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Cultivating a Collaborative Culture for Ensuring Sustainable Development Goals in Higher Education: An Integrative Case Study

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Abstract: Higher education institutions (HEIs) are not insulated from the challenges facing the planet and have been tasked as key stakeholders in sustainable development (SD). The preliminary data presented in this paper demonstrate that, over the last five decades, there has been a shift toward the categories of SD work that necessitate a collaborative culture that is not traditionally inherent in HEIs. It is offered that when HEIs align their institutional capacities with worldwide efforts to achieve sustainable development goals (SDGs) by 2030 and foster an intentionally collaborative culture, they will become better equipped to face their own unique challenges: becoming "changemaker" universities; collaborating with each other in the knowledge economy; placing students at the center of the teaching and learning process; and fulfilling their "third mission" to partner with external stakeholders and society. This paper will outline the conceptual frameworks used to direct the construction of Wingate University's Collaborative for the Common Good (CCG). The preliminary data from this case study at Wingate University show promise; tracked impact reports show that an intentionally collaborative infrastructure that is designed to contribute to achieving SDGs provided a unique opportunity for this university to meet the needs of the campus and community despite their many social, economic, and cultural challenges that were exacerbated by COVID-19.

Keywords: sustainability; sustainable development goals; higher education institutions; collaboration; framework; common good

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1. Introduction

In one of his first acts in the Oval Office, US President Joe Biden rejoined the Paris Climate Agreement because, despite being an onerous task, hitting the goal of carbon neutrality by 2050 is vital to achieving the UN Sustainable Development Goals (SDGs), established in 2015, by 2030 [1]. However, to meet this ambitious goal, all facets of society need to collaborate and contribute to the SDGs. President Biden took up this mantle and issued a new executive order that named our profound climate crisis as a central organizing principle for all governmental activities in recognition of both the severity of the problem and also the opportunities for innovation that it presents. For HEIs to follow suit, a conceptual framework is needed and became the central research question of this paper: which integrative framework allows HEIs to understand, design, and implement institutional pathways that enable the contributions to SDGs to be foundational organizing principles for HEIs? To fully discover this framework, three interrelated questions include: (1) How do the commitments for HEIs that are emphasized in international declarations and SD literature demonstrate a shift toward collaboration? (2) Which frameworks are

available to build a collaborative culture within higher ed.? (3) How does this shift provide a better pathway for HEIs to thrive in a modern context?

This paper presents a twofold scaffolded framework to offer both the "what", i.e., the content for contributing to SDGs and the innovation of HEIs, as well as the "how", i.e., the method for effectively achieving both of these goals. Literature reviews offer a portrait of eight overarching categories of sustainability work that is happening within HEIs and these have been derived from the international codification for SD [2]. Overlaying these categories within an institutional framework for collaboration that has been offered by Kezar [3] highlights the importance of collaboration in achieving SDGs and the transformation of HEIs. Wingate University's CCG (NC) is offered as a case study, illustrating a way that this conceptual framework has allowed the climate crisis and SDGs to be central organizing principles within a challenging context and how this approach has opened new paths for achieving institutional goals and strategic plans within this institute for HE.

2. Literature Review

For decades, the scientific community has warned that biospheric processes are destabilizing. Humanity faces higher average temperatures, a rise in sea level, and more frequent extreme weather events [4–8]. These crises will have a dramatic impact on all facets of human society, spanning governance, food systems, transportation, security, economy, health, education, housing, immigration, and others [9,10]. The consensus from peer reviewed studies is that this planetary disruption and climate change is due to human activity [11,12]. For human society to thrive and be sustained for future generations, this destabilization of Earth's life systems must be addressed.

At its core, sustainability is a recognition that human survival and well-being depend on our natural environment [13,14]. Sustainability is both a learning process and system of ideas, values, skills, and practices that have contested meanings due to different cosmologies, philosophies [15], and other social and cultural norms that inform human communities and development [16]. Sustainability in HEIs is a diverse and transdisciplinary area of inquiry and practice that seeks to help to lead efforts in creating a "thriving, equitable and ecologically healthy world" [17], and also to cultivate ecologically-literate, place-engaged, planetary citizens who value and work together to nurture justice for both human and other-than-human inhabitants.

A focus on sustainability within HEIs is not new and can be traced, albeit indirectly, to the Stockholm Declaration in 1972. Later, it is more directly linked in the Tbilisi Declaration that was co-created at the world's first intergovernmental conference, which was hosted by the United Nations Educational, Scientific and Cultural Organization and the United Nations International Environmental Education Programme [18,19]. As the field of sustainability began to develop further during the 1980s, there were calls for sustainability policies and practices to be integrated into HEIs. The most notable was the call within the Brundtland Commission (formally the World Commission on Environment and Development) [20]. This document properly introduced the term "sustainable development" (SD) as both the process and end goal for human society, including HEIs [15]:

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

This Brundtland Report was followed by an international commitment to SD at the Earth Summit in 1992 (United Nations Framework Convention on Climate Change (UNFCCC), which was later extended under the Kyoto Protocol). The International Association of Universities (IAU), the global voice of higher education, adopted the extension of the UNFCCC in 1993 and made SD one of their four strategic priorities.

Since the Earth Charter (2000) and Ubuntu Declaration (2002), the role of educators and education systems in SD has garnered renewed attention and designated a special role as a stakeholder in facilitating, envisioning, and leading the change toward sustainability. Thus, by 2002 SD had become a widely-held social and political goal, the pillars of sustainable development were at the intersection of economic, ecological, and human/social well-being, and HEIs were looked to as key stakeholders in promoting SD [21,22]. This increased focus on the role of educators in achieving SDGs can be seen in the rise in the number of articles concerning sustainability and SD in post-secondary education. Vaughter et al.'s [23] research shows that from 2003–2012, the number of publications regarding SD in eight leading journals rose from 15 to 146.

