

“IMPACT OF UGA SUSTAINABILITY CERTIFICATE  
ON STUDENT PARTICIPANTS”

by

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(Under the Direction of Maria Navarro)

ABSTRACT

The University of Georgia (UGA) Sustainability Certificate Program's overarching goal is to equip students with practical learning in interdisciplinary settings, providing them with the necessary knowledge and skills to address global sustainability concerns through real-world solutions. In order to address the impact of the UGA Sustainability Certificate Program on alumni, I explored (1) the student experiences, including alumni sustainability practices, and certificate impact on their professional, personal, and academic life; and (2) teaching and curriculum effectiveness, which includes strategies, attributes of the certificate, and participant recommendations. This qualitative research study used semi-structured interviews for data collection and a reflexive thematic analysis approach. The study's findings contribute to a deeper comprehension of the role of sustainability certificate programs in shaping student experiences and promoting sustainable practices in higher education. Equally important, this investigation provides valuable insights for university faculty, policymakers, administrators and sustainability advocates looking to evaluate certificate program impact and to improve the effectiveness of sustainability initiatives in the academic setting.

INDEX WORDS: Education for sustainable development, Student experiences, Community-based learning, Sustainability education, Curriculum design, Interdisciplinary education, Experiential Learning

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# CHAPTER 1

## INTRODUCTION

### **General overview**

The global responsibility to address environmental, economic, and societal concerns is growing at an accelerated pace. It is essential to prioritize the supply of adequate food, clean water, electricity, housing, education, and health for humans without compromising the availability of clean air, natural resources, biodiversity, and flourishing ecosystems. To ensure that the demands of present and future generations are met, people must act in a way that is sustainable on all fronts—politically, socially, and economically (National Academies of Sciences, Engineering, and Medicine [NASEM], 2020).

In the early 2000s, there was a significant increase in environmental awareness and sustainable practices in the human population. As a result, environmentally friendly approaches attracted interest across a variety of industries and institutions, including higher education. By 2008, many schools and universities already had established sustainability offices or projects to support sustainable efforts on campus. The significance of sustainability education in higher institutions has been progressively amplified in recent decades, considering the escalating global concerns about environmental, social, and economic sustainability challenges.

Professors specializing in sustainability studies and other transdisciplinary fields are responding to a critical demand of our era: creating and offering high-quality academic programs that make a significant contribution to addressing the most severe, comprehensive, and interconnected array of challenges humanity has ever faced (Evans, 2019).

## **Analyzing and assessing University Curricula**

While colleges are actively creating sustainability programs, there is a potential gap between the content taught and the practical skills that industry requires to effectively tackle real-world sustainability concerns. According to Steinemann (2003), students often graduate with substantial textbook knowledge but limited experience in addressing real-world problems. This discrepancy emphasizes the necessity of assessing and aligning the curriculum with what is needed outside academia. Through the assessment and evaluation of curricula, programs can offer valuable insights into appropriate methodologies, identify areas that require improvement, and aid in developing more efficient sustainability certificate programs (Evans, 2019).

For sustainability education to evolve into a well-established academic program and effectively train future sustainability scholars and scientists, it is crucial to establish certain common principles and frameworks (O'Byrne et al., 2015). While some tools, initiatives, and approaches (TIAs) address sustainability from different perspectives (Ness et al., 2007), including social sustainability, most prioritize environmental and economic factors (Lozano, 2012). To better understand curriculum implementation in academic research, a Sustainability Implementation Framework (SIF) was created by Bautista-Puig and others (2023). SIF indicates that TIAs take a more holistic and balanced approach to implementation, rather than just theory (Bautista-Puig et al., 2023).

Among the popular TIAs to assess sustainable development (SD) in universities we can find Roorda's 2001 Auditing Instrument for Sustainable Higher Education (AISHE), Shriberg's 2002 Environmental Management System, Lozano's 2006 Graphical Assessment for Sustainability in Universities (GASU) tool, the Environment Sustainability Assessment Questionnaire of the University Leaders for a Sustainable Future (ULSF) 2001, and Lozano's

2007 Assessing Universities' Curricula Holistically (STAUNCH) tool. However, this thesis focuses on the Sustainability Tracking, Assessment & Rating System (STARS) as a key tool for evaluating sustainability efforts (STARS, 2018).

STARS was developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS provides standard measures for measuring sustainability progress at US and Canadian colleges and universities, and has expanded to include institutions in other nations through an International Pilot and STARS 2.0. This tool aims to foster a global network of sustainability leaders, provide a framework for addressing sustainability in higher education, and facilitate information sharing across institutions (AASHE, n.d.). Since its creation in 2009, STARS has been considered a reliable source of data for assessing campus sustainability (Urbanski & Filho, 2015). Participating institutions are assigned an overall STARS rating of Reporter, Bronze, Silver, Gold, or Platinum (STARS, 2018). STARS Version 2.0, released in 2013, enhanced the reporting system and made it more accessible to higher education institutions globally (Urbanski & Filho, 2015).

Overall, the approaches can assist university administrators in effectively strategizing educational improvements, implementing curriculum reforms, and encouraging students to engage in sustainable learning and reflect upon the subject matter. They can also facilitate the connection between the sustainability initiatives undertaken at the university and the goals that students see as being accomplished.

### **Sustainability Education at UGA**

“The initial effort to start an Office of Sustainability at UGA [University of Georgia] originated from the formation of the Go Green Alliance — a coalition of leaders from each of the environmental groups at UGA” (Strydom, 2021). It was formed in order to assist these student

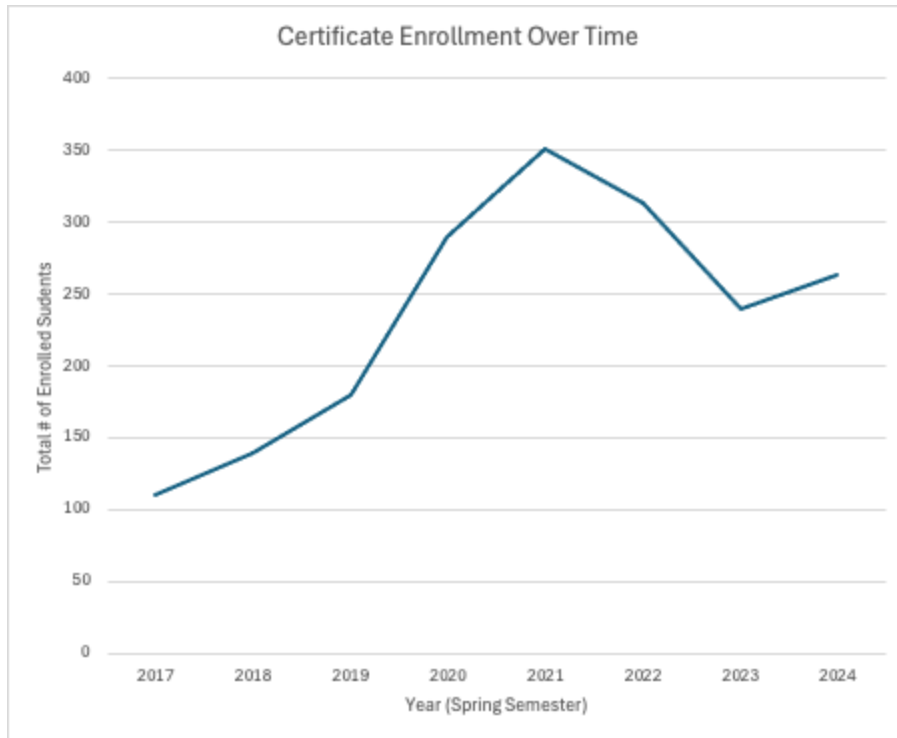
leaders in identifying shared sustainability goals at UGA. TGIF (The Green Initiative Fund) was the main initiative of the Go Green Alliance. This \$3.00 green-fee that students would pay each semester was designated to specifically create an Office of Sustainability on campus. In 2009, UGA former president Michael F. Adams established a Sustainability Working Group composed of teachers and staff to assess UGA's sustainability and provide recommendations (Suggs, 2009). Following years of implementing the Green Initiative Fund campaign, speaking to classes, writing letters, tabling at the student center, and employing other educational tactics, the UGA Office of Sustainability was officially established in Spring of 2010.

Since then, numerous sustainable initiatives have been developed, including food waste composting, recycling and waste reduction programs, campus sustainability grants, GHG emissions dashboard, UGarden (which promotes km 0 and organic food), a swap shop, fresh express, zero waste athletics, a fleet of 30 electric buses, and the UGA Sustainable Certificate program for students.

The University of Georgia Sustainability Certificate Program (UGA SCP) was established in 2016. Initially, it started with a small group of students (30) but has experienced substantial growth in enrollment over time. Figure 1.1 represents the certificate enrollment after 2016. As reflected in figure 1.2, it has garnered strong representation from Franklin College of Arts and Sciences, Terry College of Business, and College of Agricultural and Environmental Sciences (CAES) students, demonstrating its growing popularity and relevance across a variety of academic areas.

### **Figure 1.1**

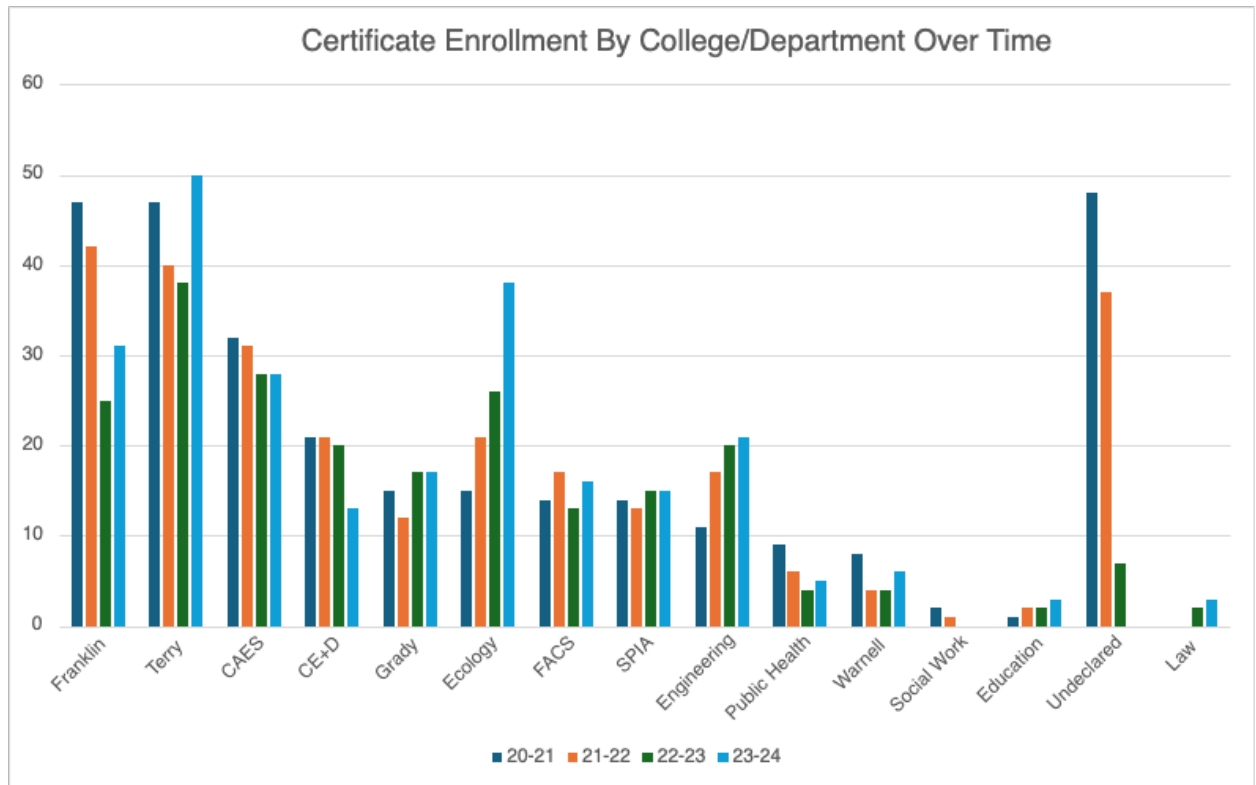
*UGA Sustainability Certificate Program enrollment over time according to UGA Sustainability Certificate 2023-2024 Annual Report (Byers et al., 2024)*



**Figure 1.2**

*UGA Sustainability Certificate Program enrollment by college and department over time according to UGA Sustainability Certificate 2023-2024 Annual Report (Byers et al., 2024)*



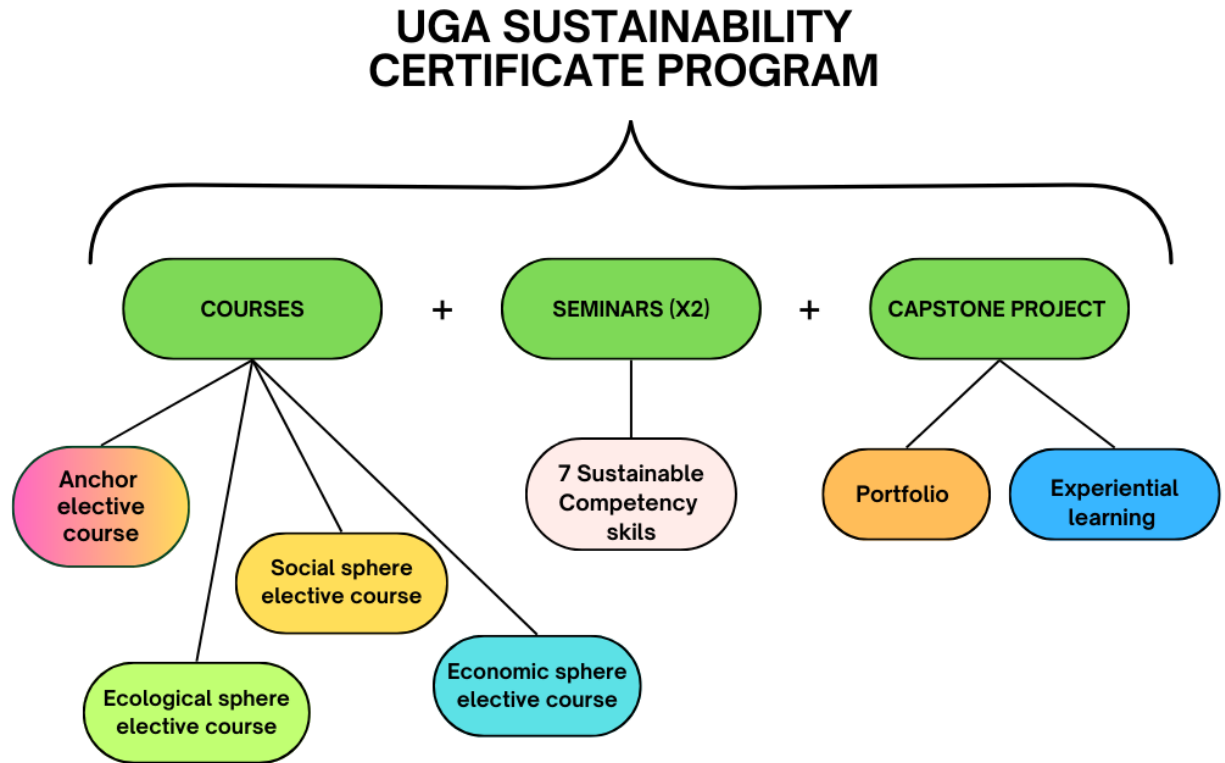


UGA SCP is a remarkable initiative that aims to integrate sustainability ideas and concepts into higher education. According to the Director of the UGA SCP, “the certificate program supplements any UGA major with a sustainable framework and competencies needed to innovate creative solutions to local and global challenges” (Sustainable UGA, 2021). This multidisciplinary program aims to equip students with the knowledge and skills necessary to address complex sustainability issues in their future careers and personal lives.

To earn the certificate at the end of the program, students are required to complete an anchor course, attend two semesters of the interdisciplinary sustainability seminar, take one course from each of three spheres (social, environmental and economics), compile a portfolio of critical reflection on their certification learning, and participate in a team capstone project (see Figure 1.3).

