to engage in authentic entrepreneurial processes. The literature consistently highlights that access to facilities and real-world practice is a critical external factor influencing the effectiveness of green entrepreneurship education (Li et al., 2023; Yu et al., 2024).

Psychological barriers further compound these structural limitations. Limited mentoring, insufficient capital exposure, and uncertainty in initiating green ventures undermine students' entrepreneurial self-efficacy. This is particularly consequential given that self-efficacy has been identified as one of the strongest predictors of GEI and a key mechanism through which intention is translated into behavior (Chen & Wang, 2025; Man Seong et al., 2025). Without supportive learning environments, students' confidence in their ability to implement green business ideas remains fragile.

These combined barriers reinforce the intention–behavior gap observed in green entrepreneurship education. Although students may demonstrate awareness and interest in environmentally friendly entrepreneurship, the lack of institutional support, industry networks, and applied learning opportunities inhibits behavioral enactment. This phenomenon aligns with broader findings in higher education research, particularly in developing countries, where systemic and policy-related constraints often impede the transformation of entrepreneurial intentions into concrete actions (Amankwah & Sesen, 2021; Dixit et al., 2025; Ip, 2024). The persistence of theory–practice misalignment further exacerbates this gap (Cai et al., 2022; Nițu-Antonie et al., 2022).

Needs and Expectations for Green Entrepreneurship Learning Development

The identified needs and expectations point toward a clear direction for strengthening green entrepreneurship learning. The strong emphasis on project-based learning (PjBL) reflects

a demand for pedagogical approaches that enable students to engage directly with environmental problems and entrepreneurial practice. Empirical evidence supports PjBL as an effective strategy for enhancing GEI and GEB, as it provides concrete experiences and facilitates the identification of green business opportunities (Cai et al., 2022; Librado-Gonzalez et al., 2024).

The expectation for increased access to laboratories, mentoring, and industry collaboration further underscores the importance of experiential and ecosystem-based learning. International studies demonstrate that student engagement and entrepreneurial competence improve significantly when learning incorporates hands-on practice, green business simulations, and community-based sustainability activities (Duong Thi Kim, 2019; Sumarmi et al., 2024). These elements are particularly relevant in bioentrepreneurship contexts that rely on applied experimentation and product development.

Moreover, the literature highlights the importance of strengthening students' ecological values and environmental identity as foundational drivers of sustainable entrepreneurial behavior (Atienza-Barba et al., 2025). Explicit integration of sustainability values across curricula (Valencia-Arias et al., 2025), cross-disciplinary and industry collaboration (Atienza-Barba et al., 2025; Kurtsal et al., 2024), and the strategic use of digital technologies for green business validation (Li et al., 2023; Mohd Razalli et al., 2024) collectively represent key components of an effective green entrepreneurship learning model.

Overall, the discussion confirms that addressing the intention–behavior gap in green entrepreneurship education requires systemic pedagogical reform rather than isolated instructional adjustments. As synthesized in Figure 2, the interaction between initial learning conditions, structural barriers, and unmet learning needs highlights the urgency of developing integrated, experiential, and institutionally supported green entrepreneurship learning models.

Implications of the Findings

The findings of this study offer several important implications for advancing Green Entrepreneurship Education (GEE) in higher education, particularly in bioentrepreneurship-related programs.

Theoretical Implications

This study reinforces the presence of an intention–behavior gap in green entrepreneurship education. It extends existing literature by emphasizing the role of pedagogical Design and institutional ecosystems in shaping the transition from Green Entrepreneurial Intention (GEI) to Green Entrepreneurial Behavior (GEB). Rather than viewing GEI and GEB solely as outcomes of individual psychological factors, the findings suggest that they are co-produced through the interaction of learning approaches, experiential opportunities, and institutional support. This perspective contributes to green entrepreneurship models by integrating structural and pedagogical dimensions as key explanatory factors.