The understanding that human well-being depends on planetary ecosystem health and the cultivation of planetary citizenship imposes frameworks or parameters for human development. Hence, SD involves "the expansion of the substantive freedoms of people today while making reasonable efforts to avoid seriously compromising those of future generations" [24]. SD embraces a holistic, "triple bottom line" [25] approach to human well-being, which is the aim for economic development, environmental sustainability, and social inclusion—both today and in the future. SD does not protect or promote integral ecology and ecosystem resilience to the detriment of human relationships, security, economic mobility, and injustices [26]. They work in tandem; SD meets fundamental human needs in ways that protect Earth's life systems and promote the resilience of planetary ecosystems.

At an international level, seventeen Sustainable Development Goals (SDGs) were adopted in 2015 as a plan of action for ensuring the well-being of all people and the planet, both now and in the future [27]. If this lofty goal is to be achieved by 2030, national, regional, and local institutions must be involved in this work. A commitment to the SDGs acknowledges the implicit universal ethical mandate to recognize and heed the interests of future generations [27]. The way in which SD is imagined and implemented in different climates, bioregions, and cultures is fluid. Wals [16] indicates that the diversity of approaches to sustainability is valuable because it ensures that sustainable development and SDGs are locally relevant and culturally appropriate. This necessitates that there be a consensus concerning the key principles and categories of SD work within HEIs, but how they manifest themselves within unique contexts will vary.

In HEIs, several areas (discussed below) contribute to SD and SDGs in response to the international declaration of HEIs as drivers for SD and inclusive societies [28]. Sustainability in higher education (SHE) is a distinct academic discipline that contributes to SD through the exploration of knowledge areas within the curriculum at the intersection of society, economy, and environment. HEIs are also contributing to the achievement of the SDGs by using their collective financial leverage, institutionalizing sustainability within university infrastructure, and implementing SD within policy and programming. It is important to note that, within HEIs, there are many researchers who offer critical analyses of the potentially exploitative and detrimental nature of the influence of HEIs in societal development (See [29–31]). This is crucial to explore but is beyond the scope of this paper. Thus, the general categories for SD work being carried out in HEIs will be outlined without engaging with the possible exploitative activities of HEIs in the area of SD. Tilbury [32] is a key source for understanding the eight categories of SD work within HEIs and how they are derived from the recommendations for SD that are codified in a number of international declarations and charters, including the SDGs. These can serve as a framework for how to redesign HEIs so as to potentially augment a university's ability to address the many demands placed on HEIs today [33,34]. This paper will assert that this is optimized when the conditions for fostering collaboration are also met [3]. The preliminary data from the CCG case study suggest that when HEIs couple a commitment to a participatory process (one that augments the skills, knowledge, confidence, and self-reliance of stakeholders in collaboration) with SD work, contributions to SDGs can be made in challenging contexts and universities can transform to meet the needs of today's students and communities.

While previous literature does an excellent job of summarizing the history of SD and SDGs and providing examples and case studies, often as separate entities, the goal of this paper is to intentionally integrate the historical frameworks presented by prior research on SD—particularly SHE—with sustainability practices in HEIs. Previous literature does an excellent job of providing examples (see, for example, [35]); however, the goal here is to serve as an origin for joining these ideas, i.e., how to both sustain *and* integrate theoretical ideals with practices in ways that foster pathways for institutional or systemic change. Indeed, to shift a culture toward the collaborative model that is demanded by a commitment to the SDGs and to foster the resiliency that is required to implement this shift requires ongoing sustainable support systems or institutional frameworks that are informed by international codifications, academic and historical analyses, and individual case studies. Our goal is to serve as that interstitial space or integrative connection between these three key aspects. Objections to this paper could include the lack of rigorous debate on the nature of sustainable development (SD), the influence of technology on SD, and the need for HEIs to answer international calls to contribute to SDGs. There are several excellent sources that do this and thus, these research questions are not undertaken here [35–39].

3. Materials and Methods

The Foundations of the CCG

Reflective inquiry and practice are considered by Schon and other philosophers to match the analytic rigor of other methods of research inquiry, but the actions and decisions that arise are usually made in a single organizational context following sense-making processes [40], the results of which are not necessarily generalizable but are highly practical in outlining the knowledge discovery and decision-making processes. This paper was designed to outline the conceptual framework that emerged from the sense-making process and how it directed the building of the CCG at Wingate University. Research and data collection led to the theoretical framework outlined in this paper and exposed the missing link that was inherent in the implementation of this framework: a collaborative and participatory process. This is exploratory research, as it illustrates an important theoretical framework and approach for creating an infrastructure within HEIs that both serves the 2030 Agenda for SDGs and fosters new paths for HEIs to be successful in society today.

A meta-analysis of systematic historical studies of SD in HEIs shows that a case study approach leaves two areas underexamined: (1) how the international call to contribute to the SDGs is understood and framed in both discourse and practice by HEIs, and; (2) how SD programs and the infrastructure that is implemented by HEIs can make these institutions more able to meet the demands being placed on them by society and today's students [41]. The case study of the CCG, which was created and informed by the evidence collected, provides a framework for implementation and a pathway to success for this promising thought experiment, demonstrating the imperative for fostering a collaborative climate within HEIs to reach the SDGs. Without creating a collaborative culture, the eight categories of SD work would not be institutionalized, which would effectively diminish contributions to the SDGs and institutional capacity to meet the demands of current and future students [3,42].

The knowledge discovery process began organically, as evidenced visually in Figure 1. In 2017, Dr. Rhett Brown, President of Wingate University, had a vision to build a hub on campus where students, faculty, and staff, as well as community members, could develop their ideas for innovation (e.g., products, services, systems, programs, events) and foster entrepreneurial attitudes and skills to meet the needs of those living and working in eastern Union County. Concurrently, there was a rising desire in our student body to pursue more sustainability practices on campus, an administrative desire to strengthen community stakeholder relations and cultivate high impact practices and pedagogies, and key stakeholder desire to support innovation and entrepreneurship.

Figure 1. The origins of the CCG.