**Figure 1.3**

*UGA Sustainability Certificate Program requirements*



The UGA SCP is designed to provide a comprehensive framework about sustainability related-topics. The program requirements include an Anchor Course, which acts as the foundational element, providing students with a thorough understanding of the history, components, and practical implementations of sustainability. These courses aim to examine the interrelated aspects of sustainability, including social, environmental, and economic components, from an interdisciplinary perspective. In order to achieve a comprehensive education, students must choose courses from each of three separate domains: Ecological Sustainability, Economic Sustainability, and Social Sustainability. The Ecological Sustainability sphere centers on

ecosystem services, system boundaries, and climate change, drawing on a fundamental comprehension of ecology. The Economic Sustainability sphere focuses on analyzing decision-making principles, business practices, and equitable issues that are essential for creating a prosperous society, both in the present and in the long term. The Social Sustainability domain encompasses a range of social dimensions of sustainability, such as diversity, social justice, policy and legislation, communication, the built environment, behavior change, and community development. This multifaceted strategy guarantees that students acquire a thorough comprehension of sustainability in diverse fields and situations (Sustainable UGA, n.d.-a).

Additionally, the capstone is a transdisciplinary team project aimed at addressing real community needs and empowering students to connect knowledge about sustainability to their primary discipline. Students collaborate with a community partner and their team members to initiate and complete a project from start to finish. This opportunity is crucial for preparing them for careers and graduate school. Furthermore, the interdisciplinary seminar covers seven competencies that are essential for integrative solutions. Overall, educational programs like this can potentially prepare entire generations to devote themselves to the responsibility of taking care of the environment (Sustainable UGA, n.d.-a).

In 2014, UGA joined the growing number of U.S. universities in participating in the STARS project, which allows for public inspection of sustainability initiatives and direct comparison to other schools. In 2021, the University of Georgia obtained the classification of Gold rating (AASHE, n.d.).

### **Statement of the problem**

Throughout the past few thousand years, human populations have expanded significantly and grown to the extent that they now exert a major influence on nearly all living organisms on

Earth. Human societies' advanced technological capabilities have facilitated the rapid extraction and trade of large quantities of natural resources in a continuous and unsustainable manner (Buckler & Creech, 2014). Fortunately, the United Nations designated the period from 2005-2014 as the Decade of Education for Sustainable Development, in order to highlight the significance of education in promoting global sustainability. The overarching goal was to integrate the principles and practices of sustainable development into all aspects of education and learning. By promoting changes in knowledge, values, and attitudes, the idea was to create a more sustainable and equitable society for everyone (Buckler & Creech, 2014).

In 2015, the UN General Assembly approved seventeen Sustainable Development Goals (SDGs), with the aim of achieving them by 2030. The objective of these seventeen goals is to ensure a sustainable, peaceful, prosperous, and fair existence on Earth for all individuals, both for now and in the future (United Nations General Assembly, 2015). In particular, higher education institutions have a crucial responsibility in developing future leaders in sustainability and assisting in the attainment of the ambitious objectives outlined by the SDGs. Higher education enhances the cognitive capacities of adult individuals and is considered a catalyst for promoting sustainable development (Žalėnienė & Pereira, 2021). Target 4.7 of the SDGs states that education systems worldwide should guarantee that all learners acquire the necessary knowledge and skills to advance sustainable development by 2030 (United Nations General Assembly, 2015). Global education for sustainability advanced at all levels is achieved when aligning education and sustainability goals, incorporating sustainability issues into education systems, involving a wide range of stakeholders, strengthening legal obligations, integrating sustainability into the entire learning environment, fostering critical thinking and participatory problem-solving, and incorporating sustainability education into formal schooling (Žalėnienė &

Pereira, 2021).

Despite the growing popularity of sustainability certificate programs in higher education, there is a research gap on the post-graduation experiences of graduates from these programs. While certain universities, like Arizona State University and Columbia University monitor the professional journeys of their former students, it remains uncertain how graduates from sustainability-related programs enter the job market and whether their sustainability education gives them a competitive edge in terms of employment and career progression (NASEM, 2020).

This lack of understanding of alumni experiences limits higher education institutions' capacity to optimize their sustainability certificate programs, effectively assist their graduates, and communicate the value of these programs to stakeholders (McNulty, 2015). As a result, there is an urgent need to examine and comprehend the post-graduation experiences of sustainability certificate alumni in order to drive program development, improve student preparation, and assess the larger impact of sustainability education in tackling global sustainability issues.

### **Purpose of the study and research questions**

The end purpose of the study is to improve sustainability education globally and at UGA. To accomplish this purpose, the following specific objectives were identified:

- Examine the impact of the UGA sustainability certificate program on former students, including its influence on their personal and professional lives
- Offer insights into the strengths and weaknesses of the UGA sustainability certificate program

This study is driven by five research questions, strategically categorized into two blocks. The purpose of these questions is to examine several facets of our research topic, offering a thorough structure for investigation. The initial segment centers on the certificate program

impact on former students, while the second block digs into student suggestions, and experiences, strategies and attributes of the program. The core questions driving the research are categorized into these sections:

Block 1:

1. How has participation in the certificate program impacted participants in their professional, personal, and academic life?
2. How has the certificate impacted their sustainability practice?

Block 2:

3. What was the student experience during participation in the certificate program?
4. What were some valuable strategies and attributes of the certificate?
5. What recommendations do participants have for the Certificate?

By identifying effective approaches we can influence positive behavioral changes and shape meaningful experiences related to sustainability. In addition, by employing a Thematic Analysis approach, this project will contribute to a deeper understanding of the subjective experiences and meanings attributed to sustainable food practices in UGA students. It will also allow us to explore potential educational programs that can be utilized or replicated to achieve good human behavior and decision-making oriented to sustainability, in the context of schools.

## **Definitions**

### **Sustainability and Sustainable Development**

Van Zon (2002, as cited in Du Pisani, 2006) argued that while the terms 'sustainability' and 'sustainable' were first included in the Oxford English Dictionary in the latter half of the 20th century, their equivalent terms in French, German and Dutch have been in use for centuries. For example, the equivalent term in French was *durabilite'* (durable).

Despite the fact that environmental issues (such as deforestation, soil salinization, and decreased soil fertility) were present as early as the ancient Egyptian, Mesopotamian, Greek, and Roman civilizations, the necessity to utilize resources in a sustainable manner came later with population growth, rise in consumption resulting from the Industrial Revolution, and the threat of depletion of natural resources. The United Nations Conference on the Human Environment, which took place in Stockholm in 1972, marked the beginning of a series of international conferences addressing the urgent ecological crisis. During this conference, it became evident that development must be sustainable, meaning that it should not solely prioritize economic and social aspects, but also consider the responsible use of natural resources (Du Pisani, 2006).

The concept of sustainable development was initially articulated in the 1987 Brundtland report 'Our shared future' by the World Commission on Environment and Development (WCED) (Du Pisani, 2006; Comisión Económica para América Latina y el Caribe [CEPAL], n.d.). In this report, sustainable development was defined as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 37).

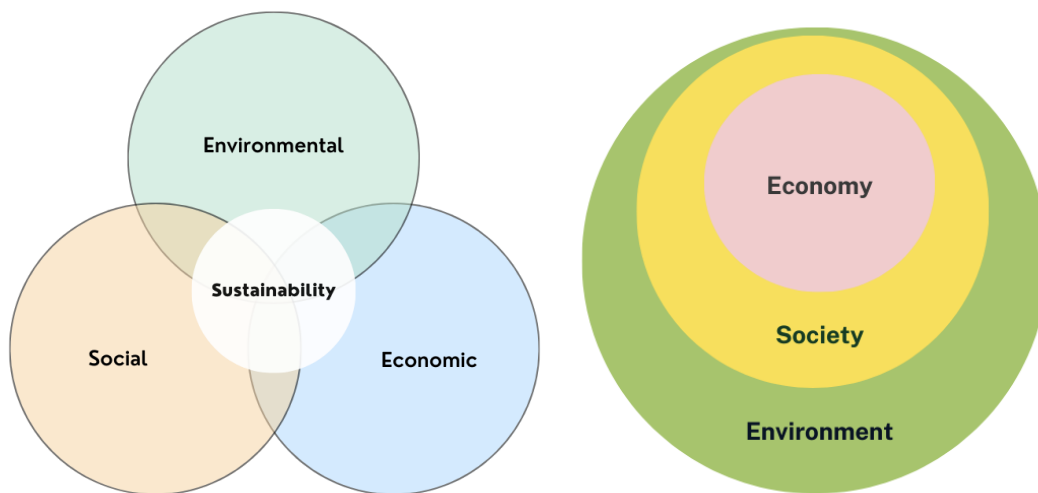
Elkington established the concept of the triple bottom line (TBL) in 1994 to assess the performance of enterprises. It provides a framework for evaluating a company's performance in terms of sustainable development. Since its inception, companies have adopted the TBL as a tool to measure their economic, social, and environmental impact (Bettencourt Gomes de Carvalho Simas et al., 2013).

In recent years, there have been interesting perspectives about the concept of sustainability and its “true” meaning. The topic has generated thoughtful discussions among academia, leading to the emergence of various conflicting viewpoints (Ruggerio, 2021). For

example, unlike the utilitarian approach, ethical approaches emphasize that future generations have a legitimate claim to the same degree of environmental quality and resources as the current generation (Mudacumura et al., 2017). Overall, Sustainability is commonly portrayed as the point when social, economic, and ecological interests and actions converge (Gibson, 2006). Figure 1.4 represents Triple Bottom Line approaches of the UGA SCP. The first image, a Venn Diagram representation, emphasizes the interconnectedness of the social, economic and environmental spheres. In this approach true sustainability is only accomplished when there is a harmonious and comprehensive integration of all three factors. The second representation is illustrated by nested circles. This model proposes a hierarchical relationship in which the economy is situated within society, which in turn is situated within the environment.

**Figure 1.4**

*Triple Bottom Line approaches of the UGA SCP*



In the case of the Sustainable Certificate program, sustainability is defined as: “the just and ethical integration of social, environmental, and economic solutions to ensure that all people can thrive, both now and in the future”.



This concept underlines how the 'sustainability' concept should not be described just as a total or aggregate, but rather as the interconnectedness and mutual influence of ecological, social, and economic variables (Vogt & Weber, 2019).

### **Student Experiences**

The notion of student experience (SX) is ambiguous, as it lacks a universally acknowledged definition and is frequently tailored to the particular objectives of particular studies (Matus et al., 2021) or educational programs. The concept centers around the cognitive processes via which students perceive, engage with, and acquire knowledge from their educational surroundings, encompassing both structured and unstructured learning settings.

For the purposes of this thesis, we follow the concept approach of Matus and other colleagues (2021):

The SX concept refers to all the physical and emotional perceptions that a student or future student experiences in response to interaction with products, systems or services provided by a HEI [Higher education institutions], and interactions with people related to the academic field, both inside and outside of academic spaces. (Matus et al., 2021 p. 15)

### **Sense of Community**

A sense of community is more effectively established in a setting with a single focus or a common objective (Jongbloed et al., 2008). Although there have been various conceptualizations of what constitutes a sense of community, the definition that resonates with this study the most is the one developed in 1986 by David W. McMillan and David M. Chavis: “Sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan 1976, p. 9, as cited by McMillan & Chavis, 1986).

## **Sustainability Education**

According to the Sustainable UGA (n.d.-b) “The Interdisciplinary Certificate in Sustainability is a competency-based educational program that links knowledge, skills, values, aptitudes, and attitudes necessary to address complex sustainability problems.” Thus, the thesis approach of sustainability education coincide with Medrick, R. (2013) when he expressed:

Sustainability Education is intended to provide learning, training, and practical experience, in both formal and non-formal settings, that fosters personal development, community involvement, and action for change in our human and natural worlds.

Grounded in our experience of the world, Sustainability Education must mirror both the patterns present in our natural environment and the conditions present in our human society with the intention of preparing us for uncertain and rapidly transforming world conditions. (p. 1)

## **Interdisciplinary Education**

According to Vincent and Focht (2009), interdisciplinary higher education environmental degree programs in the United States have evolved in response to internal factors inside the institutions as well as external factors related to societal changes and the economy. In practice, terminologies such as multidisciplinary, interdisciplinary, and transdisciplinary are frequently used interchangeably, while representing very distinct ways to integrate knowledge across different fields. In particular, the notion of an "interdisciplinary" curriculum is complex to achieve (Lozano, 2006). In the case of the UGA SCP, an interdisciplinary education approach is visualized in the Anchor course, Capstone Project, through the seminar's diverse array of guest speakers, and in the student's selection of elective courses, since they must enroll in at least one course outside their primary discipline. The framework of this thesis shares the vision of

sustainable education expressed in 1996 by the American Association of Colleges of Nursing.

Interdisciplinary education is an educational approach in which two or more disciplines collaborate in the learning process with the goal of fostering interprofessional interactions that enhance the practice of each discipline. Such interdisciplinary education is based on mutual understanding and respect for the actual and potential contributions of the disciplines. (p.199)

### **Experiential Learning**

David Kolb's experiential learning paradigm serves as the theoretical foundation for this study. Experiential learning is described by Kolb (2013) as a dynamic learning view based on a learning cycle, which is driven by the resolution of the dual dialectics of action/reflection and experience/abstraction. Thus, the experiential learning theory learning model presents two interrelated modes of understanding experience—Concrete Experience (CE) and Abstract Conceptualization (AC), and two interrelated modes of transforming experience—Reflective Observation (RO) and Active Experimentation (AE) (Kolb, 2015).

According to Kolb (2015) learning emerges through the resolution of creative tension among these four types of learning. Thus, learning is defined as “the process whereby knowledge is created through the transformation of experience” (p. 49). On the other hand, the term “experiential” was used to define a theoretical perspective on how individuals learn, which is applicable in all life situations. It refers to a comprehensive learning process that can help overcome the challenges associated with learning from experience.

### **Significance for the study**

The thesis aims to comprehensively assess the influence of the UGA Sustainability Certificate Program on its alumni participants. More broadly, this study aims to improve the

overall understanding of effective sustainability education in higher education institutions by examining the long-term outcomes of the program. By exploring the educational experience and providing evidence-based findings, the study provides significant insights that may be used to guide policy decisions and improve pedagogical methods across higher education.

Education has the capacity to shape actions. This research topic is crucial for understanding the impact of sustainability education, university outreach and engagement in influencing knowledge structures in modern universities like UGA. It provides valuable insights into the certificate's long-term impact on students. By studying the student experience in the certificate program, valuable strategies, attributes, and recommendations can be identified. These insights can guide the development of more effective and culturally responsive sustainability education programs, learning activities, and curricula that promote sustainability values and practices. Furthermore, understanding the long-term impact of educational programs on alumni is crucial, given the growing importance of sustainability across various industries.

Therefore, the study findings will not only provide rich information from participants' individual experiences to enhance the UGA program, but also offer valuable perspectives for other schools aiming to establish or enhance similar sustainability education efforts.

### **Researcher reflections**

This study was a mix of emotions, constant reflections, interpretative thinking, and fun! Despite the study complex topic and overwhelming nature of qualitative research, it was helpful in revealing my research weaknesses as well as my greatest strengths.

In some areas I felt more confident. At the end of my Master program, I feel better prepared to write my research questions in alignment with my methodology and interview guidance. In addition, I remained positive throughout the process. After taking several research

courses, I finally realized that spending extensive amounts of time analyzing data and the necessity of patience and deep contemplation in research is quite natural and necessary. The comprehensive review of materials, thoughtful interviews, and the careful transcription process were some of the factors that, taken together, and according to me, made the project successful. A careful examination of the materials and instructor guidance proved to be vital supports in decomposing complex ideas into more digestible parts for the project implementation. Furthermore, the successful completion of data collection through interviews was possible since I managed to plan in advance the interviews in order to secure substantial data for the project.

As a researcher, I consider it essential for me to declare my position towards sustainability. Undoubtedly, my four years of expertise in food sustainability have shaped my perspective, potentially impacting my interpretation of student narratives, particularly in relation to courses and capstone projects relating to food and farming. I acknowledge that my background expertise could influence my evaluation of these particular program elements. Furthermore, my personal experience as a recent graduate of the certificate program has greatly influenced the way I conduct research and the conclusions I have drawn. The perspective from an insider offers both benefits and difficulties. My comprehension of student narratives has improved because of common experiences, but it has also posed challenges in being objective when my own experiences differed from the responses of the participants.

My direct participation occasionally resulted in differing opinions, especially over the inclusion of diverse elements in the program. Upon hearing participants' claim that the program lacked diversity in both class and capstone projects, I reflected a lot on how the program has shifted in the last couple of years, considering my own firsthand observations. I had to take into

account the wider scope of UGA's student demographics and recognize the difficulties in dealing with diversity within the current institutional structure.

In order to address possible biases and achieve a more thorough comprehension, I conducted semi-structured interviews, enabling participants to provide detailed explanations of their experiences. I utilized reflective thematic analysis to deliberately scrutinize the potential impact of my experiences on the selection and perception of themes. During the research process, I constantly analyzed my interpretations and actively sought further explanation whenever my understanding diverged from the responses of the participants.