Pedagogical Implications

Pedagogically, the findings indicate that theory-dominated entrepreneurship instruction is insufficient to foster green entrepreneurial behavior. Learning models should prioritize experiential and project-based approaches that engage students in real environmental problem-solving, green product development, and market interaction. Structured mentoring and iterative feedback are essential to enhance entrepreneurial self-efficacy and opportunity recognition, ensuring that sustainability values are translated into practice rather than remaining conceptual.

Institutional and Policy Implications

At the institutional level, curriculum integration must be supported by concrete ecosystems, including applied laboratories, green business incubators, and partnerships with bio-based industries or MSMEs. Universities and policymakers are encouraged to align sustainability goals with entrepreneurship education strategies through cross-disciplinary collaboration, clear program-level frameworks, and the strategic use of digital technologies for

business validation. Such systemic support is particularly critical in developing-country contexts, where institutional capacity plays a decisive role in narrowing the intention–behavior gap in green entrepreneurship.

5. Conclusion

This study demonstrates that although awareness of the urgency of green entrepreneurship is well established among lecturers and students, the implementation of Green Entrepreneurship Education (GEE) in the bioentrepreneurship context remains fragmented and largely theoretical. Sustainability values have not yet been systematically integrated across the curriculum, limiting the transformative potential of learning to translate environmental awareness into concrete entrepreneurial action. The formation of Green Entrepreneurial Intention (GEI) and Green Entrepreneurial Behavior (GEB) is further constrained by interconnected structural, pedagogical, and psychological barriers, including limited facilities, mentoring, and industry collaboration, which collectively reinforce an intention–behavior gap.

The study contributes to the literature by emphasizing that green entrepreneurial behavior is shaped not only by individual motivation but also by learning Design and institutional ecosystems. By situating GEI and GEB within classroom practices and institutional support structures, this research extends existing green entrepreneurship frameworks that predominantly focus on psychological determinants. However, the findings are limited by the single-program context and the qualitative, cross-sectional Design. Future studies are encouraged to adopt multi-institutional and longitudinal approaches to test integrated, experiential, and ecosystem-based learning models.

From a managerial perspective, the findings suggest that study program managers do not necessarily need to wait for the availability of sophisticated laboratories or large institutional investments to initiate improvements in green entrepreneurship learning. A practical and low-cost initial step is to strengthen collaboration with local micro, small, and medium enterprises (MSMEs), particularly those engaged in environmentally friendly or bio-based production. Such collaborations can be integrated into existing courses through project-based assignments, field observations, mentoring sessions, or guest lectures, enabling students to gain real-world exposure to green entrepreneurial practices.

Additionally, program managers can encourage lecturers to collaboratively align sustainability values across courses through simple curriculum coordination meetings and shared project themes. These incremental, feasible actions can serve as an entry point for building a green entrepreneurship learning ecosystem while gradually reducing the intention–behavior gap among students. Overall, the study highlights the need for systemic pedagogical and institutional reform to strengthen the role of higher education in developing future green entrepreneurs.

6. Acknowledgments

7. Conflict of Interest

The authors declare no conflict of interest.

8. Author Contributions

Eka Imbia Agus Diartika conceptualized the main research idea, designed the study, conducted data collection, analyzed the data, and drafted the original manuscript. Endah Rochmatika contributed substantially to the formulation and refinement of the research questions, as well as to the analysis and interpretation of the research findings and provided critical input to strengthen the discussion of results. Zahid Zufar At Thaariq contributed by reviewing and refining the conceptual framework, improving the research title and core ideas, and providing critical input related to learning and instructional perspectives. All authors were actively involved in discussing the results and approving the final version of the manuscript. All authors confirm that they have read and approved the final version of this manuscript. The percentage contributions to the conceptualization, drafting, and revision of this paper are as follows: Eka Imbia Agus Diartika, 50%; Endah Rochmatika, 30%; and Zahid Zufar At Thaariq, 20%.

9. Data Availability Statement

The authors state that the data supporting the findings of this study will be made available by the corresponding author (Eka Imbia Agus Diartika), upon reasonable request.

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