In early 2018, a task force was created to investigate how to achieve these aspirations, and, with the aid of the Vice Director of Wingate's advancement team, a competitive Jessie Ball DuPont planning grant was secured to help to accomplish the research needed to create a new institute or center on campus that could achieve these lofty goals. This grant enabled

scholastic research and data collection to be carried out that enabled Wingate to construct the CCG in order to meet the local and regional needs of eastern Union County and to appreciate the specific socio-economic and political context of this HEI. Dr. Catherine Wright was the primary researcher tasked by the university to lead the creation of the CCG and was familiar with the sustainability work being conducted both within HEIs and ecological ethics, and she had just published her work exploring the alignment of outcomes within SHE with high impact service-learning and community engagement (SLCE) pedagogies [43].

During 2018, a thorough meta-analysis of international literature focused on SDG contributions ensued, alongside task force discussions (with membership from all sectors of campus) about the relevance, nature, and efficacy of using the principles of SD as guiding concepts for the CCG. This literature search was also augmented by several off-site excursions to perform field research with key stakeholders. The group travelled to the Shi Institute for Sustainable Communities at Furman University; the Doherty Center for Creativity, Innovation and Entrepreneurship and the Kernodle Center for Civic Life at Elon University; the Wond'ry Center for Innovation and Design at Vanderbilt University; and the Jessie Ball Dupont Center in Jacksonville. This off-site research was vital to appreciate how other institutions have designed innovative centers around key SD and community engagement principles and to gather input as to what they would do differently.

Research into Wingate's socio-economic and political culture was undertaken and community stakeholder input (community partners, Wingate staff and faculty, and students) was also vital to this process. Thus, pathways were created to facilitate this data collection, which included creating ROOTS Summit surveys and workshops, hosting focus groups, and running prototype projects and events. Useful data from these paths helped our task force to appreciate what Wingate's stakeholders thought about our local community, including assets, deficiencies, abilities to serve, and design ideas to maximize innovation, entrepreneurship, service-learning, community engagement, collaboration, and partnerships. The following is an outline of what was found in our research. This theoretical framework enabled Wingate University to open the CCG in 2019 and it continues to direct the vision, mission, and activities of the CCG.

4. Conceptual Framework: Sustainable Development in Higher Education

In 2010, the AASHE issued conference documents [44] that outlined the need for "the knowledge, skills, and abilities students will need to address sustainability as they graduate and enter the workforce." However, Wingate University is situated in rural southern North Carolina and within a socio-economic and political climate that makes sustainability work challenging. However, the AASHE [44] noted alternative pathways and leverage points to take up SD work that involved strategic curricular and program alignments, partnerships, and student interest:

> "Opportunities also exist through the alignment of what is needed for sustainability education and other educational commitments . . . . One of the most important leverage points is evidenced by students themselves and by their demonstrated interest in sustainability efforts on campuses nationwide. Perhaps most importantly, the greatest opportunity lies in establishing active partnerships among students, staff, faculty, administrators, employers, and others to call for and support the changes that are necessary. Additionally, there are partnerships that link research, teaching, residential life, high impact educational practices, and other campus activities that can foster, support, encourage, and help initiate curriculum development."

Since the CCG was conceived as a hub on campus for innovation, entrepreneurship, and sustainability, the foundational principles and decision-making processes needed to be outlined in order to appreciate the urgency of this task, connect this work to a larger, well-articulated national and global movement, help to form the mission and vision of the CCG, and direct its daily activities and goals. Thus, it was important to understand the

evolution of SD work within HEIs across the world, and not just simply in the United States. Indeed, research has shown that output in journals seems imbalanced toward publishing cases from the U.S., Europe, Asia, and portions of Oceania [45]. From our research, several categories were identified and overarching trends were visualized.

Figure 2 highlights the historical timeline of the emergence of the prevailing eight categories of SD work from the codifications made in international declarations and statements since the 1970s. This figure includes articles that were based on a variety of disciplines and consists of historical and cross-cultural comparisons, as well as focusing on SD work in the United States. Typically, these Sankey diagrams, named after the Irish engineer Captain Matthew H.R. Sankey (1853–1925), visualize complex dynamic processes and communicate sources and their uses. This type of visual representation lends itself to the study of trends or shifts over time, since these charts draw attention to the largest and most significant entries within a system [46]. Key to interpreting Sankey diagrams is the recognition that the width of the lines is proportional to the relative magnitude or quantity represented [47]. This Sankey diagram was created by the third author and correlates the eight categories of SD work within HEIs outlined by Tilbury [32] with their sources, and the international documentation is organized chronologically. This visualization illustrates the changes in significance by decade. The categories of commitments, attitudes, and practices affiliated with SD work include: moral obligation; sustainable physical operations; public outreach; ecological literacy and interpretation; encouraging sustainable research; partnerships (government, NGOs, industry, etc.); inter- and intra-university cooperation; and developing inter- or transdisciplinary curricula [2,19,23,32,48].

