Systematic Review

The Role of the Civic University in Facilitating Inclusive and Transformative Pedagogical Approaches to the Sustainable Development Goals: A Systematic Literature Review

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Abstract: Facing rising financial pressure due to economic stagnation and lacklustre engagement from policy-makers, higher education institutions (HEIs) and local communities are placing increasing emphasis on cooperative efforts between universities and communities to co-create positive societal change in the face of the triple planetary crisis. Based on the PRISMA method, this systematic literature review seeks to contribute to the academic knowledge on Sustainable Development Goals (SDG) governance at the local level by unpacking the contribution of HEI-community cooperative approaches to transformative learning and action for sustainability. In order to successfully incorporate communities' priorities in the local-level integration of the SDGs, it is crucial that these new collaborative initiatives foster transformative learning approaches to Education for Sustainable Development (ESD) in an equitable, intersubjective, and inductive manner. The findings present the various strategies used to build long-term, impactful, and resilient learning skills for sustainable development for all ESD stakeholders at the local level, including communities, HEIs, and city authorities. This review proposes these interventions as tools for better local governance towards the integration of the SDGs into HEIs and communities, specifically through SDG4 Quality Education.

Keywords: community engagement (CE); education for sustainable development (ESD); sustainability in higher education; sustainability education

1. Introduction

Facing a rising financial burden worldwide due to economic downturn and austerity policies [1], HEIs and communities seek to remain steadfast in their increasing collaborative efforts to co-create positive change in the face of the triple planetary crisis [2], i.e., the three intersecting environmental crises of climate change, pollution, and biodiversity loss. New collaborative initiatives between stakeholders foster transformative learning approaches to Education for Sustainable Development (ESD) in an equitable, intersubjective, and inductive manner [3]. In this context, the term intersubjective pertains to the generation of 'shared understandings of meaning through authentic dialogue', ideally within the framework of a shared endeavour or practical undertaking [3]. Furthermore, these processes of knowledge creation should be inductive, whereby they draw out 'potential indicators from stakeholders' statements' as opposed to 'deriving them from theoretical frameworks' [3]. For this process to be effective, there must be considerations of equity in place between stakeholders. Equity here refers to the egalitarian cognitive (and material) relationship that enables community–HEI relationships to foster the co-creation of sustainable knowledge [1]. These criteria combined ensure that the learning process and SDG indicators generated as a result are most pertinent to the locality and not externally imposed.

This systematic literature review (SLR) links the existing literature and local initiatives on community engagement to the framework of transformative learning, which can assist

universities and communities to focus on transformative pedagogical approaches to advance sustainable development. As such, this SLR aims at providing ESD stakeholders, i.e., local communities, HEIs, and city councils, with the latest governance tools to build long-term, impactful, and resilient learning skills for the advancement of equitable and intersubjective sustainable development, which starts at the local level. This SLR builds on recent literature discussing HEIs' role in global sustainability governance, such as Cuesta Claros et al. [4] and others, which is initiating more discussion on this topic in many academic circles, including the Earth System Governance (ESG). Our findings indicate that the "Civic University", a proactive and collaborative actor, plays a central role in the success of these equitable and sustainable initiatives by engaging with the community for the mutual benefit of all stakeholders [5]. This creates a relationship of mutual aid between stakeholders on different governance levels, from the community to the university, city councils, and finally the regional and national authorities. In community-based endeavours, the civic university can help co-create knowledge on areas relating to local needs by fostering the generation of indigenous indicators and subsequently measuring and translating the progress in the locality at the policy-making level through, for instance, Voluntary Local Reviews (VLRs) [5].

Hence, the main objectives of this paper are to address the following questions, aligned with the interactions displayed in Figure 1. First, in what ways can the civic university contribute to fostering bottom-up transformative, intersubjective, and inductive learning methods captured in the concept of Education for Sustainable Development (ESD)? Second, how can the civic university translate this learning framework into tools that, through the promotion of SDG4, incentivise SDG integration into communities and universities?

Figure 1. Interactions between actors at different governance levels (authors' elaboration).

The paper begins by looking at the current frameworks, practices, and actors in ESD before describing the methodology adopted for this SLR. The findings will then be described in the discussion, focusing on the local stakeholders of ESD, the pedagogical changes required to align with ESD, and the role of the SDGs in that process. We conclude by looking at the current bottlenecks in ESD and the potential ways forward, notably in terms of expanding city–university partnerships.