As a researcher, this project has been transformative, fostering growth in learning and navigating through analysis and material support to create meaningful insights. I acknowledge that my dual position as a researcher and former program participant yields significant perspectives, however necessitates ongoing introspection. By recognizing these possible influences and employing tactics to reduce bias, my goal was to generate a more transparent and accurate study of the certificate program. Personally, this study has enormously contributed to improve my research skills, as well as my sense of belonging and purpose in pursuing a future Ph.D.

### **Specific focus of each chapter**

In this first chapter, I have presented an introduction to the study, including a broad overview of the program history and requirements, the researcher's reflections, and an analysis of university curricula. It also identifies the problem, research aim, questions, and key definitions.

Chapter 2 provides an overview of the existing literature on sustainability in higher education. It delves into the Experiential Learning Theory as the underlying conceptual framework. The chapter also investigates various pedagogical techniques that can be employed

to promote sustainability. Additionally, it assesses the usefulness of sustainability programs.

Chapter 3 provides a detailed explanation of the study methodology, which encompasses research epistemological approach, the methods used for data collecting, the techniques employed for data analysis, the measures taken to ensure the trustworthiness of the findings, and a final statement regarding the researcher's self-awareness and potential biases.

In chapter 4, the findings are presented in a structured manner. The research findings were categorized based on the two primary research topics. The document offers an in-depth examination of the gathered data and its relevance in addressing each research inquiry.

Finally, chapter 5 provides an analysis of the results in relation to previous research. This section provides a concise overview of important discoveries, discusses the consequences and inferences derived from the study, and proposes suggestions for educators and researchers. In addition, the chapter acknowledges the constraints of the study, proposes potential avenues for future investigation, and concludes with closing observations regarding the importance of the work.

## CHAPTER 2

### LITERATURE REVIEW

#### **Sustainability Education in higher education**

At its core, sustainability fundamentally focuses on the relationship between humans and their surrounding environment. Throughout the mid-20th century, important American conservationist figures like John Muir (1838-1914), played a crucial role in solidifying the emergence of the American environmentalism movement (Kirsche, 2008). Environmental science and the emergence of Western environmentalism in the 1960s, particularly with Rachel Carson's *Silent Spring* (1962), led to the development of environmental education. Thus, sustainability higher education programs have origins in previous programs that focused on the environment and development (NASEM, 2020).

Sterling (2004) documented the historical development of environmental education, starting with Sir Patrick Geddes (1854–1932), a prominent Scottish biologist and sociologist intellectual in the United Kingdom. Development education in the 1970s was established within non-governmental organizations and certain Western education systems. It both intersected and conflicted with the global focus on environmental education at that time (Sterling, 2004). However, in the 1970s, the International Union for Conservation of Nature (IUCN) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1977 played key roles in establishing the initial definitions of environmental education (NASEM, 2020).

In 1990, the president of Tufts University in Massachusetts gathered 22 university presidents and chancellors from 15 nations in Talloires, France. These visionary thinkers advocated for higher education to enhance awareness, knowledge, technology, and tools in order



to foster an environmentally sustainable future (NASEM, 2020). Another milestone event happened in 1992 in Brazil. This time the United Nations Conference on Environment and Development “Earth Summit” included the participation of 117 heads of state and representatives from 178 nations, making it the most significant gathering of world leaders at that time (Britannica, 2024). In anticipation of the Earth Summit, U.S. President Bill Clinton created the President's Council on Sustainable Development in 1993. Another great example of the overall progress of the Sustainability Revolution was the World Summit on Sustainable Development, which took place in South Africa in 2002. This Summit expanded upon the Earth Summit, placing even more importance on economic and equity matters in addition to environmental accountability (Kirsche, 2008).

The increasing recognition of environmental concerns and global sustainability events continued to have a significant impact on the development of higher education for the last decades. The decade of Education for Sustainable Development (2005-2014) brought numerous sustainability programs at universities and colleges worldwide. In 2006, a group of 12 presidents from colleges and universities, in partnership with Second Nature, ecoAmerica, and the Association for the Advancement of Sustainability in Higher Education (AASHE), convened to establish the American College and University Presidents Climate Commitment (ACUPCC) (Second Nature, n.d.). The initiative facilitates the advancement towards climate neutrality and sustainability by allowing the higher education sector to educate students, demonstrate effective leadership and develop solutions for the society's welfare (United Nations, n.d.). Another example of university partnership is the collaborative program amongst eight African universities. Initiated by the United Nations University's Institute for Sustainability and Peace in 2008, this program focuses on providing graduate training and conducting research in the field of

sustainable development (Otsuki, 2010).

As universities are progressively acknowledging the necessity of incorporating sustainability into their curricula, aligning sustainability-focused programs and integrating sustainability ideas into current disciplines would effectively educate the future generation of sustainability scholars and scientists, enabling them to address the urgent challenges of our day (O’Byrne et al., 2015). According to Brundiers and others (2021), Vincent et al. in 2017 reported that during the periods of 2012 and 2016, the number of institutions in the U.S. offering sustainability programs increased by 15% to reach a total of 2361. Moreover, almost 700 colleges in the United States, with a total enrollment of nearly 6 million students, have officially agreed to the terms of the ACUPCC as of 2020 (NASEM, 2020). These terms include Greenhouse Gas Reports, Climate Action Plans, and Progress Reports. Similarly, colleges around the world have committed to achieving sustainability goals by supporting international agreements such as the Talloires Declaration (Adams et al., 2018). The ten-point action plan aims to integrate sustainability and environmental literacy into teaching, research, operations, and outreach activities in colleges and universities.

### **Experiential Learning Theory (conceptual framework)**

The Experiential Learning Theory (ELT) serves as the foundation of the thesis, as it is in close alignment with the research golden threads, which are purpose, objectives, and research questions.

The significance of experience in the learning process is emphasized by the conceptual and theoretical foundations of the ELT. It takes into consideration how learning is cyclical and involves active exploration, abstract conceptualization, reflective observation, and tangible experience. ELT integrates action, perception, experience, and cognition in a comprehensive

way, embodying the notion that learners learn best from their mistakes and experiences. This theory encourages the idea that learning occurs via experience and that students can start the learning cycle at any point, but that the phases must be completed in the correct order. In fact, experience plays a central role in the learning process (Kolb et al., 2001).

The four primary ideas of the ELT are experiencing, thinking, doing, and reflecting on an event. Beginning with a novel experience, learners consider it, devise potential solutions, and then translate their ideas into deeds that culminate in the construct of learning. Reducing to a learning cycle, the theory also recognizes that students have a choice in how they join the cycle.

Efficiently incorporating the experiential learning cycle into the certificate program framework can be achieved by integrating the four essential components. The cycle is summarized in Figure 2.1. Concrete Experience is enabled by providing students with practical exercises, simulations, or real-life activities, which enable them to directly engage with the subject matter. After that comes Reflective Observation, which involves engaging in activities like reflection exercises, debates, or writing to promote deep consideration of the acquired experiences. The third component, Abstract Conceptualization, entails offering theoretical frameworks and conceptual comprehension to assist students in situating their experiences within wider academic notions. Active Experimentation allows students to apply the principles they have learned in practical circumstances, so completing the cycle and strengthening the learning process. By organizing certificate programs based on these four components, educators can develop a thorough and efficient learning experience that connects theoretical knowledge with practical application (Kolb & Kolb, 2018).

**Figure 2.1**

*Experiential Learning Cycle adapted from Kolb (1984)*



Overall, the experiential learning and the cyclical character of learning are highlighted in the framework that the ELT offers for comprehending the teaching-learning process. It provides a compelling framework for designing and implementing curriculum in certificate programs. It highlights the connection between experience, perception, cognition, and behavior in the learning process and backs the theory that students learn best from their mistakes and experiences.

Certificate programs, characterized by their shorter duration and specialized curriculum, can greatly enhance their effectiveness by integrating experiential learning methods. These ideas

are compatible with the objectives of most certificate programs, which generally seek to impart practical and relevant skills and information in a particular area of study.

### **Pedagogical strategies and competencies for sustainability**

When action pedagogy was recognized as an integral component of philosophy, the strategic orientation of pedagogy emerged. Since then, pedagogy has developed a comprehensive, strategic, holistic and future-oriented educational awareness (Fedosejeva et al., 2018). Furthermore, there has been a growing demand for systemic thinking in the sustainability field.

Several pedagogical approaches have been popularly used to enhance the implementation of effective sustainability education. Sipos and others (2008) study, established the notion of transformative sustainability learning, which integrate learning processes that involve participants' cognitive domain (such as engagement through academic study and understanding of sustainability and global citizenship), psychomotor domain (such as adopting theoretical learning through practical skill development and performing physical tasks like building, painting, and planting), and affective domain (such as enabling values and attitudes to be translated into behavior, such as developing a learning community with individual and group responsibilities). On the other hand, Brundiers and Wiek (2013) strongly endorse the utilization of problem-based learning as a means to enhance students' abilities to solve problems in real-life sustainability scenarios. Furthermore, Lozano and others (2017) proposed a framework that connects sustainability competences with pedagogical approaches in higher education. The framework aims to assist educators in developing and revising their courses to deliver a comprehensive, integrated, and systemic sustainability education.

The UGA SCP integrates engaging participatory pedagogies throughout the

curriculum. These teaching strategies include Cooperative/Collaborative learning, Service-learning, Project-/Problem-based learning and Interdisciplinary team teaching (Ray, 2019). It involves encouraging students to set goals, reconsider sustainability-related questions, establish connections and understand complex situations, express personal positionality and reasoning for taking action, explore and evaluate potential future scenarios, and understand individual and professional responsibilities towards sustainability. Overall, the curriculum promotes interactive learning approaches to allow students to get involved with sustainability concepts. This approach fosters critical thinking and problem-solving skills, which are crucial to address sustainability issues.

In a study conducted by Weik and others (2011) they highlighted five crucial competences: systems thinking, anticipatory, normative, strategic, and interpersonal. According to Brundiers and others (2021, p.1), this is the “most frequently cited framework to date.” Although the framework has been widely supported by experts (including the Sustainability Certificate Program), some have recommended the inclusion of two extra competencies (intrapersonal and implementation) (Brundiers et al., 2021). Furthermore, there are a range of words being used to describe similar competencies (Brundiers et al., 2021) and a lack of clear and coordinated understanding on a cohesive framework for sustainable learning goals (O’Byrne et al., 2015). An improved framework could guide the process of developing, implementing, and evaluating programs to improve the career opportunities of graduates and enable the comparison of sustainability initiatives on a global scale. Furthermore, according to Brundiers and others (2021) some experts advocate for alternative forms of knowledge, particularly indigenous viewpoints, as well as involving specialists from Latin American, Middle Eastern, and African higher education institutions.

In the case of the UGA SCP, it focuses on an educational strategy that stresses seven competencies, which are the combination of information, skills, values, aptitudes, and attitudes needed to tackle intricate sustainability issues. Sustainability certificate students acquire the following 7 competences through courses, seminars, capstones, and a portfolio (Sustainable UGA, n.d.-c). These competences are imparted through diverse instructional methods that facilitate students' development as learners and augment their abilities and aptitudes as sustainability practitioners (Sustainable UGA, n.d.-b). The program competencies (Table 2.1) were drawn from UNESCO (2017), Wiek et al. (2011) and the Global Council for Science and the Environment (Brundiers et al., 2023).

**Table 2.1**

*Key Competencies for Sustainability in the UGA SCP*

<p>Solving Competency</p> <p>Students will be able to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive, and equitable solutions that promote sustainable development, integrating the other competencies.</p>
<p>Systems Thinking Competency (STC)</p> <p>Students will be able to recognize and understand relationships; to analyze complex systems, including their social, environmental, and economic components, to evaluate how systems are embedded within different domains and scales; and to deal with uncertainty when making decisions.</p>
<p>Anticipatory Competency (AC)</p> <p>Students will be able to understand and evaluate multiple futures-possible, probable and desirable; to create their own vision of the future; to apply the precautionary principle; to assess the consequences of action; to deal with risk and change.</p>
<p>Normative Competency</p> <p>Students will be able to understand and reflect on the norms and values that underlie their actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions. Students will also be able to reflect on their own role in the local community and global society; to continually evaluate one's actions; and deal with one's feelings and desires.</p>

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### Strategic Competency

Students will be able to collectively develop and implement innovative actions that further sustainability at the local level and further afield.

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### Collaboration Competency/ Interpersonal

Students will be able to motivate, enable, and facilitate collaborative processes for sustainability problem solving. This includes the ability to learn from others including western scientific and traditional knowledge and wisdom; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to, and be sensitive to others (empathetic leadership); to understand roles within a group, deal with conflicts, and maintain flexibility and adaptability in doing what is necessary / taking on roles to accomplish shared goals.

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### Intra Personal Competency

The ability to reflect on one's own emotions, desires, thoughts and behaviors as well as one's positionality and role in global society and local community. Acting with self-awareness and regulating, motivating, and continually evaluating one's actions to improve oneself, drawing on and developing emotional intelligence and resilience.

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Sustainable key competencies serve as the framework for objectively assessing student learning and the efficiency of teaching. Pedagogical approaches that include key competencies offer a clear and widely accepted structure for creating unique and identifiable profiles of any related academic area (Wiek et al., 2011).

Overall, implementing diverse pedagogical strategies enhance sustainability initiatives in higher education by promoting the development of student competency skills and knowledge. By using project-based learning, practical learning, and collaborative projects that involve students with real-world and simulated environments, we can enhance learners' understanding of systems, as well as situations where solutions may lead to unexpected and adverse outcomes (NASEM, 2020).



## **The value of sustainability programs at universities**

Education can influence how people behave. Incorporating sustainability into school curricula can cultivate environmental awareness and foster eco-consciousness. When students are exposed to new knowledge or "innovation" like eating healthy, the behavioral process of innovation adoption includes five steps such as knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). The realization of effective educational programs will eventually support all steps. To do so, it is necessary to communicate effectively with different audiences. Possible effective communication strategies could include: establish and promote personal or community goals in schools; model desired behaviors; provide feedback and opportunities for students to discuss the new activity with others, etc. In addition, by understanding their previous perceptions, social and cultural influences, knowledge and awareness regarding food and sustainable approaches, we could identify their human experiences, behaviors, and thoughts.

Wiek et al. (2011) underline the importance of sustainability certificate programs in developing transdisciplinary knowledge and practical skills required for sustainable leadership. A study conducted by Lozano et al. (2015) observed that graduates of sustainability programs had improved systems thinking and problem-solving skills, which facilitates their participation in sustainability projects across several industries.

## **The need for research to support Sustainability Education**

There are differences in curriculum focus, school style, and program design when it comes to sustainability programs. Therefore, Collado and other authors (2022) argue that longitudinal studies are necessary to examine the long-term impact of sustainability education on graduates. Furthermore, case studies of alumni success stories, such as those reported by Clarke

et al. 2024, provide understanding of educational programs challenges and strengths for student's contributions to sustainable development in their own communities. In light of this literature, this research seeks to advance the field by performing a thorough evaluation of the long-term impact of the UGA SCP on its graduates.

The focus of this research is crucial for understanding the complex relationship between sustainability initiatives, university outreach programs, and student engagement in transforming knowledge systems inside modern higher education institutions. It provides valuable insights into how students relate sustainability with their respective fields. Such insights can inform the development of more effective sustainable educational programs, learning activities and curriculum.

Overall, the study contributes to the literature by identifying research gaps, providing recommendations and verifying the value of sustainability education. Thus, the study increases our understanding of the impact of sustainability certificate programs on graduates and influences future study and practice in the sector.

## CHAPTER 3

### RESEARCH DESIGN AND METHODS STATEMENT

#### **Restatement of Purpose, Research Questions and Conceptual Framework**

This study is centered on an interpretive epistemology, which acknowledges that reality is shaped by society and that knowledge is formed by interpreting human experiences and interactions (Merriam & Tisdell, 2015). I utilize an interpretive framework, recognizing that the interpretations assigned to Alumni experiences are influenced by their unique circumstances, histories, and interactions with the program and subsequent professional settings. As a researcher, I acknowledge my responsibility in creating understanding within the study process, specifically at the stages of data collection and analysis.

This chapter presents the findings of the study, addressing the questions that guided our investigation. The end purpose of the study is to improve sustainability education globally and at UGA. The research questions are organized in two blocks. Block 1 included the following questions: 1) How has participation in the certificate program impacted participants in their professional, personal, and academic life?, and 2) How has the certificate impacted their sustainability practice? Block 2 included: 3) What was the student experience during participation in the certificate program?, 4) What were some valuable strategies and attributes of the certificate?, and 5) What recommendations do participants have for the Certificate?