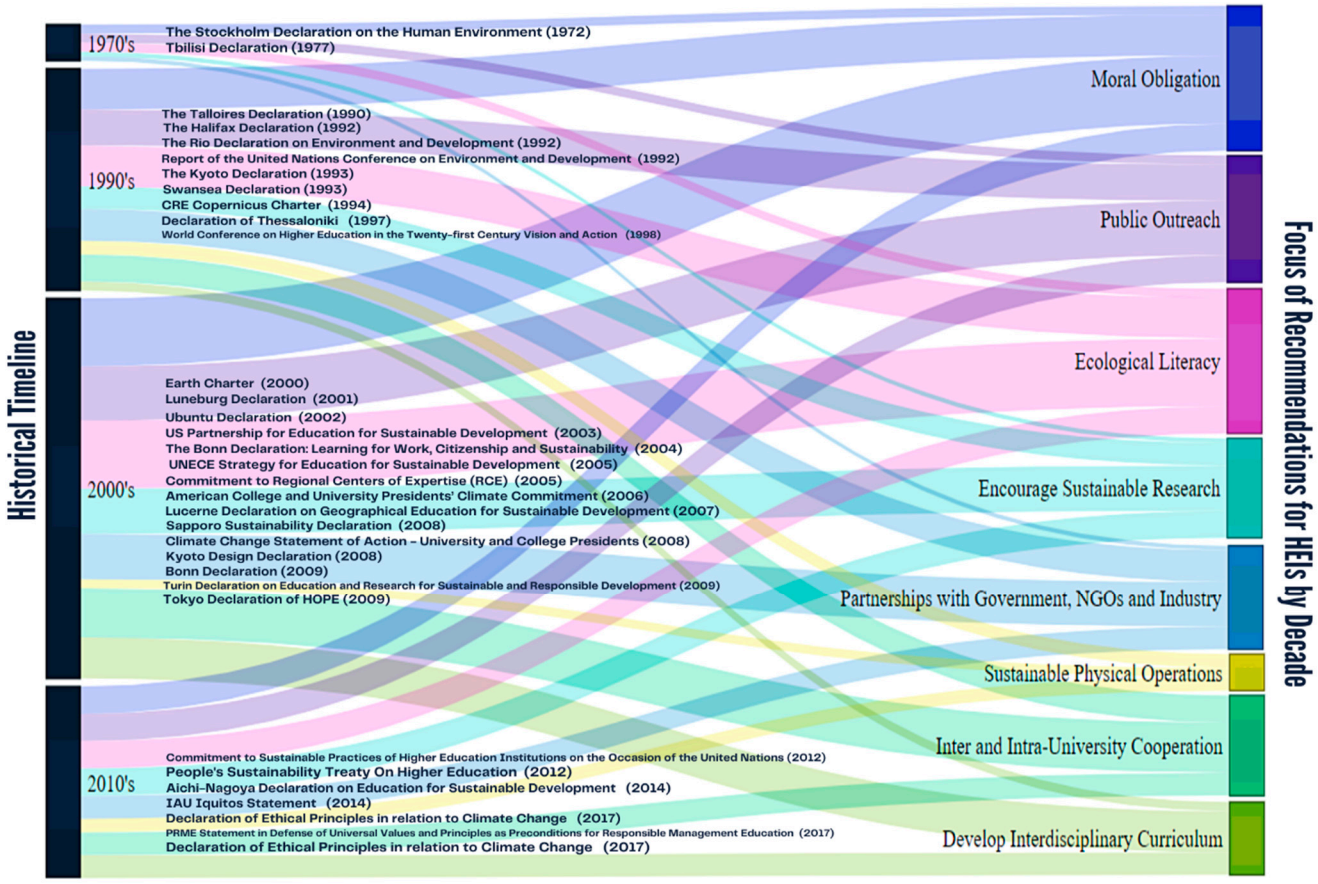

Figure 2. The evolution of sustainable development work within higher education.

Using a Sankey diagram was particularly pertinent for this meta-analysis study due to the nature of the research question: documenting the shifts in emphasis of the categories

within international documentation to understand the evolution of the demands being place on HEIs with respect to SD. In this case, the widths are illustrative of the significance or emphasis of each sustainability category within a historical time frame and can point to areas of opportunity for shifting campus culture toward achieving the SDGs. For example, in 1970s, much of the emphasis within international documents centered on moral obligation and public outreach (with a small focus on sustainable research and NGO partnerships) whereas at the turn of the century, there was still a strong emphasis on moral obligation and public outreach, but this was more balanced with an emphasis on other categories. Thus, readers can visualize the dynamic nature of prioritization by decade; earlier decades focused primarily on the first three categories whereas later decades diversified to focus more attention on categories involving more concrete and collaborative features. For example, a transdisciplinary curriculum requires a more collaborative infrastructure than a president signing a commitment to sustainability on behalf of a university (i.e., moral obligation). This trend highlights the need to build collaborative cultures to successfully contribute to the SDGs. The following offers an outline of each category and how it directs the vision, mission, and practices of the CCG.

4.1. Moral Obligation

This category can be understood as the recognition of the ethical responsibility of universities to be leaders in contributing to local, regional, and global sustainability. Deeply entrenched patterns of thinking within higher education knowledge ecosystems and relationships are contributing to unsustainable development, but it is recognized that the formidable generative and scholastic power of HEIs could be (re)directed toward the pursuit of finding solutions to society's urgent problems [49]. The UN's Decade in Education for Sustainable Development (2005–2015) called for a reorientation of education toward more sustainable forms of living rather than merely tacking on sustainability content or siloing sustainability into its narrow field of specialization [50]. The consequence of taking on this moral obligation is the call to embed sustainability into the core business of universities and colleges.

HEIs can "undertake action-oriented research" that stresses research, pedagogy, and learning as a means of generating value and modifying action rather than as solely a way of generating data. However, "in addition to providing and enhancing outreach service to communities, [HEIs] can employ a scholarly approach to teaching and learning for SD" [49]. This can contribute to existing SD knowledge streams while also developing the HEIs' own capacity to engage in transformative SD education and become models of sustainability in their own communities. This aligns operational practices, research, teaching, and networking capabilities for SD with community outreach and civic engagement [51]. Sharp [52] makes clear the urgency of taking up this obligation; universities will only survive the next century if this holistic and innovative approach is taken. However, in tackling this imperative, HEIs can become leaders of a deep transformation within broader society. The CCG has taken up this moral obligation and it is embedded within the vision of the CCG: to co-create a thriving community in eastern Union County. It is also enmeshed in the three cornerstones of the mission of the CCG: the triple bottom line; intergenerational focus; and participatory process.

4.2. Sustainable Physical Operations

This category (sustainable physical operations) encourages practical actions within the operation of universities to lower the unique carbon and resource impacts that universities have within their local, regional, and global ecosystems. It also invites HEIs to become models of sustainability in their own communities. This category is a popular choice for adoption by HEIs, especially in the North American and European context [32]. Reasons for this include the ability to precisely measure and report tasks (e.g., STARS), the technological nature of these practices (rather than value realignment and human behavioral change), and the direct financial benefits of adopting SPO (a rationale that all political groups affirm).

An analysis of the International Journal of Sustainability in Higher Education (IJSHE) reveals that during the first nine years of its existence (2001 to 2010), the majority of articles and research focused on this category and included the following: protecting biodiversity and natural space; greening university campuses; minimizing waste and energy consumption; developing low carbon buildings; sourcing sustainable goods and services; and reducing overall campus ecological footprints [53]. As other categories rose in significance, especially those focused on public outreach and partnerships, sustainable operations were reimagined to include more partnerships and public scholarships in order to augment the learning of how this could be carried out in the broader society.

In line with our three tenants, the CCG is currently working on a strategic plan to make our campus more energy efficient and to lower our carbon footprint in partnership with Schneider Electric and a third-party lender. A CCG service-learning and community engagement course (SLCE) that is sponsored by the CCG was also developed in partnership with Wingate's operations team, in which freshmen and sophomore math classes measure and track energy usage on campus in order to achieve the learning outcomes that are associated with statistics and hypothesis testing (to learn more, visit the CCG website [54]).

4.3. Public Outreach

The authors of international declarations saw public outreach by HEIs as key to SD because HEIs "situate themselves within the larger community in which they reside" [18] and are called to be "a contribution to society" [49,55,56]. Increasingly, there is a greater demand placed on HEIs to be accountable to the communities that they inhabit. As economic crises deepen due to market downturns and pandemics, governments and shareholders are rethinking the value and impact of university activity on economic and social development. There is an emphasis on the farther-reaching benefits of university activities beyond those experienced by those who go to university, as noted in the abovementioned Moral Obligation section.

Since 2000, universities have realized that to achieve SD goals, they must reach beyond university walls to address SD within their communities [49,57]. HEIs are seeking to become "engines that contribute to the social, economic and cultural development of the regions in which they operate, by transferring knowledge and technologies to industry and to society at large" [58]. Since SD requires the leveraging of all assets of society and an integration of this knowledge, HEIs hold a privileged position in SD work due to their unique potential in both areas to foster a collaborative knowledge democracy.

From the first iteration offered by the President to its unveiling, the desire to serve Wingate University's greater community has been inherent to the CCG and its mission statement: "The CCG uses a project-based approach to address economic, social and ecological issues in eastern Union County. Our goal is to transform our local region by focusing on creating neighborhoods where people, places, and economies can thrive and prosper. We work with partners on and off campus, aligning resources, talents and expertise with community needs, while providing opportunities to advance various academic pursuits" [54].

In addition, the third core tenet of the CCG is a participatory process that involves faculty, staff, students, and community stakeholders in reporting the impact of the projects and initiatives that are undertaken. A commitment to surveying all stakeholders, tracking the collected data, and using diverse methods of communicating ideas, contributors, methods, and impact (e.g., social media, open-sourced public scholarship (CCG white papers), traditional scholastic presentations, journal articles) allows the CCG to create a knowledge democracy and live the motto of a participatory process: "We do not do for or to; We work with others to co-create change" [54]. The CCG is also aptly placed to contribute to Wingate's newest strategic plan for our university to be a "regional solution engine." Due to our commitment to meaningful public outreach, the CCG stands as the infrastructure best aligned to co-create, direct, and track the experiential learning on campus that is in service to the region.

4.4. Ecological Literacy

Education that leads to ecological literacy, or the knowledge of and caring for human–ecosystem interactions [59], is multidisciplinary and holistic, and it views humans as part of nature, not separate from nor superior to nature [60]. This category is frequently called for by international declarations and at institutional levels, as seen in Figure 2. Since the developments in sustainable programming in the 1990s (see the Talloires Declaration, 1990 or the Halifax Declaration, 1991, for example), this area has become more nuanced to include the idea of "interpretation" [48]. This vision of literacy includes the learner and the landscape as educators and interpreters, and it involves the maximization of the learner's ability to better understand, observe, and make sense of the natural world. This is a constant process of meaning making for the landscapes around the learner and demands that educators offer opportunities to "evoke an ecological narrative" in the mindscape of the learner [48]. Thus, a modern understanding of this category extends beyond the enhancement of the teaching of environmental science to become an overarching perspective for education.

Cultivating ecological literacy in this holistic way is how the CCG approaches its first tenet: the triple bottom line. Every project, initiative, and event must appreciate the intersectional nature of economic, social, and ecological well-being. This does not demand a rigid equality of approach; rather, each aspect is appreciated in its own way. For example, a service-learning class that is dedicated to calculating the economic impact of our university on our local community is also encouraged to spend time looking at landscapes and how they impact the social and economic aspects of life. The CCG projects, contracts, and podcasts communicating different projects and initiatives also include questions that focus on articulating how ecology, economics, and social dimensions intersect. This intentionality allows for innovation and new perspectives and helps to dismantle the silos of learning while fostering a holistic vision of education for SD.

4.5. Sustainable Research

Research into sustainability is an asset that HEIs have to offer to SD and can take many forms. This category emerged more recently in international declarations, as is demonstrated in Figure 2, and has been underappreciated, along with public outreach. Nevertheless, these new criteria for HEI research offer alternative academic frameworks for public scholarship and outreach and are slowly making their way into more high-profile assessment systems, influencing the type of sustainability research being carried out and the funding available [2]. Vaughter et al. [23] indicate that there are three predominant areas of research occurring beyond the knowledge acquisition in natural sciences, social sciences, and humanities concerning SD: (1) research comparing curricula across institutions (within disciplines and across disciplines); (2) research comparing campus operational policies and practices across multiple institutions; and (3) research on how to best measure or audit the approaches to and outputs of sustainability in programming for sustainable education.

Since 2000, there has been a movement toward more complex forms of research due to the nature of HEIs themselves. The institutions of higher learning are able to transect geographic boundaries as not only knowledge generators, but also employers and consumers [49] that transform and impact their larger social surroundings [2]. Research is also transitioning to be understood as an interpersonal process, not something only carried out by scholars but is carried out in ways that recognize the role of research in propagating the exploitation of people and ecologies and expose the power, politics, and participatory relations that can ground SD research in HEIs. Thus, the emergent sustainability and SD research landscape today is asking new questions about research itself while placing more emphasis on practical, evidence-based, concrete projects that create systemic change in larger communities. Thus, the contributions to the SDGs that emerge from inter-, multi-, and transdisciplinary research that has a social impact and is transformative demand the cultivation of an ethos of collaboration within all levels of HEIs.