Data collection method procedures include semi-structured interviews. Interviewing is the most popular method of gathering data for qualitative research (Merriam & Tisdell, 2015). Interviews provide the opportunity for participants to speak-up and have a voice, as well as to

reflect on their experiences. Semi-structured interviews utilize flexible questioning techniques that are customized to the individual participant's responses and the specific circumstances of each session (American Psychological Association, 2010). As a result, I was able to get more insight from participants' comments, clarify things, and craft follow-up questions based on their stories (Merriam & Tisdell, 2015; Johnson & Parry, 2022). Although data can be interpreted in many ways, in qualitative studies like this one, nothing becomes data without the involvement of a researcher. Indeed, it is the researchers who frequently make notes on certain “codes” or “statements” while ignoring others (Wolcott, 1994, pp. 3–4). In essence, qualitative data analysis should be comprehensive, nuanced, sophisticated, and thorough (Terry et al., 2017).

### **Data Collection and Interview Procedure**

In order to recruit participants I reached out to the Sustainability Office and used the list of students who had completed the pre and post survey questionnaires. I also used a public page online listing and giving details of capstone projects of students and alumni who had completed the certificate. This information allowed me to identify potential interviewee participants. Six alumni accepted my email petition (see Appendix A) and were interviewed. There were five female and one male undergraduate students from the University of Georgia who completed the UGA SCP between 2018-2020. Table 3.1 represents participants' detailed information. The selection of this particular time range was based on two primary factors. Initially, the certificate program was under the supervision of professor Dr. Ron Balthazor until 2020, after which a new professor took over, signifying a notable transition phase. Furthermore, by choosing this time frame, we may assess the subsequent actions and accomplishments of these former students over a span of approximately five years. During 2018-2020, the total of certificate enrollment was 117 students, with a majority of female students. Such gender imbalance has created a unique issue in

recruiting male participants for interview recruitment. Each interview lasted approximately 60 minutes and despite the fact that participants had the option of attending in person or via Zoom, all sessions were conducted via Zoom.

**Table 3.1**

*Detailed information of interviewed participants*

<b>Participants (2018-2020)</b>	<b>Home address and State</b>	<b>Major</b>	<b>College</b>	<b>Year graduated</b>	<b>Gender, Race/ethnicity</b>
Daisha	Georgia (GA)	Environmental Economics and Management	College of Agricultural and Environmental Sciences	Spring, 2019	Female, White American
George	Atlanta, GA	Biology	Franklin College of Arts and Science	Spring, 2019	Male, White American
Kate	Atlanta, GA	Communication Studies	Franklin College of Arts and Science	Spring, 2018	Female, White American
Dakota	New York	International Business, Terry College of Business	Terry College of Business	Spring, 2020	Female, International/ U.S. citizen
Jada	Decatur, GA	Fashion Merchandising	Franklin College of Arts and Science	Spring, 2019	Female, African American
Ana	Atlanta, GA	Marketing, Management and Sales	Terry College of Business	Spring, 2018	Female, White American

## **Data Analysis**

The methodological framework used for data interpretation was Thematic Analysis (TA).

TA is an approach for producing, analyzing, and interpreting patterns in qualitative data. It requires systematic data coding to create themes, which serve as the final analytic goal (Braun & Clarke, 2012). There are three main schools of TA which we call coding reliability, codebook, and reflexive. For the purposes of this study, I focused on Reflexive Thematic Analysis. Reflexive techniques favor Big Q qualitative paradigms, recognizing the subjectivity of data coding and analysis, as well as the researcher's active engagement in generating themes (Braun & Clarke, 2022).

According to Bingham and Witkowsky (2021) there are two categories into which qualitative data analysis procedures can be approached: deductive and inductive reasoning. Pure inductive logic requires that the categories and codes originate solely from the data (Gondim & Bendassolli, 2014). It involves carefully examining the data's content to inform the creation of codes and categories. Thus, an inductive method builds on the dynamic interpretative movement that occurs between classifying something as belonging to a category and modifying the category structures that are used to structure the data into conclusions (Freeman, 2017). However, even the inductive process is acknowledged to have its roots in a theoretical contribution, which forces it to pass through the deductive process eventually. In other words, the researchers' perspective is shaped by a theoretical-epistemological lens that compels them to remain attentive and interpret the data using a framework, even in cases when the categories are not pre-established (Gondim & Bendassolli, 2014; Braun & Clarke, 2022). The Big Q perspective discourages "pure" induction, as researchers inevitably add philosophical metatheoretical assumptions and their own biases to the study (Braun & Clarke, 2022).

Overall, this method contributes to the identification and exploration of recurrent themes and codes within the narratives. The analytical method focuses on the authors' transition from a

description of their data collection to an interpretation and a set of assertions (Ashworth et al., 2019). I believe that the interviews serve as a rich source of qualitative data. They help to capture student's experiences, insights, and reflections on topics related to sustainability and food culture.

### **Trustworthiness**

After conducting the interviews, the audio files were stored on Dropbox with pseudonyms assigned to each participant in mp3 format. Using the transcription service MAXQDA, I generated an initial transcription draft. Processing of the transcripts took at least three rounds of getting familiar with, reviewing and studying the transcripts, editing mistakes in transcription, and putting aside pieces that were not related to the research questions. The final transcriptions were securely stored in my Dropbox, maintaining participant confidentiality through the use of pseudonyms in file names, consent forms, and final report.

Understanding the value of organized research, I created an interview guide to help organize my ideas and align the questions I asked with the study's goals (Merriam & Tisdell, 2015). I created an initial draft of the interview guide following Baker (2022) techniques. By including the phenomena of interest, context, participants, creating clear, focused, and open-ended questions that align with the research objectives, I collected detailed responses from participants (Baker, 2022). I also ensured logical formatting (Carspecken, 1996; Merriam & Tisdell, 2015). By using a hierarchical organization of topics, I supported the transparency and comprehensibility of the study process. As previously mentioned, the aim was to develop an interview guide that closely aligned with the research questions. This involved multiple rounds of refinement to ensure clarity and coherence. The final version, emphasizing flexibility for the semi-structured nature of the interviews, was then included in the Human Subjects proposal

submitted to the IRB. Input from mentors, peers, and others contributed to the process of rethinking, rewording, and refocusing the interview protocol. Appendix B shows the final version of the interview guide.

I reflected on important findings following each interview (Merriam & Tisdell, 2015). Subsequently, I transcribed the audio recordings of the interviews and opted for both manual data analysis and MAXQDA software analysis. I followed the outlined analytic procedure of Braun and Clarke (2012). Their work illustrates a versatile, non-prescriptive approach for interacting with data, coding, and theme development. Although the authors present six distinct phases (data familiarization and writing familiarization notes; systematic data coding; generating initial themes from coded and collated data; developing and reviewing themes; refining, defining and naming themes; and writing the report), the authors emphasize that these are not fixed stages but rather a flexible and iterative procedure. The procedure is typically adjusted to the researcher's evolving analytical abilities and the unique requirements of the study. Thus, my analysis consisted of several cycles of becoming familiar with the data, coding it systematically, and developing themes. During this process, I kept in mind the advice of Braun and Clarke (2021) that the phase approach should not be strictly adhered to and that the analytical process naturally gets more iterative as one's skills improve. During the early stage of my analysis, I printed the transcripts, highlighted valuable phrases, created conceptual maps, and changed the spatial location of my memo writings. I immersed myself in deep reflections during this data analysis, enabling me to perform a thematic coding exercise (Braun & Clarke, 2012). A very successful method was to use different colors of highlighters to separate and group codes that corresponded to different patterns and ideas found throughout the research. The implementation of a color-coding method allowed for the efficient categorization and identification of significant



elements in the data. This approach enhanced the comprehension of the findings by providing a structured and visually intuitive representation. The process was iterative and repetitive, involving continuous adjustments in the connections and relationships between codes. In many cases, I consolidated several initially separate codes into one. According to Alvarez-Hernandez and Flint (2023) writing is viewed and utilized as just the product, the essential means of disseminating the fascinating, thought-provoking, and game-changing research. Writing is a relational and artistic epistemological weaving of ideas and embodiments that researchers create via their relationships with theoretical proponents, participants, mentors, and teachers. Therefore, this project will utilize peer-review for feedback about its communication. In order to guarantee trustworthiness, I also conducted thick description, member checks, and utilized as previously mentioned memoing and a research journal (Lincoln & Guba, 1985). After the process, I realized how hard it is to create a thematic analysis that aligns perfectly with the data and accurately represents the findings. It is a challenge, but at the end you, as a researcher, realize how everything, simultaneously, becomes simpler, and gradually starts to make sense.

Considering the many methods for examining the inquiry data, I decided on a categorical thinking analysis that highlighted recurrent themes in all narratives while preserving pertinent passages from participant accounts. Categorical thinking focuses on the criteria and methods used to organize items into categories. Its major goal is identification, or more specifically, labeling objects in order to classify them. The most common approach for creating categories is to compare objects and identify their similarities (Freeman, 2017). This approach made it easier to thoroughly examine participant experiences in connection to the study's research topics. Lastly, I checked to make sure the themes that were highlighted answered the main study questions.

## CHAPTER 4

### RESULTS

Using a comprehensive data analysis methodology, I carefully analyzed and interpreted the gathered information. The themes and subthemes were derived from a meticulous analysis and offer a well-organized framework for addressing the study objectives. The following findings are organized to respond to the set of questions:

#### Block 1:

1. How has participation in the certificate program impacted participants in their professional, personal, and academic life?
2. How has the certificate impacted their sustainability practice?

#### Block 2:

3. What was the student experience during participation in the certificate program?
4. What were some valuable strategies and attributes of the certificate?
5. What recommendations do participants have for the Certificate?

Figures 4.1, 4.2, and 4.3 provide a visual representation of the final themes resulting from the analysis. Figure 4.1 is a theme map addressing the first set of research questions. It explores how the certificate impacted participants in their professional, personal, academic life, and well as their sustainability practice. Figure 4.2 and Figure 4.3 address the second set of questions. Figure 4.2 represents a thematic map that describes the student experiences, valuable strategies and attributes of the certificate. Figure 4.3 visually summarizes the participant recommendations for the certificate.

One recurring feedback I received from the participants was their genuine enthusiasm for my research. As participant Kate stated, “I’m truly, really excited for you and all of this because I

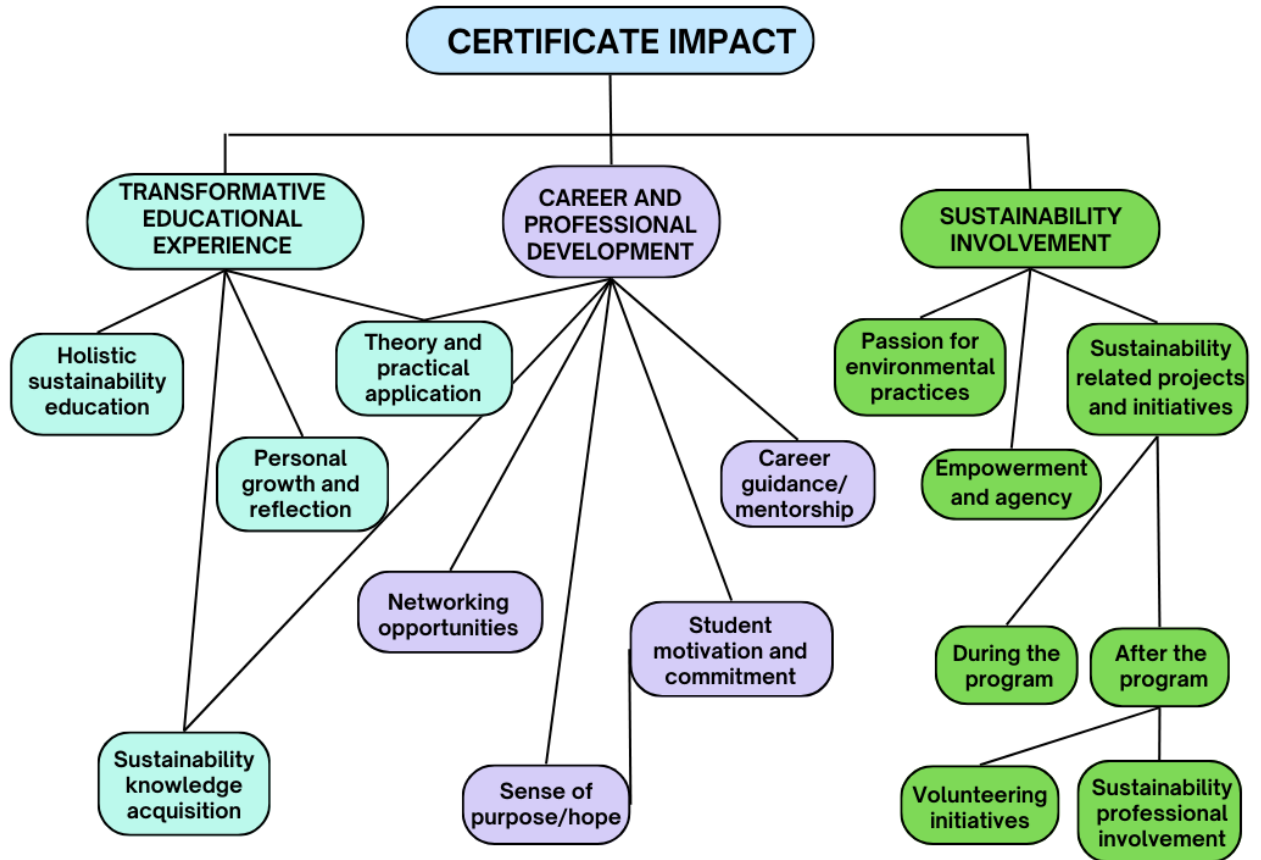
can't imagine all the different stories that you're getting [to hear], ... . Thanks for this and for reaching out because this certificate, and this program and community, has such an impact on my life that I love talking about it.” As a researcher, during the interviews, I felt very proud for the work I was doing and for giving my participants the opportunity to share their experiences.

### **Findings block 1**

As mentioned before, figure 4.1 is a theme map that corresponds to the first set of research questions. These questions include: How has participation in the certificate program impacted participants in their professional, personal, and academic life? How has the certificate impacted their sustainability practice? Thus, figure 4.1 represents the resulting themes from the certificate impact on student experiences.

**Figure 4.1**

*Resulting themes from the certificate impact on student experiences*



### **Transformative Educational Experience**

Overall, participants all agreed that the certificate had an impact in their personal and professional lives. First, it proved to be a really impactful and profound educational experience. As Daisha stated, “the [UGA SCP], it was honestly the best part of my academic career at UGA. I think that's what really spirits all my interests and passion and what led me into the field that I'm in today.”

Students recognized notable personal growth and experienced transformative changes as

a result of participating in the completion of the program. For instance, Daisha expressed how her confidence, sense of optimism and self-assurance increased. “I feel like the [UGA SCP] definitely gave me the confidence to be able to talk about sustainability and to share that with other people too, and feel comfortable doing that.” Similarly, Dakota mentioned how “you could be in any sort of class, in any sort of field, and [still] find a way to connect it to sustainability. I think that was one of the best ways that it helped my self-advocacy in any field that I entered and one of the biggest mindset shifts that came out of the program.” Furthermore, participants shared how personal growth happened in many other areas. The following declaration made by Kate does a very great job at combining different elements: “I feel like the interdisciplinary, the flexibility of it all were big pieces. And the exploratory part [too], because I also was able to study abroad. Those courses and the crossing over, which was incredible because that was the first time I'd ever been out of the country. So for it all to be able to fit together, that was exciting!” “I still go back and I open up that portfolio because it brings back a perspective for me that I absolutely love. Because I'm like, oh wow, that's awesome. Reminds me of something.”

Personal growth is a process, and that focus was expressed by participant George: “[the certificate] gave me a really good foundation of understanding what to look for. But as far as how to actually handle problems, I had to learn as I went. [For example,] I really had an interest in corporate sustainability before I started the certificate program, but I didn't know what it really looked like until I got involved with the program. It's definitely important to me. It is part of the reason that I wanted to get [my current work company] involved with capstone students, because I know how important that part of the project of the certificate was to me. So I wanted to be able

to work with students and kind of give them some of the same opportunities that I had when I was going through the certificate.”