The CCG at Wingate was intentionally designed to facilitate this type of research, and this is highlighted in our third tenet: the participatory process. Research and public scholarship that is being carried out to support SD encourage a participatory process within inquiry techniques so that research is undertaken "with" HEI stakeholders rather than "on", "for" or "to" others [2]. This approach resonates at all levels: collaborative research; SLCE fellowship program; the design and implementation of ROOTS Summits with community stakeholders; the pitching of CCG proposals; cultural leadership interns co-selecting their mentors; weekly CCG coordinator update meetings with co-created agendas and cross-pollination of projects/events; and project contracts that allow faculty, staff, and students to negotiate timelines, incentives, and return on investments together. Finally, intensive research is being conducted throughout the year to monitor and track all work that carried out by the CCG, including: tracking hours; membership and attendance at any and all events; focus groups; research and scholarly development; public and scholarly presentations; and survey data. The data are then used by the CCG to track both our impact to ensure that we are achieving our goals and missions and, of course, that students are fulfilling their contracted requirements and developing skills, such as those specifically outlined through their contracts, course learning objectives, and student learning outcomes in their academic courses. All research is administered by the CCG while simultaneously being overseen by the CCG Advisory Board and is available to the public as a tool to help to understand the further impact of our participatory process. Community members have disclosed that these data have helped their progress and capacity building and have contributed to their grant applications

4.6. Partnerships

Most declarations and international commitments speak of the need for partnerships and connections with several other categories (e.g., public outreach, research, etc.). These partnerships are often with organizations that are outside of the formal sphere of education and are not visible or prevalent at the institutional level [61]. Historically, HEIs have seen themselves as self-contained educational ecosystems; however, a reciprocal process of knowledge co-creation or a knowledge democracy is now being called for. Breaking down the walls between campus (formal research centers) and community (non-formal knowledge related institutions) is vital to achieve the SDGs [49]. HEIs can play a vital role in overcoming the compartmentalization of knowledge and promoting knowledge democracy via a "local/regional knowledge base" that is connected to the sound scientific evidence being offered in normal HEIs. Thus, global and local intersect, and theory and practice/action intersect within local contexts to drive solutions to real world problems. These types of partnerships are locally driven, culturally relevant, diverse, and co-constructed to meet the real needs of the community while still embracing the overarching strategy to promote global well-being and the SDGs [49].

The CCG at Wingate University was designed to be a hub on campus for innovative ideas to grow and create the vertical, lateral, and horizontal linkages that would allow them to succeed. The goal of the CCG is to harness the synergies of campus knowledge generation pathways, intra-university/college cooperation, and local community partnerships that are vital for successful SD work. It is impossible to achieve these alliances without intentionally working to cultivate an ethos of collaboration both on and off campus. The evidence of this success is in the over 110 partners and stakeholders with whom we collaborate in our courses, projects, and initiatives. Our commitment to partnerships translated into the CCG's first concrete initiative: a shared workspace that was designed based on the evidence collected from all stakeholders at our first ROOTS Summit (2019) [54]. A "neutral" shared workspace that was inviting for all participants was designed and implemented in January 2020. The result of this first initiative was impressive: collaboration within our university (several campuses) and within our community buy-in alongside new purchasing partnerships allowed 77% of the funding for the space to be used to obtain repurposed, reused, and sustainably sourced materials. Our commitment also reaped financial benefits;

we saved tens of thousands in equipment and furniture costs, and this promoted the vision and mission of the CCG in a unique and concrete way.

4.7. Inter- and Intra-University Cooperation

This category connects to the previous and emerged in the 1990s, yet became more prevalent in declarations in the 2000s (for examples, please see Tilbury [32]). It is a specific form of partnership or cooperation within and between formal education centers and requires the earlier categories to be more fully developed prior to its manifestation. Again, as with partnerships, this is called for in national and international declarations and at policy levels, but it is hard to create at individual HE institutional levels [61]. However, in the early part of the 21st century, more partnership platforms emerged that brought universities together to share resources and build alliances (see, for example: Copernicus Alliance; Pacific Network of Island Universities; Association for the Advancement of Sustainability in Higher Education in the US; or the Mexican Consortium University for Sustainable Development). There is a recognition of the need for these cooperative partnerships because formal educational institutions share common issues, desire to learn best practices, and need to combine scarce resources.

The CCG recognized this need for cooperative intra-university infrastructure and during its development phase, researchers became members of two main cooperative organizations and associations: COPIL (a group of service-learning scholar-practitioners in North Carolina called Community of Practice, Inquiry and Learning) and AASHE (the Association of the Advancement of Sustainability in Higher Education). This allowed the CCG designers access to top scholars, ideas, language, and research to build the mission, vision, and participatory process that grounds the CCG. Concurrently, there was a focus on building internal capacity for inter-university cooperation; faculty, staff, and student focus groups were held to judge capacity for interdisciplinary buy-in; ROOTS Summits were hosted to provide opportunities for diverse disciplines to engage with one another and community stakeholders; and a service-learning and community engagement fellowship program was designed to encourage faculty and staff from all disciplines, programs, and departments to apply.

4.8. Inter- or Transdisciplinary Curriculum

Developing inter- and transdisciplinary curricula is necessary to promote an environmentally sustainable future [35]. Literature reviews point to: shifts in curriculum development for SD toward innovation for sustainability within existing curricula, rather than just adding new courses and separate modules about sustainability [53,62]; reframing curricula to be asset-based and their people to be change agents [63–65]; and adding in opportunities for reflection, negotiation, and participation in the SD learning process [62,66].