If anything, they all agree with Ana: “I think [the certificate] academic value is very high.” But personal growth was not the only reason for it. According to Ana: “they do a really good job of giving [students] a holistic understanding of what sustainability is.” For participant Jada it really was an important characteristic that will completely change her perception of sustainability. She declared that “being part of the [UGA SCP] helped me realize that was what I wanted to do in a career afterwards. Even though my degree was technically in economics, I didn't really want to do economics. The [UGA SCP], I think, introduced me to the idea that you could do sustainability in so many different ways.” The holistic sustainability education was not only considered valuable inside the UGA, but also after graduation. As Kate declared, “it's amazing from the [UGA SCP] being able to talk about all the different areas, . . . and the eagerness to learn in those areas, and then apply it to so many different types of jobs I've had so far. So being able to be curious or flexible, if you don't need me for this project, I can still work on X, Y, and Z. Here is my example of how I did it from the certificate. I was able to work these different class loads, as well the internship while having this real life experience that now is practical skill, things like that. I feel like the certificate really helps show the broad range that you could get to.”

Another example of transformative educational experience was the sustainability knowledge acquisition gained as a result of the program. According to Daisha, “it was a pivotal part of my career at UGA because it really taught everyone the foundation or the basics of sustainability and [as a result we] got to learn all the different facets of it. Also, I guess it was really the first time I had to do actual research projects when I was in college and ended up

turning that into an actual CURO research project after the fact.” Similarly, Ana found it very useful as she declares that “part of the academics was based on the three spheres, the economic, social, and environmental aspects of sustainability. I’d say I work in the social aspect now. I worked for a startup that is trying to get more affordable health care to folks in the United States. I think that’s super important. Access to healthcare is a big part of the social aspect of sustainability. I got to learn a lot that I wouldn’t have learned in my . . . degree, if not through this certificate program.”

In relation to the connection between holistic education and sustainable knowledge acquisition, we find the words of Dakota: “thinking about how gentrification [relates to] racial and social crisis, but also environmental crisis, food justice, food deserts, like all of those things . . . , I think that seeing the convergence of different subject matters throughout the program is extremely important.” A very positive insight was expressed by Jada, when she declared that the program has “given me the tools and knowledge to understand how we solve sustainable issues in our country.”

From theory to practice application was definitely one of the most mentioned characteristics of the program. According to all the participants, the program placed a strong emphasis on experiential learning and practical application in real-life situations.

Kate shared: “the capstone projects are in the community and they’re making a real life difference . . . . So I think that’s a really effective way of saying like, here’s what we’re learning in the classroom, but also here’s how we can apply it to the real world.” Similarly, Kate shared how “it was cool to then see the [students] sometimes shift because at first they just thought that honestly they were getting another piece of paper that feels very blunt. But you could then see the shift, the mindset shift though, where then it was like this is the real world. These are issues

happening right now there. These are people. This is who it's impacting!" Likewise, Dakota shared "I think anything that required that practical experience were best because I was actually putting it into practice and implementing the learning rather than just like reading and doing like a discussion post on eLC [eLearning Commons]. Yeah, it was just best because it was putting everything we learned into practice."

### **Career and Professional Development**

The certificate had had a significant impact on the student's career and professional development. "I think the [UGA SCP] definitely impacted my journey. Just being something that I could talk about on my resume. Every job that I applied to, every interview that I did, that was what they wanted to talk about or what they were interested in finding out more about" (Daisha). "[Just] being able to have the certificate on my resumé and when applying to jobs was extremely important" (Dakota). "[The certificate] gives us the tools to talk about it, but also validates our passion for sustainability" (Jada).

The theory-to-practice approach to learning has proven to be an exceptionally effective tool in preparing students for the workforce. According to Jada, "[when working on my capstone project] little did I know how much of an impact that would have on me. Because one, I realized that I do have a passion for consulting and helping people become more sustainable with their business. [Second,] I've been able to use that in the real world when I'm consulting with other small businesses." Students not only perceived this useful practical application experience in the Capstone Projects, but also through study trips or internships. As George expressed, "I substituted one of my required courses for an internship. When I did that, I got to experience what sustainability looks like to a real company. That was really important to my education."



According to participants, the program also provided beneficial networking opportunities. Daisha emphasized the communal nature of the [UGA SCP] by stating, “I met with two of my absolute best friends through the [UGA SCP]. I think that's been really cool because since we're all passionate about sustainability, it's really something that we talked about all the time and can keep each other accountable or share in different ways.” Some of the students also expressed how important building those relationships are for future work collaborations. According to George “a lot of it comes down to the student to make the jump right because there's no requirement in the course like: oh, be sure to add this person on LinkedIn, or be sure to get this person, get [his/her] card! But I think the course does a good job of giving you an opportunity to do that.” Furthermore, networking events were considered extremely important. According to Dakota, “I remember [how] we had the networking event in Atlanta; things like that enhanced my ability to get different opportunities like the case competition programs that they organize and like led us through at Emory. All those things are really important. Yeah, I think it absolutely enhanced my educational and post graduate professional experience.”

The program also offered a renewed sense of hope and purpose. According to Daisha, “I think the [UGA SCP] . . . it's like a very hopeful program.” “I think that was something that made me more confident going into the field but not going into it and thinking up like, why does it matter? Like nothing we do is going to make a difference. It is more so, I can't wait to work in this field and make a positive impact and carry on what they taught us in the program.” Similarly, Jada argued that “I think that the biggest part of studying in college, [including] our degrees, [is that] it is not just for ourselves, but for our community to be better and the world, based on what we learned in school with the [UGA SCP].” On another occasion Daisha expressed, “in terms of . . . recommendations for students, I think continuing to be hopeful is

really important because we're going to need everybody to solve all of these [sustainability] issues.”

This sense of hope and purpose was accompanied by a sincere feeling of motivation and commitment of students. “I really wanted to have sustainability in my education in some format. And being a part of the business school, there weren't that many sustainability options for me like yeah, . . . I definitely want to do this.” “It was my geography major and the [UGA SCP] that really made me enjoy college” (Dakota). Similarly, Daisha shared how “we love the program so much that we would just tell everybody about it and get other people excited about it.” What is more interesting is to see how it has prevailed throughout time this sentiment of excitement and commitment towards sustainability. For instance, Daisha expressed: “my entire job is related to sustainability, which I got really lucky. That was the goal after graduating , it was how I really wanted to find a job in sustainability. Started out as a sustainability analyst, which was basically entailed as we work in the green building space.”

One of the most interesting outcomes of the analysis reveals that the influence of career guidance and mentorship was pivotal for students’ formation. For example, Kate recognized the support and strong relationship she built with her mentee. “My friend, she was my mentee and so I got to know her there. We live in different states now. And we would talk every now and then. We don't talk all the time, but someone who I know that I could always reach out to.” “[Overall,] if you knew someone or there was someone from the panel or honestly LinkedIn at the time, that you could then reach out and be like, I just want to talk, I'm just curious, I feel like I did that with a lot of professors in class” (Kate). She then mentioned one of the most impactful professors in her academic journey: Ron Balthazor. “He's made such an impact on my life. . . . he would always start every meeting with being human first. And he'd remind us that and just ask us first

how your day is going.”

Furthermore, the certificate has been a great guidance and support for students' current careers. For example, Jada argued that “sometimes people do ask me, why do you care about the environment or what's your background in this? I try to praise the Sustainability program, whatever I can.” If anything, all participants agreed on this statement made by Ana: “the certificate's job is to open up so many doors in each of those different spheres. And then it is up to the student to figure out what they're passionate about, whether or not they want to make a difference.”

### **Sustainability Involvement**

The integration of eco-friendly projects, practices, and sustainable initiatives has a profound impact on individuals. Throughout the program and beyond graduation, participants demonstrated a commitment to sustainability principles. This commitment manifested in various ways, including active engagement in volunteer work and personal initiative.

During the certificate program, Ana expressed her sustainability involvement efforts. “I worked through the certificate program while interning at the Office of Sustainability and I was their social marketing intern for one year and then their regular marketing intern for the second year.” Similarly, Kate stated “I was interning at the Office of Sustainability, it gave me that real work experience. But also I had a lot of jobs either on UGA’s Campus or Athens Clarke County.” Dakota shared “throughout my time at UGA, I managed the farm at UGAGarden and worked pretty closely with the medicinal herbs garden. That whole experience with agriculture farming was extremely important to, I guess, all of my hobbies today. Then outside of that, I teach a summer course at Bran University on indigenous sustainability.”

There was a sentiment of nostalgia. As Jada expressed “I feel like sustainability efforts get a lot harder once you leave UGA or even as undergrad because it felt like on campus people would say this event is happening, let's go and learn more about this.” However, that did not impede participant’s sustainability involvement after graduation. According to Daisha, “I ended up getting a job as a sustainability analyst ... . It was for an Engineering and Sustainability Consulting company in Atlanta. That's where I still work today.” Kate also expressed her sustainability work involvement: “I now work for the recycling division.” Jada shared as well how she is an executive director of a Creative reUse Center, a nonprofit. She shared how there “we collect second hand art supplies, classroom parties, all those things, and we give them to artists, teachers, or people who just want access to materials.” George, on the other hand, works now at Yamaha doing sustainability for the entirety of the Marine division.

Volunteering and personal initiatives stood out as well. For example, Jada expressed: “[When] I went to North Carolina ... . I ended up volunteering at a nonprofit, sustainable arts nonprofit. And I was just blown away that type of place existed. . . . I volunteered with them so much that they hired me to work there. Another shared experience was from participant Dakota. She expressed: “When I was living in Atlanta, I was a part of the City of Atlanta Mayor’s office . . . and helped with the Atlanta Urban Food Farm and Forest. That was really great.” According to Ana, “me and [two other sustainability certificate alumni] volunteer through an organization called Trees Atlanta. They're focused on reforestation in urban areas, which is super cool.” But volunteering isn't the only way participants have gotten involved with sustainability. According to Jada, “I . . . have a sustainability blog that I post about [sustainability] because sometimes people think that it's out of their reach to live more green. And I use the blog to show people like, no, it'll be a simple swap. Like here's how you shop secondhand, here's how you plan things so

that your life, you take less trips to the grocery store or you support businesses that protect the environment.”

Empowerment and agency are essential concepts for promoting human development, ensuring social equity, and empowering individuals to shape their surroundings. These characteristics were predominant among our participants. Even more interesting, some have manifested that those characteristics are associated with the program preparation. For example, participant Kate expressed “I still remember talking to some classes or even meeting with a student where I would get so nervous. And like I was within communication studies and we had to take public speaking or we had to write for days, like surely you can do it. [But] no, my body would take over, I'd get so nervous, I would be like, what am I saying? Like, why are they listening to me? But now when I think about it, I'm like, no! we're going to talk about it. If you don't want to talk about it, or you don't like it, that's okay. But I'm speaking, I'm going to have the confidence in my voice to say it. Does that mean that that's always what it is? No. But I feel like the certificate helps with that because it gave me opportunities to practice it in real life. ... If it didn't go well, that's great. That was to take one. Okay. Now what's the next opportunity and what are you going to learn from it?”

Empowerment and agency are prevalent after graduation as well. As Dakota expressed “we went to Block Island in Rhode Island, which is the only 100% renewable island in the United States. We did like an immersive experience there. When thinking about foraging and plant identification, we took the students on a ten day camping retreat, which I led along with my coworkers ... . I've been really involved with education in that sense. And then I also recently spoke at the Georgia Youth Sustainability Conference and helped basically curate the entire program for that. More recently, I'm actually coming back to Athens to speak at the Student

Sustainability Conference.” Another great exciting example is narrated by George. According to him, “We hosted the capstone students from the program last semester. We have a lot of other partnerships with different nonprofit doing habitat restoration, combating invasive species. We're also decarbonizing our manufacturing facilities. So it's a little bit of everything across the Sustainability board.”

Passion for sustainability is related to a participant's efforts and morals in preserving natural resources and justice on our planet, for present and future generations. For some, this has been a long journey. For example, Dakota expressed “I always knew that I wanted to work in sustainability. That was never a question. I think, since I was a kid, It was always something that I was passionate about.” To others, like Dakota, it was new in their lives. “I don't think I knew what sustainability was probably growing up, but definitely changed a lot of my personal choices, of wanting to try to just be a good person and make good impacts on the planet.” Furthermore, among our participants, there were individuals who perceived the certificate as a tangible manifestation of their sustainability values. For instance, Jada declared “I really wanted to add something to my degree to show future employers that I cared about a more sustainable earth.” Furthermore, the certificate empowered individuals to effectively learn about it. For instance, George declared: “I had recently become interested in corporate sustainability and the course was probably the closest thing that UGA had at the time to learning about that.”

Overall, passion for sustainability is an important value for our research participants. In one of the recommendations pertaining to faculty and administrators, Daisha expresses: “I would say I know it's harder as the program gets bigger, but . . . make sure that [the program] is still filled with people who are passionate about sustainability.”

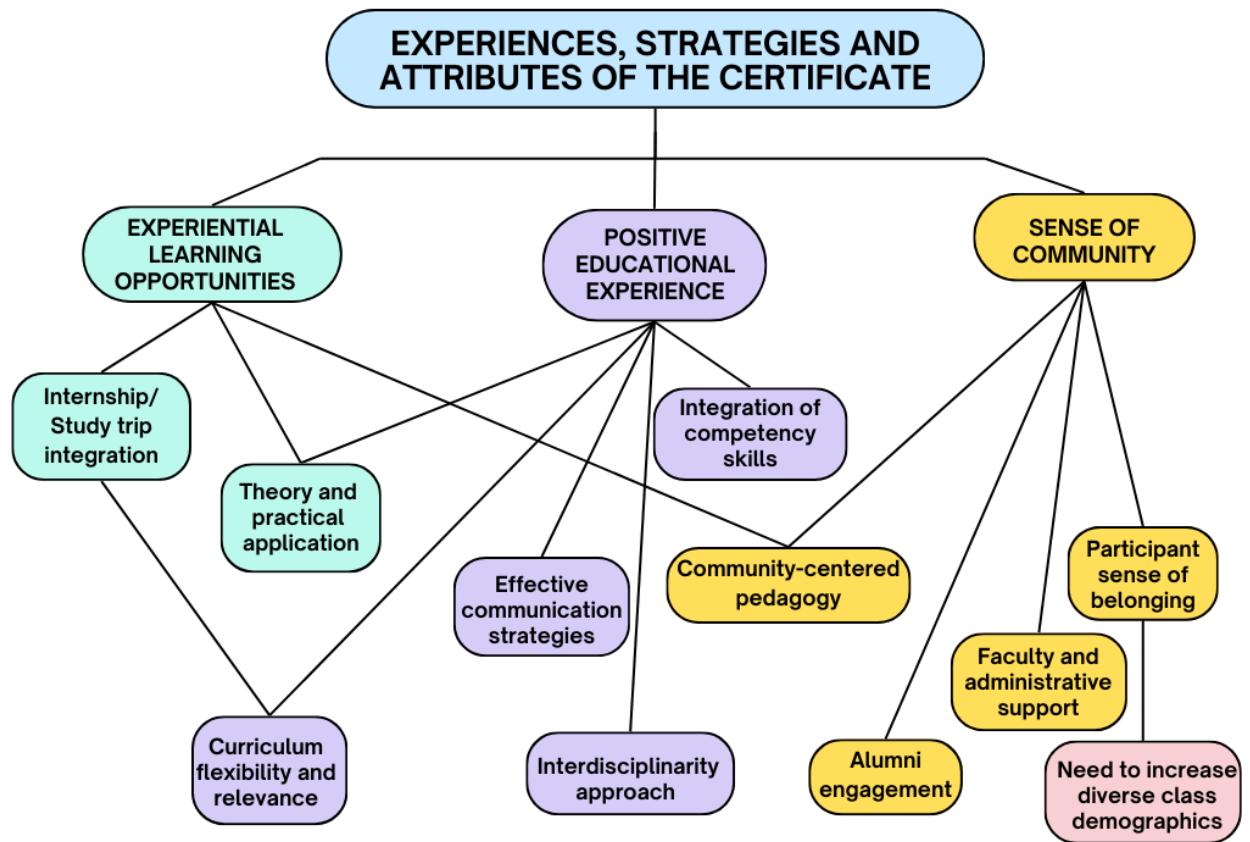
Questions focused on personal growth and sustainability engagement were to me the most spectacular moments of the interview sessions. Because it represents the roots of the impact. I believe that for question 1 participants were able to exemplify how knowledge gained in the course transcends individual practices, leading to active involvement in community projects and specialized work. It seems there is a positive effect of sustainable knowledge acquisition in relation to impactful contributions.

### **Findings block 2**

As mentioned before, figure 4.2 is a theme map that corresponds to the second set of research questions. Among these questions we can find: What was the student experience during participation in the certificate program? What were some valuable strategies and attributes of the certificate? Thus, figure 4.2 represents the resulting themes from student experiences, strategies and attributes of the certificate.

**Figure 4.2**

*Resulting themes from student experiences, strategies and attributes of the certificate*



Experiential learning opportunities, positive educational experience and community engagement strategies were a great outcome from the findings. It was reflected positively through several learning experiences, program requirements, content, curriculum, teaching techniques and activities conducted by instructors. “I feel like the certificate was the best part of my time at UGA. It was definitely my favorite part of UGA. And I'm really grateful that I randomly stumbled upon it because it did impact me to this day” (Daisha).



## **Experiential Learning opportunities**

Experiential Learning opportunities include the practical application value of the program also noted in the findings for the first research question. Experiential learning opportunities were present through courses, internships, study trips and the capstone project. Participant Dakota provided numerous examples of experiential learning opportunities she experiences with the program. “[We] learned a lot about how people interact with waste, which I thought was super fascinating. I think those principles are things that I really carried with me into my professional career, understanding the day to day person's perception of sustainability as someone who's like not studying it or passionate about it. Yeah, that was fascinating. [Another example is] working with the government to create a very thorough guide on how they can implement composting at a wider scale for events was extremely helpful. It felt like, wow, like us as students, I can't believe we're getting this opportunity to work so closely with the actual city government. That was really fascinating as well.” If anything, all agreed with Ana “I think the certificate did a good job of giving you a real world application.”

Students also encountered a strong value on teaching curriculum and strategies. Specifically, they shared long discussions regarding curriculum relevance and flexibility. For example, Jada explained “I did like how there is an option for us to substitute one of the classes. Like I remember we had the list of classes that go within each pillar. ... It just helped it be more applicable to us, because at first it was like everything on the list was just not applicable to what we were trying to do or the ones that we did want to do.” Similarly, George expressed “I basically came to [professor] Ron and I said, hey, here's how I think I can tie my educational learning into the internship; because if not, I'm not going to be able to finish the certificate. We

worked it out. Basically, I broke down what I would do to make sure that sustainability was a part of my internship. Here's what I was going to learn.”

But flexibility was not the only characteristic attached to the curriculum. Its relevance was highly celebrated. For instance, Ana shared how “there was one day where we practiced our elevator pitches as part of the certificate program. We practiced how to present our research Capstone projects. And I hate to say it, but public speaking experience is so important for students because it's such a good skill.” Furthermore, George argued: “I would say that the very first course that you have to take as part of the certificate, the one that felt almost like an intro course, I think gave me a really good foundation for figuring out what problems different organizations have as far as sustainability goes.”

Internship and study trip integration were great examples of experiential learning opportunities. For example, Dakota expressed: “we got to do that field trip for about a week, which was like one of the best experiences I had in college. That was really cool. We farmed and harvested sugarcane for five days, things like that. I think it is genuinely life changing and really educational.” George gave some student suggestions pertaining to these learning experiences. “I also think that students should seek out internships. ... Obviously, employers look at to make sure you have your degree is like a check mark. But they want to see what else you've done. It doesn't necessarily have to be an internship, but it could be volunteer work or like a capstone project and apply for the campus sustainability grant. Everybody loves to see that. Everyone loves to see that you applied for a grant. And then did a project that came up. Even now, I graduated from the program five years ago, I still get to talk about that story anytime I'm sitting in an interview or what got [me] into sustainability.”

Community Centered Pedagogy stood out as well. According to Ana at UGA, “we

recycle, we compost and I think that's easier when you have a community. It's a little bit harder after school when you don't have the infrastructure that you do at UGA.” The community centered approach was also celebrated by others. For instance, Kate shared how “I remember one student, she grew up on a farm in Madison, Georgia. And just hearing her perspective of going into a conversation from that aspect... I didn't grow up on a farm, so then hearing that perspective, each person coming from a different studies background, but more but feel like that's rambling out. But I feel like just honestly, the conversations that we were allowed to have that were fostered, and that community was so valuable.”

### **Positive educational experience**

Students benefit from positive educational experiences. Among the positive educational experiences we can find the integration of competency skills. This strategy not only improves their academic achievement but also equips them with the necessary abilities to tackle real-world difficulties. Although the participants do not refer to the sustainable competency skills (systems thinking, anticipatory, normative, strategic, collaboration, inter/intra personal and integrated problem solving) by their names, they do articulate the acquisition of these skills. According to Daisha, “now I think a lot [on how] the capstone projects are done as a team effort. I think that's very similar to what people are going to have in a work environment afterwards. Just having to take ownership of a project and lead it from start to finish to make sure that you see it through. Just having to have responsibility for a project, I think is a really important skill that I got.” According to Dakota, “working with the different people that we did working at UGArden, you're meeting people who have so many varying understandings of what sustainability means. You have to figure out your messaging based on your audience. And through the certificate program, I was able to do things like a training session with USDA and other things. I think that

lesson of understanding how to communicate the climate crisis and sustainability was huge. And that was implemented through many projects that I did post grad.” Similarly, Jada expressed, “the classes helped us talk about it from different perspectives and expand on that if we can't get the solution that we think that we want. Then maybe like figure out how do we work with people from different majors or how do we read, work on each side to figure out where to go with that.”

Positive educational experience was also seen through effective communication strategies. Dakota stated “for me, the academic value of the certificate [is that] it was a very well rounded curriculum. I liked that they had the three different buckets of social, economic, and environmental.” According to Daisha, “[the program] advertises classes to get certified.” “That was really exciting to me just to see that change in just the few years since I graduated” (Daisha). Moreover, Ana highlighted the differences in social media. “I think the [website] looks great and their socials are active, which is fantastic, but I feel like in person is the best way to go.” Overall, the newspaper was mentioned as an effective communication tool by the majority. According to Ana, “I'm always excited when that hits my box to maintain contact with alumni. I know that the certificate and the Sustainability Committee is pretty active on linkedin. I think communication is really good there. But I'm not a part of any groups for alumni that were started by UGA. I'd be interested in that. If that exists.”

Among the positive experiences, the majority of participants also highlighted the flexibility and relevance of the curriculum. Daisha shared how “all the topics that were covered in the program . . . allowed me to be able to talk about sustainability in a job interview or to come across as being knowledgeable about the subject matter.” She continues by sharing how “[the] seminars [were] really helpful and . . . the public speakers. . . I like that dynamic because it gave me the opportunity to learn something and then try to apply it on your own as well. That

was super helpful in my job as well.” Furthermore, specific classes were mentioned. For example, Dakota shared how “I took a climate change activism class senior year. I feel like that was really important in helping me understand the grassroots movements and working with local communities. I also took the Urban Food Collective class through the Certificate, which really opened my eyes to more of like things on the agricultural side.” Similarly, Ana mentioned “through organic gardening class, you can get plugged into volunteer organizations and that's going to help boost your resumé. And same with the landscape architecture class. There are like forms that they would host outside of class where you could meet city planners and other big folks in the industry.”

According to Dakota, “in terms of class content, the discussion based classes are really cool. Like when we would get to debate with different class members, classmates and get certain topics that we would present on. I think like a chance to present and speak like all classes that incorporate those types of opportunities.”

All participants addressed the program's interdisciplinary approach. This method encourages collaboration across various fields of study, enabling students to integrate diverse perspectives and develop comprehensive solutions.

According to Daisha, “in terms of academics, I like that there's just so many different types of classes that you could take all related to sustainability, whether you were in the more liberal arts majors or science, business like; it felt like to me there was actual value to anyone of any major that was pursuing the certificate.” Similarly, George shared “you get exposed to so many majors and curricula that you might not have otherwise been exposed to.”

Kate also shared the relevance of this mindset in the work space. “When you go into an interview to ask all the questions of what skills do you have, what do you bring?” “When I say

interdisciplinary, that word, . . . you could see the light bulbs going off like wow, how cool, and learning that it was students from so many different majors . . ., but you're also trying to use the terminology that people want to hear sometimes.”

### **Sense of Community**

Engagement is an effective teaching method that enhances educational experiences and boosts student achievement. According to Daisha, “if I could say one word to describe the certificate of sustainability, it would be community because that was something that they were huge on.” Similarly, Kate argued that “the community was a big thing, I miss all of those folks and any time I get to see them refuels and brings back another reason why we're doing what we're all doing.” “I feel like I would have a bullhorn talking to everyone, . . . that was cool. But for smaller classes, because the large auditorium ones, you would lose, lose people.”

For some participants the sense of community has prevailed throughout time even after graduation. According to Daisha, “I'm still connected with so many people that were in the year that I graduated that were in my classes. And I know that I have questions or if people are looking for jobs, like everyone is always so willing to help each other and stay connected.” Similarly, Ana expressed, I will also say two of my best friends are friends I've made in the certificate program . . . That friendship was built on the certificate program and the sustainability community at UGA.”

One of the participants even associated the word community with her own perception of what sustainability is. “Sustainability is really about community and us pooling our resources together” (Jada).

Participants described the certificate's community-centered pedagogy by providing examples of how it incorporated community participation into academic instruction. For

instance, Jada and Kate offered profound reflections on the seminars. According to Jada, “I like that at the beginning of the classes we could talk about the events that were happening. Yeah. And things that made me smile [and] that relate towards the environment.” Similarly, Kate expressed “the seminar class . . . I feel like that was so important because it allowed us to all come together.” “I feel like it was just an open round table where we could have those discussions. Not everyone agreed, but at least we came to the table with one hope and dream of what we wanted, . . . for a better environment around us and for our community. But I think that was really important because it let us honestly flush out a lot of ideas, talk through things.” According to Jada, “I like that a lot of things were discussion-based because we had to come back and talk about it as a group. And it wasn't like we were just reading an article and then we wrote about it like we had to like to talk about how it affected us.” In particular, Kate remembered those Monday mornings with great nostalgia “looking back at all, what I would give for one of those seminar mornings where we had tea, and I'm pretty sure [professor] Ron brought honey from his farm. And those are some of the most special mornings. . . . just the people, what I would give to be able to go back to something like that just for a day.”

Similarly, faculty and administrative support were frequently highlighted by all participants. According to Kate, “Ron is such a kind and compassionate person who would make anyone feel welcome, who walked through that door for the [UGA SCP] and the way that he created and fostered such a welcoming community. I think it really inspired me to constantly, like he said, the human first, wherever I go.” Similarly, Jada shared “I guess the classes themselves [were a great experience], like the seminar class, because since it's taught by the director themselves, they're able to set the tone or what we're learning in the class and stressing the importance of it.” Furthermore, Ana expressed: “I had great administrators when I was in the

certificate program. It was a woman named Melissa . . . , the teaching assistant for Dr. Ron Balthazar . . . I think about him like once a day. I have no notes for those two. They did a fantastic job.” Participants also celebrated the academic professional guidance of Tyra Byers, one of the sustainability specialists at the UGA Office of Sustainability at the time. For example, Dakota expressed “and then Tyra, she is really good about connecting students with opportunities professionally. I think all of those things really set me up for success after graduation.”

Another topic frequently discussed as a positive experience was alumni engagement. According to Ana, the two most effective strategies for reaching alumni were email and LinkedIn. I think they're doing a good job of that.” Daisha expressed “I think they have been really good about keeping up with alumni. Getting the alumni newsletter and having the networking events.” “[Furthermore,] they've been good about bringing alumni back to talk to the current students.” According to Dakota: “That was cool. I would love to see more alumni events. Honestly, I'd love to be a part of that. Personally, for me, I was reached out to speak at graduation and other things. I think that was cool, that Tyra still thought of some of the alumni opportunities.” Kate recalled the significant impact the alumni sharing panel had on her when she was a student. “I just remember being a student and listening to some of the alumni that came back. And it was like, I didn't even know that was a thing or something. And then reaching out to them afterwards, just to talk.”

Participants' sense of belonging was particularly prominent among the insights shared during the interviews. According to Daisha, “[the program] was a really encouraging and motivating environment to be a part of. Just to be surrounded by everybody that was also passionate about sustainability.” Similarly, Kate expressed: “then you realize that there are other



students that are as passionate as you are about recycling. And then you're like, I'm not the only one.”

Dakota even stated “which is why I think I poured like so much into UGA garden and the certificate, because that was like I guess it sounds cheesy but like my happy place in college.”

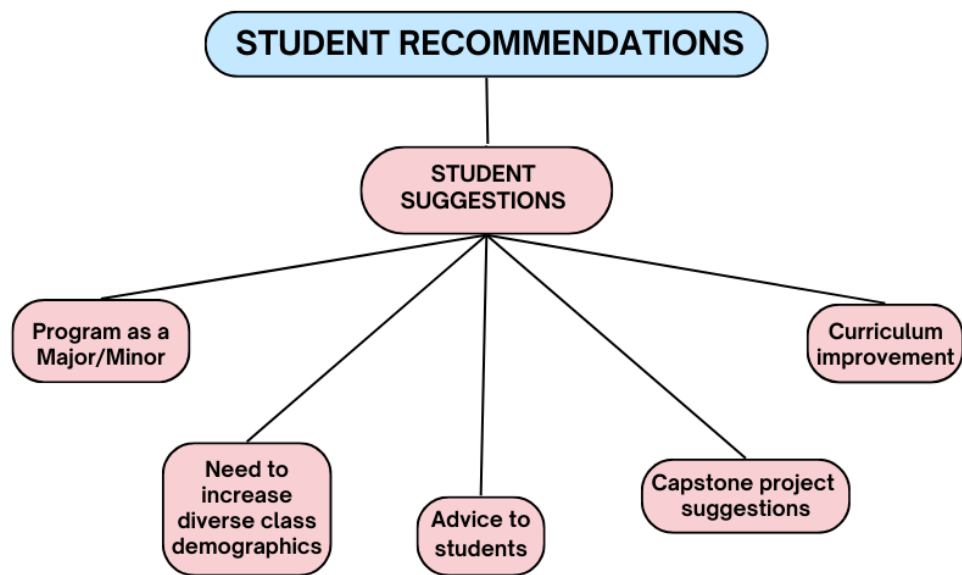
Daisha also mentioned “It's a very, I think motivating certificate to be a part of, just because of all of the students that are in it. I feel pretty much all of the students in the [UGA SCP], at least when I was there, were genuinely passionate about sustainability and really wanted to make positive change and make a difference.” Furthermore, this sense of belonging also influenced students' confidence. According to Ana, “I think it gave me a lot of confidence. I felt like it was like a leg up because it was something unique at the time. I felt confident going into interviews, [I knew I would] have this community to support me whatever I wanted to do.”

Thus, the findings suggest that community is a crucial component for student success and happiness, as it fosters new partnerships, enhances and broadens knowledge, and facilitates significant collaborative efforts. Implementing a high-quality curriculum benefits schools, instructors, and students by streamlining instructional procedures, promoting collaboration, and improving learning outcomes. Consequently, the experiences, strategies, and attributes discussed during the interviews were critical components for the program's effectiveness.

However, students shared several recommendations for areas of potential improvement in the Certificate Program. As part of the investigation, participants were asked to share suggestions for improving the program's effectiveness and impact on students. Their insights are particularly important for the continued growth and enhancement of the Certificate. Figure 4.3 illustrates the resulting themes from participants' recommendations for improving and enhancing the Certificate Program.

**Figure 4.3**

*Resulting themes from participants' recommendations for improving and enhancing the Certificate Program*



The majority of research participants highlighted the need to increase diversity in class demographics.. From racial to academic major diversification, they emphasized the relevance of inclusion, and the need for a more representative and equitable educational environment. According to Jada, “throughout my time there, I was like it was the only black girl in the class. I was just wondering, where is everybody? . . . I really think that the way the [UGA SCP] was marketed towards the general population, it didn't seem diverse. . . . I have noticed that there are more black and brown voices in the [UGA SCP] now. Because I've gone back and then the

alumni panel and I've seen like the room just changed. I'm glad that we're starting to move towards a more diverse certificate program, because this affects all of us and we should know that we should be allowed to be in these spaces too.” She also gave great recommendations to incentivize inclusion not only from the student body but from speakers' representation. “I wish that [the certificate] offered programs or even templates to other organizations that host these programs, so they can learn more about sustainable living from their own cultural standpoint. And not just from, I guess, the white standpoint.”

Pertaining the major representation, Daisha expressed: “sustainability and business are going to have to come together . . . I know it's not necessarily the [UGA SCP] problem to solve, but I guess like trying to mediate somehow, call more students from a business school.” To contravene this issue, Kate suggested “faculty and professors [should know] if they're one of the [elective] classes, or maybe they [could] have the [UGA SCP] Group come to speak. Maybe one . . . of the older [UGA SCP] students from the Capstone come and share their experience.”