To develop curricula for SD learning, outcomes must align with eight key competencies: (1) competency in foresighted thinking; (2) competency in interdisciplinary work; (3) competency in cosmopolitan perception, transcultural understanding, and cooperation; (4) participatory skills; (5) competency in planning and implementation; (6) capacity for empathy, compassion, and solidarity; (7) competency in self-motivation and in motivating others; and (8) competency in distanced reflection on individual and cultural models [67]. These competencies enable active and reflective cooperation, which enables students to cultivate a forward-looking ability to "assess and apply the findings of future research in the drafting of sustainable development processes with regard to ecological systems, social justice, economic developments and political action" [68]. The CCG was designed to address all of these key competencies in a myriad of ways. Our three tenets capture several of these competencies (2, 3, 4, 6) while our Cultural Leadership Intern program, DEI Gateway module development, budgeting practices, SLCE course development and support, our project management toolkit, recruitment practices, podcast series, research, and ROOTS Summit work address many others (1, 2, 4, 5, 6, 7, 8). These key competencies help to direct the many activities and commitments of the CCG.

5. Results

5.1. Wingate University: A Case Study

The CCG was designed to foster the well-being of eastern Union County via a commitment to the categories offered in international declarations and the cultivation of an intentionally collaborative ethos both on and off campus. Our evidence-based approach envisions community partners as stakeholders and contributors to HE and HEIs as contributors to civic and community well-being. To achieve this, three CCG coordinators were onboarded in the summer of 2019 from various departments across campus, each to oversee one of the main foci of our mission: ecologically focused initiatives; service-learning and research; and campus–community communication. Along with these leaders, an administrative assistant was added to the team in October 2020 to help to oversee the budgets, student interactions in the space, and other vital clerical duties. Each coordinator, student intern, and fellow co-created their semester's work contract with the executive director in order to direct the scope of work to be undertaken, performance measures, and the reward or incentives that were necessary to reflect the worth of the work and to enable success.

5.2. Impact and Outcomes

Since the 2019–20 academic year, the impact of the programming, training, and events was tracked and reported publicly via the CCG website [54]. Figure 3 offers some of the key impacts that were connected to involvement and engagement within the CCG and provides the evidence of our attentiveness to the triple bottom line, budget commitments to collaboration, and campus connections.

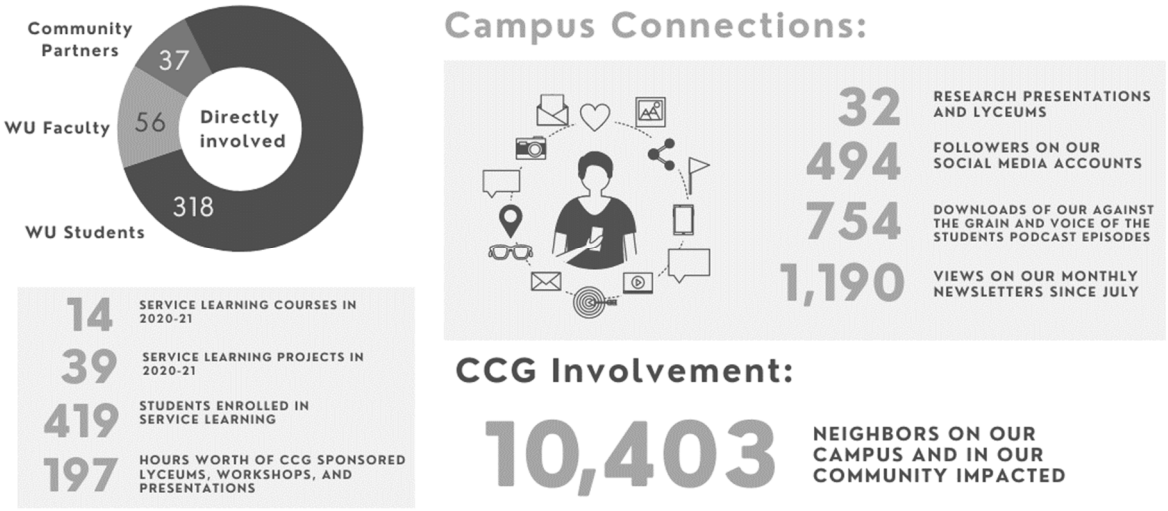

Figure 3. The CCG's key impacts.

In addition, the CCG white papers being published on the collaborative website was conceived as a core practice of the CCG because it was a form of public scholarship and knowledge democracy; this made the data and project impact accessible to campus and community stakeholders in order to help to direct their strategic planning, the scope of work, networking capabilities, and grant writing. These papers, while simultaneously counting toward faculty's public scholarship requirements for the university, are also intergenerational artifacts that are affiliated with all projects, courses, and initiates supported by the CCG, and they allow the passage of the knowledge and continue the efforts of past students, faculty, and staff despite the transient nature of HE.

The collaborative also promoted the work of faculty and staff, allowing them to produce professional presentations and develop academic papers for journals. Showcasing the work as public scholarship helped to facilitate various strategies offered by Kezar [3], since the visibility of the collaborative work and its impact drew the attention of senior adminis-

tration and community stakeholders. This helped to divert the limited internal funding toward CCG initiatives and opened new grant funding opportunities. It is also a recruiting tool with several new faculty members commenting on the positive impact of our work on their desire to work at Wingate University. Faculty are also appreciating the benefits of engaging in collaborative work; since 2020, 100% of the academic presentations that were submitted to regional, national, and international conferences (across disciplines) were accepted. Faculty and staff also included their CCG work in faculty evaluations, thereby benefitting their merit ratings. Currently, we have several academic papers submitted to journals and others being supported by the CCG. Thus, faculty and staff have taken notice and have sought to become involved.

As Wingate University continues its strategic planning pathway that was started in 2020, the CCG's evidence-based participatory process has offered direction and data to guide the second strategic pillar: the regional solutions engine [3]. The initiative "Experiential Learning in Service to the Region" required goals and metrics to measure impact and due to the work, recruitment efforts, and approach of the CCG, essential needs were outlined, partners were identified, and metrics assembled.

Finally, a key CCG program that was created to facilitate several aspects of Kezar's [3] model and engage several of the SD categories is our Service-Learning and Community Engagement (SLCE) Fellowship Program. Established in 2019 by Dr. Lapan, the CCG SLCE coordinator, this program is a series of workshops that mentor faculty in high-quality SLCE practices and course design followed by implementation within courses in all subsequent semesters. For specific details, please refer either to Figure 3 or the CCG website [54] or for more information, please contact the authors for the specific data on these courses.