Additional suggestions were made specifically for curriculum improvement. According to Daisha, “to faculty teaching certificates, I would recommend the more real life examples the better. A lot of times I feel in college you learn a lot, but don't necessarily know how to transfer it into your real life or into a job afterwards. Just trying to make sure that people can actually relate to it and use what you're teaching after the fact.” In a similar manner, Jada recommended: “we have two seminars, if one of those seminar semesters is out for like a study abroad or like a externship or just something that's more like hands on in the community and we get to experience like sustainability in action versus like the speakers come and talk to us and learning from them . . . like we go to them.”

Some declared the challenges of finding available elective courses they wanted.

According to Ana, “I remember there were certain classes that everyone wanted to take, and they will get filled up. ... I thought [the program] did a great job. It was like tons and tons of choices for what you could take to fill the credit. But just maybe getting more seats in the popular classes.” In terms of content, Dakota mentioned “I wish that there would have been more coursework on like the different sustainability reporting frameworks and more of like the corporate elements.”

Some participants mentioned experiencing challenges when completing the Portfolio reflection. According to Jada, “I tried to do them in retrospect when I should have done them like right when I finished the class and then kept them in the same place.” Therefore, it may be beneficial for the program to place greater emphasis on the Portfolio from the initial encounters with students.

Other recommendations include providing better guidance for navigating the professional world. For instance, Diahsa expressed, “after you graduate, how do you market the [UGA SCP] on your resumé? Or how do you talk about the [UGA SCP] in a job, in your view? Maybe more professional development skills [should be taught] because I feel like if anyone were to help, it's going to be the [UGA SCP].”

One of the very interesting findings of this research was how students describe the potential for the certificate program to become a Major or Minor. According to George, “students have to find a way to make it work in their normal degree program. You have so many hours that you want to take, and you can't really add on too many extra hours if you want to graduate on time. I think sustainability could be a major at UGA. I think it would function better that way. I think there's enough demand for it and there's a couple of different universities who have bachelor programs in sustainability. And I think that UGA could do it. I think that the

certificate has proven that people are interested in it.” Similarly, Jada expressed “ I really feel like this could just be a Minor at this point. ... Like when I was there it was 17 ... not sure if it's 17 or 19 hours... . Yeah. And it's a packed curriculum.”

Other notable findings were capstone project suggestions made by former students. According to George, “Honestly, I think getting more alumni involved in the Capone Project is probably a good way to go just because so many of us have gone off to work for I think really well respected companies.” Another interesting recommendation was made by Dakota. According to her, it could be beneficial to introduce the idea of the Capstone project very early in the coursework. “When I did it, it felt a little bit rushed. [It would be ideal for] that to be such a core part of the program because it is such a great experience (Dakota).” Furthermore, Jada explained how it felt like her options for the Capstone were very limited for her, given her major. “Since I was in ... fashion, ... I felt it was very hard for me to figure out my capstone on my own.” Some participants explained unexpected capstone issues when working with stakeholders. According to Jada: “I mean, that was a good experience but also like [the community partner overseeing] my Capstone project, I don't think she was really equipped to work with us.” Similarly, George explained: “I had to quickly adapt and figure out who was going to take responsibility for the project now that I was graduating and my professor had passed away. So yeah, it was a challenge but it was a learning experience.”

Last but not least the participants offered some advice to current certificate students. According to Dakota, “I would tell [students] to look into internship opportunities at the Office Sustainability, to subscribe to the sustainable UGA newsletter and to get involved with the major sustainability organs at UGA ... . I'd challenge them to look into the different majors related to sustainability. But also like to bring sustainability into the major that they're already in or

interested in. Like you don't have to be a sustainability major to pursue [sustainability]. And that's what the certificate is about. Like it meets people where they are with their current path and their current curriculum pathway.”

George encouraged students to get involved in the certificate by highlighting the value of sustainability concepts and emphasizing their transferability and potential use in most situations. “Just because my undergraduate work was in biology. And I would sit in my cell bio class sometimes and I was like, I am never going to use this again in my life. I have no motivation to be here right now. But sustainability, I can basically say I've used everything I learned in my sustainability courses, at least once. I think it gives you a practical application for the skills you're learning.” Then, Ana argues: “[I recommend] for students to get involved in any way that you can. I know the certificate program is fantastic and I think that's the best way. But if it's not going to work with their schedule or whatever the reason may be, get involved in another way. There are so many volunteer organizations. You can look at the top of the geography building and volunteer at the green roof ... . Like there's so many opportunities to get involved, so do that, and see where it goes. But the certificate is obviously the best.”

Overall, these findings indicated that the curriculum, content, and teaching strategies were positively reflected through various learning experiences, program requirements, teaching methods, and activities conducted by instructors. Participants’ feedback and recommendations emphasized the program's strengths while also identifying areas for potential improvement, such as enhancing demographic diversity of students participating in the program.

## CHAPTER 5

### DISCUSSION AND CONCLUSIONS

#### **Discussion**

Participant responses gave insight into student experiences, what the certificate meant to them and what are the potential areas to be improved. Overall, results show that the graduate certificate program has a beneficial impact on students' personal and professional development. The results of our research support Kolb's (1984) experiential learning theory, which highlights the significance of knowledge acquisition, reflection, growth and experience during the process of learning. This includes transformative educational learning, career and professional development, and sustainability involvement initiatives. Experiential learning opportunities, sense of community and positive educational experiences, such as interdisciplinary approach, curriculum relevance and flexibility, competency skills and effective communication strategies proved to be the best experiences, strategies and attributes of the certificate. Furthermore, student suggestions open space for curriculum improvement, need to increase diverse class demographics, capstone project suggestions and the potential of the program to escalate to a Minor or Major.

#### **Transformative Educational Learning**

Participants frequently reported significant personal growth and development as a result of completing the certificate program. During the interviews, research participants expressed feelings of self-efficacy, excitement, motivation, hope, and confidence, as a result of completing the program. Daisha's insights, for example, illustrated how the program empowered her to engage confidently and enjoyably in discussions on sustainability, sharing her expertise and personal contributions with others.

Participants also regarded the program as a transformative educational experience due to its comprehensive approach to sustainability education. Ana underscored this view, stating that the program effectively provides students with a deep understanding of sustainability. The positive effects of the program appeared to extend beyond graduation, with participants reporting various sustainability initiatives and involvement. It seems that the program had a lasting impact on their career paths. Most importantly, the program equipped students with practical skills to tackle real-life challenges.

Indeed, participants frequently emphasized the importance of applying knowledge in real-life situations and learning through direct experience. The capstone projects, specifically, received significant recognition for their practical applicability. Kate noted that the capstone projects have a tangible impact on the community and contribute to real-world change. She highlighted that these projects not only impart theoretical knowledge in the classroom, but also provide practical applications in real-world scenarios. This practical approach not only deepened students' understanding of sustainability principles but also equipped them with essential competencies and skills for their professional careers. George's experience exemplifies the program's partnership and relationship with alumni. In this case, George is not the student, but the knowledge provider. "One of the reasons I wanted to integrate [my current job business] with capstone students is because I understand the significance of that aspect of the certificate project."

Participants also celebrated the holistic perspective on sustainability offered by the program. For some, it helped them identify their true passions. This was the case of Jada, who realized her desire to pursue a career in sustainability through - and because of - the program.. The interdisciplinary nature of the program was frequently cited as a significant benefit. Dakota,



for example, highlighted how this approach expanded her systems thinking ability, noting that one can always find connections to sustainability regardless of the subject or field. This interdisciplinary approach not only allowed students to discover a wide range of sustainability topics, but also encouraged adaptability, open-mindedness, and curiosity, which proved advantageous in their professional careers.

Participants also regarded the program as a transformative educational experience due to the sustainability knowledge they acquired. All participants reported ongoing involvement in sustainability, whether through their professional work, volunteering, at home, or through sustainability projects and initiatives. Thus, they have found a way to continually apply the knowledge and skills gained through the program.

Overall, the UGA SCP has effectively fostered a profound understanding of sustainability while equipping students with the Experiential Learning Model to address both local and global sustainability challenges. The combination of theoretical knowledge and practical application has helped shape the participants into professionals in the field of sustainability.

### **Career and Professional Development**

The statements from the former students suggest that the UGA SCP had a profound effect on their career and professional development. Participants frequently emphasized the positive impact of the certificate on job interviews, resumes and sustainability knowledge expertise. Daisha specifically highlighted how the use of sustainability language, jargon, and keywords can be highly beneficial when applying for sustainability jobs, as it demonstrates a deep understanding of the subject and strong communication skills. Similarly, Dakota stressed the importance of including the credential on their resumé when seeking employment.

Participants also argued that the certificate program equipped students with the sustainability foundational knowledge and the necessary skills for the job market. Jada's experience with her capstone project serves as a prime example of how she discovered her passion for sustainability consulting and gained practical expertise that she could apply in real-world situations. George, on the other hand, highlighted the significance of practical experience, stating that an internship he completed as part of the curriculum gave him a direct comprehension of sustainability in an actual corporate environment.

The program's networking opportunities were strongly beneficial to the student's learning and collaboration experience. Daisha discussed the significance of establishing enduring relationships with those who share a similar passion for sustainability, while George underlined the value of students proactively creating professional contacts during guest speakers or events.

The program also cultivated a sense of hope and purpose among the students. Daisha described the program as one that reinforced her self-efficacy and her ability to create a positive impact in the field. Jada also underlined the need to utilize education to improve communities and the planet. This sense of hope and purpose was strongly related to their motivation and sustainability commitment - an inherent characteristic of their personalities. Students exhibited a high level of passion for the curriculum and sustainability as a whole, which directly correlated with their ambition to pursue sustainability roles in their professions or daily practices.

Another element that strongly influenced participants' career choices and professional development was faculty assistance and mentorship during the program. Kate, for instance, shared with strong enthusiasm the positive influence of specific mentors and teachers, such as Ron Balthazor. One of the most important lessons he taught her was the significance of prioritizing humanity in her interactions, behavior and decision making.

In summary, the certificate program not only equipped students with practical skills, support, purpose and knowledge, but it also served as an excellent experiential learning tool to use during job applications and interviews. Additionally, the certificate has served as a great source of direction and assistance for the former students' present careers. As Jada eloquently explained, “sometimes people do ask me, why do you care about the environment or what's your background in this? I try to praise the Sustainability program, whenever I can.”

### **Sustainability Involvement**

Throughout the program, participants actively participated in a range of sustainability-related activities while successfully earning the certificate. For example, Ana completed internships with the Office of Sustainability, first serving as a social marketing intern. Kate acquired practical job experience during her internship at the Office of Sustainability as well, and Dakota was actively involved in UGAGarden events, which had a significant impact on her present interests and professional trajectory.

The program's influence on sustainable initiatives extended beyond graduation, as the majority of participants chose to pursue occupations related to sustainability. Daisha was hired as a sustainability analyst at an Engineering and Sustainability Consulting company. Kate currently holds a position in the recycling division, while Jada has assumed an important role in Creative reUse Center, which is a nonprofit organization. George is employed at Yamaha, where he oversees sustainability efforts for the entire Marine division.

The participants also showed sustainability engagement in their involvement with volunteer work and personal efforts. Jada volunteered at a sustainable arts organization, which ultimately resulted in her being hired. Dakota served as a volunteer at the Atlanta Urban Food

Farm and Forest. Ana actively volunteers in Trees Atlanta and Jada curates a sustainability blog to provide greater accessibility to eco-friendly lifestyle choices for a wider audience.

Furthermore, the program cultivated a feeling of empowerment and agency among the participants. For example, Kate successfully conquered her fears of speaking in front of an audience and developed self-efficacy in addressing sustainability challenges. Dakota, on the other hand, actively participates in the field of education, delivering speeches at conferences, and contributing to the development of sustainability programs.

The program either stimulated or reinforced participants' passion for sustainability. While Dakota always had an inherent interest in sustainability, other participants found their passion through the program. This commitment has resulted in continuous engagement in sustainability initiatives and has impacted personal and professional decisions.

### **Experiences Strategies and Attributes of the Certificate**

Research participants offered invaluable insights into students' educational experiences, effective teaching methods, and communication strategies, as well as identifying potential areas for improvement.

### **Experiential Learning Opportunities**

The UGA SCP offered a variety of hands-on learning experiences that had a significant influence on the personal and professional growth of students. The participants particularly recognized the practical applications offered through courses, internships, study trips, and capstone projects.

Participants frequently highlighted the program's practical utility. For instance, Dakota explained how the curriculum bridged the gap between classroom education and practical situations in the real world. She was captivated by studying the ways in which individuals

engage with recycling materials and how these concepts influenced her professional trajectory. In addition, Dakota showcased a project in which students collaborated with the local administration. Overall, the practical experience provided students with a valuable opportunity to collaborate closely with different stakeholders.

The program's curriculum received a lot of attention for its relevance, adaptable nature, and flexibility. Jada, for example, valued the opportunity to choose specific courses that matched her interests and professional goals. Similarly, George emphasized the importance of having the option to choose an internship under the program requirements. Thus, the program's versatility creates a more inclusive environment, where students from many academic disciplines can join. It exemplifies its interdisciplinary and holistic vision of sustainability.

The program encompassed practical skills, such as collaboration, conducting elevator pitches, delivering research capstone projects, among others, which turn out to be indispensable for professional growth. Similarly, participants brought out the relevance of internships and study trips. Dakota characterized a college field trip as one of her most remarkable experiences, during which she engaged in the cultivation and harvesting of sugarcane. This experience was both transformational and instructive.

The program's pedagogy, which focused on the community, was greatly appreciated. Ana described the UGA sustainability community as active. Their promotion of sustainable initiatives inspired her to support recycling and composting. Kate emphasized the importance of having a variety of perspectives in the program, as students with varying backgrounds and areas of study contributed all together in many ways. The use of a community-centered approach facilitated meaningful dialogues and instilled a feeling of sense of belonging among the participants.

The UGA SCP offered students practical skills and knowledge through experiential

learning opportunities, a flexible and relevant curriculum, and a community-centered pedagogy. These aspects equipped them for sustainability challenges in the real world after graduation, and fostered strong feelings of community and mutual support.

### **Positive Educational Experience**

Positive educational experiences are essential for students, as they improve academic performance and are also essential for faculty and program administrators. They are vivid examples of effective curriculum and successful teaching strategies and methods.

Throughout the program, participants were able to express their understanding of sustainability trending topics, concepts, and sustainability competency skills through reflections. As part of the capstone project, they applied those learned lessons and skills in practice. Daisha, for example, emphasized the significance of capstone projects, which necessitated students to assume responsibility and guide projects from individual derivables to group work completion. This experience reflected the characteristics of actual work environments, where it is crucial to effectively oversee and successfully conclude projects. Similarly, Dakota highlighted the importance of collaborating with varied groups of individuals at UGArden, which enhanced her ability to communicate effectively and relate to a specific audience.

The curriculum also facilitated interdisciplinary collaboration, a prominent issue discussed by all participants. This methodology enabled students to integrate systems thinking skills and analyze different potential solutions. Daisha valued the diverse range of sustainability-related courses because it enhanced the quality of students' education. Similarly, George argued that being exposed to many majors and curricula expanded his comprehension and equipped him for a wide range of professional settings.

Another positive educational experience was the effective communication strategies used by faculty and program administrators. Dakota commended how the comprehensive curriculum encompassed the social, economic, and environmental dimensions of sustainability. Daisha clearly described the program's efforts to promote participation in classes and community engagement via class discussions, social media, newsletters, and maintaining alumni interested and well-informed. Ana particularly highlighted the significance of face-to-face encounters and the value of staying connected with alumni through different communication mediums. Dakota expressed great satisfaction with engaging in class debates and delivering presentations on a wide range of subjects, which significantly enhanced her abilities in public speaking and critical thinking.

The majority of participants also explained the curriculum's flexibility and relevance. Daisha expressed how the program's curriculum provided her with the tools to discuss sustainability confidently during job interviews. In addition, she valued the seminars and public speakers, for offering chances to acquire and implement fresh knowledge. Dakota highlighted particular courses, such as climate change advocacy and urban food collective, that broadened her perspective on grassroots movements and agricultural concerns. Ana too emphasized the advantages of courses such as organic gardening and landscape architecture, which facilitated students' engagement with volunteer organizations and professionals in the sector.

The UGA SCP offered a beneficial educational experience by incorporating competency skills, effective communication techniques, and a flexible, relevant curriculum. These elements not only enhanced students' academic performance but also provided them with the essential skills that would eventually promote personal growth and professional advancement.

### **Sense of community**

The UGA SCP facilitated the development of community among students. As participants expressed during their interviews, community engagement is an effective teaching method that enhances educational social experiences and provides students with collaboration opportunities. Daisha characterized the UGA SCP as a cohesive community, highlighting the strong relationships forged among students. She observed that the program placed great emphasis on fostering a sense of community, describing it as a core value. Similarly, Kate emphasized the significance of the community, stating her durable relationships with other program former students and how reestablishing connections with them reignited her enthusiasm for sustainability. Probably the most mentioned theme among participants was that continuous sense of community support and engagement.

For some, the involvement in the community has continued to exist even after completing their studies. Just like Kate, Daisha stated that she maintains strong connections with a large number of her classmates and that they continue to provide professional support to one another. Jada also linked the idea of sustainability with community, highlighting that sustainability involves the consolidation of resources and collaborative efforts.

Participants described the pedagogy as one that prioritized the student advocacy by integrating community involvement into academic teaching. Jada and Kate perceived these opportunities as a great chance to deliberate with others and critically analyze social, economic and ecological sustainability issues. Kate even remembered the seminar mornings, during which they would have local tea and participate in significant discussions, emphasizing the importance of these exchanges in cultivating a feeling of community and common goals.



Participants noted the value of the intellectual and professional mentorship provided by Tyra Byers, one of the sustainability specialists at the UGA Office of Sustainability at the time. Dakota celebrated Tyra for facilitating students' access to professional opportunities, guiding their success post-graduation. Overall, the involvement of faculty and administrative support was essential in fostering a favorable educational experience. Kate characterized Ron Balthazar as an individual who possessed benevolent and empathetic qualities, fostering a sense of inclusivity among others. Indeed, her admiration motivated her to incorporate these principles into her own career.

Alumni involvement was an important finding that added to the favorable educational experience. As a student, Kate remembered the significant influence of alumni sharing panels throughout her college years, which offered excellent perspectives and motivation for her own professional trajectory. Ana and Daisha expressed their gratitude for the initiatives taken to maintain alumni engagement through newsletters and networking events. Similarly, Dakota expressed her preference for more alumni events and shared her positive experience of being invited to give a speech at the program graduation.

The participants' positive educational experiences were significantly influenced by the feeling of belonging and community. Daisha characterized the program as a stimulating and inspiring environment. Kate agreed with this sentiment, highlighting that finding students who had the same level of enthusiasm for recycling helped alleviate her sense of isolation at UGA. Dakota even expressed that UGA garden and the certificate program were her happy places during her college years.

Community participation played a crucial role in the UGA SCP, enhancing educational experiences and promoting a sense of belonging among participants. The program's focus on

community, faculty support and guidance, and alumni involvement fostered a special and positive environment, a community.

Although many participants experienced a strong sense of belonging, engagement in the community, curriculum flexibility, collaboration and abundant opportunities for all, some participants felt that the certificate program lacked diversity in some areas. As stated in the students' suggestions section, there is an apparent need for the diversification of class demographics.

### **Student Suggestions**

Most students underlined the necessity of improving the program's varied demographics. Jada specifically emphasized the absence of racial inclusiveness during her participation in the program, pointing out that she frequently found herself as the only Black female in her class. She also expressed great satisfaction that the program has become more diversified in recent years. Jada proposed a potential solution to reach out to other UGA clubs and associations, and educate them about sustainable living from diverse cultural perspectives. Another piece of advice was to incorporate more representative guest speakers, rather than the usual typical topics, viewpoints or racial representations.

Daisha emphasized the necessity of closing the gap between sustainability and business by proposing initiatives to attract a greater number of students from the business school. One solution came from Kate. She suggested that staff and lecturers from elective courses could invite speakers or alumni from the UGA SCP group to discuss their experiences, which could potentially generate more interest from students in different majors, especially from disciplines not typically involved in the sustainability field.

Daisha stressed the significance of integrating additional real-world experiences into the curriculum. She explained that students frequently encounter difficulties in applying their acquired knowledge to real-world scenarios or employment opportunities post-graduation. In this sense, Jada suggested substituting one of the seminar semesters with a study abroad program, internship, or hands-on community involvement to offer greater practical immersion in the concept of "sustainability in action."

Regarding the curriculum, Ana highlighted how difficult it is to secure a course spot in highly demanded elective courses due to the limited number of student seats. She proposed increasing the seating capacity to enhance student accessibility. Another curriculum recommendation was made by Dakota, noting a need for further courses focused on various sustainability reporting frameworks and business components, highlighting the necessity for more specialized and industry-specific knowledge. Daisha even suggested that the program could offer additional support for professional development skills, such as the ability to promote the UGA SCP on a resumé or discuss it during job interviews. This assistance could enable students to effectively utilize their certificate in their professional settings.

Furthermore, the proposal to convert the certificate program into a major or minor was novel and intriguing. George explained that students frequently encounter challenges in incorporating the certificate into their degree programs as a result of credit hour limitations. Given the demand and interest in the discipline, he proposed that sustainability could be more effectively implemented as a major at UGA. He and other participants argued that the certificate has the potential to offer a more comprehensive and integrated educational curriculum for students who are impassioned about sustainability.

Additionally, students identified capstone project challenges. Jada stated that her choices for the capstone project were severely restricted as a result of her fashion degree, which was a challenge for her to independently determine an appropriate project. This emphasizes the necessity for a greater range of capstone choices that accommodate students with different academic backgrounds. George proposed that increasing alumni participation in the capstone project could be beneficial, as numerous alumni have secured positions in prestigious companies and could offer useful perspectives. Dakota suggested incorporating the concept of the capstone project into the beginning stages of the coursework. This could enable students to adequately prepare for and actively participate in their projects. Similarly, but in terms of the portfolio, Jada identified challenges with the reflection process required for the portfolio, proposing that the curriculum should prioritize academic support for portfolio development right from the start of the program. Thus, improved faculty guidance and problem-solving skills are beneficial during times of challenges.

Additionally, certain participants encountered unforeseen challenges while collaborating with stakeholders on their capstone projects. Jada indicated that the individual responsible for hosting her capstone lacked the necessary skills and resources to effectively engage with students, resulting in difficulties. George also recounted an incident in which he had to promptly adjust and assume accountability for a project following the unfortunate demise of his professor. This highlights the necessity for improved readiness and assistance for students and individuals participating in capstone projects.

Furthermore, alumni provided excellent guidance to current students. Dakota urged students to explore internship prospects at the Office of Sustainability, sign up for the sustainable UGA newsletter, and actively engage with prominent sustainability organizations on campus.

She stressed that students do not need to be sustainability majors in order to engage in sustainability, and that the certificate program accommodates students at their current stage in their academic journey. Similarly, George emphasized the significance of sustainability principles, stating that he had applied all the knowledge gained from his sustainability classes at least once in his professional trajectory. Ana advised students to actively engage in any available opportunities, regardless of whether the certificate program aligns with their timetable. She recommended investigating volunteer opportunities and other sustainability activities on campus, highlighting the multitude of ways to get involved with sustainability that go beyond the certificate program.

Overall, the students' suggestions reflect their care for program improvement and ongoing evolution. The recommendations encompass a wide range of program features, including demographic representation, curricular content, and structure. This reflects the diverse and complex nature of sustainability education. By implementing these suggestions, the curriculum can enhance students' readiness for real-world sustainability concerns and cultivate a more stimulating and inclusive learning atmosphere.

## **Conclusions**

### **Summary of key findings**

The insights gained from former students' experiences at a sustainable university program offer invaluable educational research. These findings contribute significantly to existing literature by highlighting the long-term impact of the sustainability certificate program on students. This focus fills a gap, as most prior research was conducted on current participants rather than alumni. The results demonstrate the potential benefits of the program for personal and professional growth and student experience, while also indicating areas for improvement. Policy

implications include the need for more flexible and individualized program structures, improved financing and resources for diversity and inclusion programs, and more heterogeneity in capstone project topics.

These testimonials highlight the transformative power of knowledge. The program has instilled a renewed sense of hope and purpose, emphasizing the importance of securing a better future for future generations. Students' passion for sustainability translated into a commitment to adopting more sustainable practices and considering the ethical dimensions of professional work.

The primary value of the program lies in its interdisciplinary nature, both in content and flexibility, allowing it to accommodate students from various fields and areas of expertise. Our study supports the findings of Lozano et al. (2015), highlighting the significance of interdisciplinary approaches and curriculum relevance in promoting positive educational experiences.

Participants provided useful recommendations, particularly highlighting the need for a UGA sustainability-based degree for those students who wish to study sustainability more deeply.

Overall, participation in the UGA SCP profoundly influences students' experiences. The program contributes to a mindset shift and encourages sustainability competencies and conscious sustainable practices. Consistent with the importance placed on sustainable competency skills for sustainability by Wiek et al. (2011), our research demonstrates the beneficial effect of hands-on learning and the development of competency skills in the sustainability certificate program. These attitudes manifest in daily actions, leading to purposeful lifestyle changes and the adoption of eco-friendly practices. Moreover, participants perceive the curriculum as effective in addressing environmental issues, with their perceptions highlighting the positive impact of the

elective course. The formal and operational elements of the curriculum contribute to an increased awareness of sustainability's role in daily decisions, reflecting a transformative impact on students' ways of acting and thinking.

### **Recommendation for Educators and Researchers**

In practice, educators should consider different ways to incorporate more hands-on, experiential learning opportunities into their courses, offer more structured networking and mentorship programs, and create a more inclusive and supportive learning environment for students of color and other underrepresented groups.

Experiential learning can serve as a guiding principle for certificate programs, functioning as a systematic method for personal growth, skill development through experience, and knowledge acquisition. Integrating experiential learning techniques into certificate programs can enhance students' readiness to apply their knowledge in real-world situations. Thus, revisions of evaluation methodologies in experiential learning should ensure that student development is assessed comprehensively, including the practical application of skills and theory in addition to knowledge acquisition. The inclusion of periodic reflection assignments and the Portfolio have proven to be fundamental tools at the UGA SCP, since they contribute to the development of student's critical thinking skills and sustainability understanding. Considering that the capstone project has received suggestions for enhancement and that the incorporation of competency skills has been discussed indirectly, there is potential for improvement and more efficient evaluation in these specific areas.

### **Study limitations**

Although this study provides vital insights on the certificate program, it is important to understand its limits. As a qualitative research, the findings cannot be generalized to a broader

population or different contexts, thereby restricting their wider applicability. By conducting a quantitative study, we could examine the influence of the certificate on a representative sample of students.

Furthermore, the data collecting and analysis procedure may have been impacted by personal experiences. As a researcher, I continuously reflect on myself to reduce any potential biases. Additionally, the subjective nature of coding and theme development may result in varying interpretations among various researchers.

To further this study, conducting additional individual interviews or a focus group among participants would be beneficial. If a larger sample can be recruited, this step in data collection could reveal more connections or themes across their experiences. For instance, a focus group interview might uncover additional insights missed in the initial analysis and foster further connections among the participants. Furthermore, doing research on the acquisition of competencies, which involves evaluating competencies before and after the program and having students evaluate themselves at the end, could provide a more thorough insight into the program's success. Subsequent investigations could address these limitations to continue the delving into the impact and outcomes of the certificate program.

### **Future Research Directions**

In contemplating the trajectory of future research, my intention is to delve deeper into effective educational programs in higher education contexts. Advancing this research project will require careful examination of methods suited to the various aspects of possible initiatives. To broaden the scope of this research in the future, I might implement a phenomenological method. A phenomenological approach is suitable for investigating human experiences that are subjective, emotional, and frequently strong (Merriam & Tisdell, 2015). Similar to this study, I



will use a rich, thick description and researcher reflexivity for more trustworthiness in my findings.

I believe that this future research direction is not only an extension of the present study but an evolution, aiming to contribute more comprehensively to the broader discourse on the challenges, triumphs, and intricate dynamics shaping the journey of students at the University of Georgia.

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## APPENDICES

### Appendix A. Email sent to Alumni

*UGA Sustainability Certificate Students and Alumni? Let's hear your feedback!*

Hello [participant's name],

My name is Laura Beatriz Montes de Oca Vazquez. I am a graduate student studying in the Agricultural Leadership, Education, and Communication department, and a graduate assistant under the direction of Dr. Maria Navarro (mnavarro@uga.edu), and I need your help this semester! I am conducting a mixed methods Master's thesis about the impact of UGA's Sustainability Certificate on student participants, aiming to explore the most effective strategies in enhancing their overall engagement. I want to learn about your experiences and to identify areas for improvement within the program.

Are you...

- A student who is enrolled in, or has completed the UGA Sustainability Certificate program?
- Open to spending about an hour sharing your story with me?

If you answered yes to these questions, I'd love to meet with you and chat for about an hour about your experiences, good or bad, and discuss what you'd like to see in the future of the

certificate to help students like you succeed in the world of sustainability and gain the most from this opportunity. No pressure, no right or wrong answers. Your input matters.

Sound like something you'd be interested in? Please review the attached consent form and email me at [lbm88254@uga.edu](mailto:lbm88254@uga.edu) to ask any questions you may have and if you agree to participate in the interview, set up a time to meet. Again, I don't expect the interview to last more than an hour.

Thanks in advance. I look forward to hearing from you soon!

Laura Montes de Oca

(consent form attached)

## **Appendix B. Interview Protocol Form**

Exploring the Impact of UGA's Sustainability Certificate on student participants

### **Introduction**

My name is Laura Beatriz Montes de Oca and I am working on a research study about the impact of the UGA Sustainability Certificate Program and student experiences for my Master's thesis under the direction of Dr. Maria Navarro.

Thank you for agreeing to meet with me for this interview. Before we continue, I want to give you the opportunity to ask any questions about the research and the consent form I sent you.

(Have consent form in front of you and offer it for review if necessary)

(Ask for signed consent form or provide a new one for signature) - give a copy.

Thank you for your willingness to participate. This interview will take approximately one hour.

### **Purpose of the Study**

The purpose of study is to assess the impact of UGA's Sustainability Certificate Program on student participants and explore what strategies were most effective in enhancing the student experience.

### **Interview Protocol 1 Questions**

Note: Some interviewees may participate in just one of the interviews (1 or 2), while others may do an interview that integrates interviews 1 and 2. The last three questions of this interview 1 will be eliminated if the participant is doing both interviews.

1. What drew you to participate in the UGA Sustainability Certificate Program, and how did you first discover about it?
2. What is the academic value of the certificate?

a. In what ways has the certificate program enhanced your comprehension of real-world sustainability-related issues?

b. Does the UGA Sustainability Certificate Program provide students with the know-how and abilities needed to address today's environmental issues and promote positive social change?

3. Would you kindly give a brief summary of your additional education and work experience after earning the UGA Sustainability Certificate Program?

4. After finishing the certificate program, have you been active in any sustainability-related projects or initiatives (work related or not work related)? If so, kindly describe your role and the significance of your efforts.

a. How about community or civic activities pertaining to sustainability?

5. Did the certificate impact any of these things you have discussed, or how do you think the UGA Sustainability Certificate Program influenced your professional growth, academic development and decision making?

a. Could you provide any particular examples where the skills and information you acquired from the certificate program helped you in your personal or professional life?

b. For example, any project you have been involved with, changes you have implemented in your life, changes in your way of thinking, etc.

c. What aspects of your self-efficacy and confidence in handling sustainability concerns have you found the certificate program to have improved?

6. What drew you to the certificate? And/Or... how did you find out about the certificate?

a. Internal or external?



b. Could you describe effective communication strategies used by the UGA Sustainability Certificate Program to inform about the certificate and reach out to (or recruit, maintain contact with) students and alumni?

c. Which strategies, in your opinion, have done the best job of communicating the objectives and core values of the program?

7. In your opinion, does the curriculum of the certificate program correspond with the demands of the industry and the contemporary sustainability challenges?

a. Are there any particular areas where the curriculum needs to be expanded or enhanced?

8. Could you provide any particular examples of different formal and operational aspects of the curriculum (for example, the content of the courses, and the how the content is taught) that were best or most helpful to you?

a. Why were they the best?

b. How did they help you?

c. Do you have any suggestions or ideas that could make the curriculum even better?

9. I want to ask you to make some recommendations. What would you recommend to students interested in sustainability at UGA, to faculty teaching in the certificate, to administrators of the certificate. Any other recommendations?

10. Is there anything I have not asked you that you would like to share with me? Kindly feel free to share any more thoughts or comments you may have about the certificate or my research. Feel free to contact me by email in the future with any questions or suggestions.