6. Discussion and Conclusions

The findings of this study point to two major conclusions. First, a commitment to SD and SDGs can help HEIs to be more resilient and successful in their desire to become "changemaker" universities, create a collaborative knowledge economy, be student centered, and fulfil their "third mission" to partner with the greater society and external stakeholders [3,15,20,23,25,27].

Second, a collaborative culture is not innate to HEIs, thus an intentional ethos or culture of collaboration can be built and cultivated on campuses to enable the successful implementation of SD categories and be more adaptable to future challenges and societal demands [2,19,23,32,48]. The CCG at Wingate University is offered as a model for how one HEI committed to implementing the eight categories of SD work and started the process of co-creating a collaborative culture both on and off campus.

The preliminary data also illustrate many benefits of creating a center or hub in the manner of the CCG. First, the CCG projects and partnerships offer the current data for campus-wide strategic planning that involves regional solutions, partnerships, and high impact practices. Projects, coursework, and white papers also increase the presence of Wingate University in the greater community and aids recruitment and retention efforts while allowing the CCG to track membership progress and successes as defined by their obligations and participant proposals for membership. The CCG as a "hub" offers greater adaptability and flexibility (e.g., COVID food programs and the removal and repurposing of materials from residence areas after the mandated COVID evacuation) when facing challenges due to pre-existing communication channels, partnerships, and working relationships and unforeseen challenges such as COVID-19 [28].

Second, the CCG offers professional development avenues outside of the limited number of traditional research releases that are only offered to faculty (one pre-tenure release Spivey and one post-tenure release Sabbatical). In the CCG, the co-creation of contracts and incentives for ensuring work completion (e.g., course releases, stipends, etc.) are the norm. These allow for greater innovation and satisfaction—again referencing a key aspect of Kezar's [3] collaborative model. The CCG SLCE coordinator and recruitment coordinator supported faculty and staff in data collection (e.g., Qualtrics survey design

and implementation), interdisciplinary research pathways (e.g., presentations at interdisciplinary research conferences), public scholarship (e.g., white papers, impact reports), and article construction (e.g., editing, journal identification, data analysis). All of these make many of the categories of SD work possible at a small private institution. Faculty also have opportunities to learn how to design and implement high impact courses, as well as track the impact of their innovation. Faculty and staff also have opportunities to mentor students who are project leaders or Cultural Leadership Interns through mentorship opportunities. They are also relieved of the challenge of maintaining relationships with community partners beyond the semester of their SLCE course, and those who are unfamiliar with the community gain access to meaningful community stakeholders with whom to partner [49,54,61].

Third, both students and faculty/staff gain a physical, shared workspace on campus for collaboration, meetings, and project management. Students also gain structured opportunities for mentorship and leadership development training. The CCG is a place for students (or faculty/staff/administrators/community) to bring their ideas to build a more resilient community and develop them in a climate that will enable their success. The shared workspace allows opportunities for students to encounter different perspectives and approaches to well-being, which breeds empathy, understanding, and compassion. The CCG also offers direct service opportunities and meaningful connections to community partners and peers, which increases employment opportunities and future pathways.

Fourth, through projects, budgetary commitments, and personnel, the CCG helps to build new collaborative networks, councils, and task forces in eastern Union County (e.g., Food Council, Healthy Union), emphasizing the importance of moral obligation in sustainable development [49–52,55,56]. The CCG is also a landing pad for inquiries and offers community partners easier access to campus, faculty, staff, and students. The CCG facilitates research support for community stakeholders and offers data collection that will augment the success of grant writing. The CCG also helps with fundraising, education, marketing, and raising awareness of opportunities. This is not philanthropy; a core CCG belief is that the fate of our surrounding communities is intertwined with the fate of Wingate University—there is no thriving university without a vibrant and prosperous surrounding community [18,54,59].

By contrast, the major limitations of the CCG include trying to cultivate both the infrastructure to be successful in our vision and mission and a culture of collaboration within a HEI that was built hierarchically. This is a major barrier for the CCG that manifests as a lack of access to key decision-making sessions, territorialism, opportunities perceived as competition rather than a chance to partner, jealousy at innovative choices for incentives to work with the CCG, and a lack of communication channels (similar to concerns raised in previous literature [29–31]). Many faculty members voiced their displeasure at the collaborative process for determining incentives and the breadth of their scope (e.g., including staff members, offering student workers course release or stipends), since this pathway to rewards was outside of traditional channels and perceived norms. However, as budget realities sink in, partnerships and collaboration are being demanded and as the profile of the CCG gains traction in the faculty and community stakeholders, these barriers may change.

To address these limitations, the CCG continues to be an open and welcoming organization while heavily monitoring all work, memberships, and goals. By maintaining full transparency and incorporating outside perspectives into the organization, we aim to divert some of these difficulties as much as possible. Future studies and organizations such as this may find similar difficulties; a goal of the CCG is to continue pushing toward this cultural shift, monitoring what works—and what does not—and using this information to promote positive growth for other such studies.

For any HEI looking to contribute to the SDGs, two goals should be at the forefront: the removal of barriers that hinder collaboration at all levels, disciplines, and departments within HE [69] and the re-design of HE to cultivate a collaborative ethos and participatory

process that recognizes the value of intra-university and community cooperation [49,55–58]. These two steps are key to achieving the SDGs by 2030. It is suggested that Kezar's [3] seven organizational features are vital for recognizing which structures and supports are needed to carry out SD work and be better prepared to meet the demands being placed on HEIs today. These structural components are augmented by other studies that outline best practice approaches, which can be implemented within a HEI to increase interdisciplinary collaboration [70]. Future research should include understanding the relationship between ecological legacy and collaborative cultures, and the correlation of the eight categories of SD within HEIs with the infrastructure offered by Kezar [3] and Roper [70] in order to offer more concrete ways of creating collaborative cultures in highly fragmented HEIs.

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