2. Current Frameworks, Practices, and Actors in ESD

The importance of the global effort for egalitarian transformative learning becomes clear when considering the restrictions that societal paradigms of economic "green growth", which have permeated the initiatives for sustainable development in HEIs, have placed on ESD progress through HEIs and other mediums [6]. In that respect, transformative, intersubjective, and communitarian learning and development initiatives have contributed to rebalancing HEI efforts on the three pillars of sustainability—environmental, economic, and social—shown in Figure 2. By placing a greater emphasis on the social pillar, transformative community learning approaches can help transform the "green growth" paradigm, mainly focused on economic growth and environmental protection, into meaningful progress in all three pillars [6,7]. In collaboration with the community, HEIs have pioneered this transformative approach as a legitimate and efficient method to progress SDG implementation while simultaneously propagating ESD skills and values among the participants.

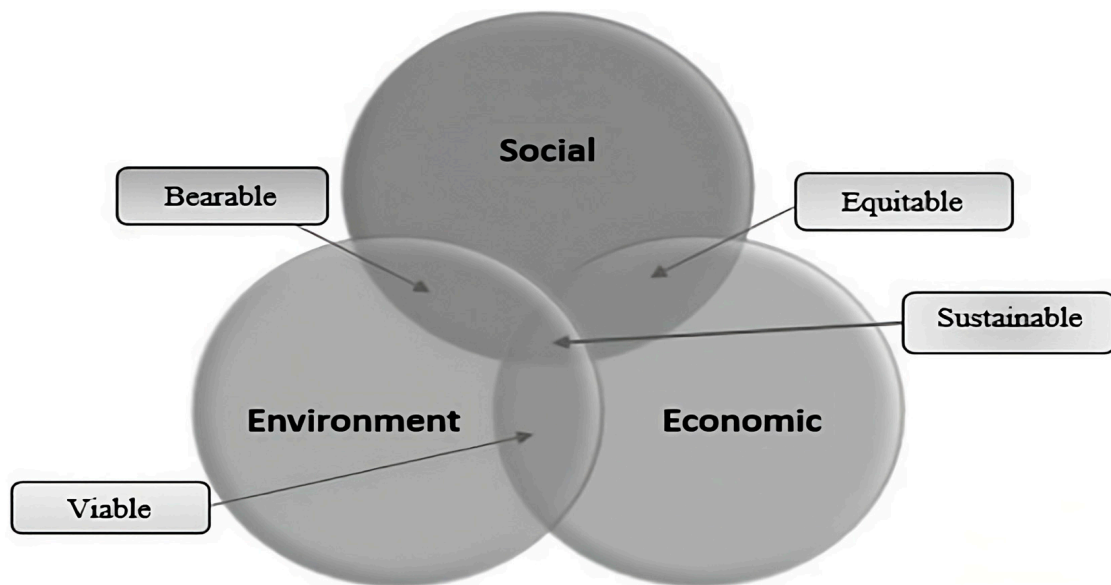These agents of change can then spread meaningful sustainability practices beyond the community and academia.

Figure 2. Simple Venn diagram for sustainability. Source: [7].

The success of such an endeavour requires a level of compatibility, or at least openness to compatibility, by both actors in their learning initiatives. To gain an initial understanding of the themes explored in the systematic search, the following section will briefly outline some key areas of knowledge linked to our research questions.

2.1. Pedagogy and Bottom-Up/Transformative Learning

Pedagogy is a useful tool in ESD because of its nature as an analytical tool to understand teaching practices, objectives, and paradigms. Transformative pedagogies seek to co-create knowledge between agents in order to maximise learning and promote impactful action from the lessons learned. Brockwell et al.'s [3] (hereinafter referred to as Brockwell) paper on "Inside-Out" learning is an example of transformative pedagogy, a study of the methods through which we teach and generate knowledge in others. Brockwell [3] calls their communitarian, bottom-up framework for teaching ESD the "Inside-Out" design because it fosters indigenous knowledge and channels it towards developing localised SDG implementation and measurement. By valuing the opinions of the localities' inhabitants, the framework challenges the imposition of externally created knowledge, such as external indicators, on sustainable development initiatives in favour of locally pertinent goals. The term indigenous here serves both as (a) an identifier of a person and their knowledge belonging to a locality (read *indigenous*, lowercase 'i'), but also as (b) the label given to a non-dominant group who has continuously inhabited a territory since pre-colonial times and still lives under the dominion of its colonial settler (read Indigenous, capital 'I') [8]. Approaches like Brockwell's then work to incorporate the voices of the local people who know their locality best into sustainable education and initiatives. Deconstructing colonial (and more recently neo-liberal) ideals of individualist progress towards sustainability and replacing them with communitarian and regenerative growth paradigms, more common among Indigenous communities globally, is critical to this process [3,9].

Brockwell [3] explains that 'values-based indicators' can serve to elicit community project teams to reflect on and frame their needs in an SDG context. This enables the formation of intersubjectively and inductively 'co-created' indicators, which prioritise the values and initiatives that the population affected by policy change would like promoted and measured over the priorities of funders [3]. Given their emergence from the community, the selected missions and their indicators typically reflect a communitarian spirit, which

means that the issues are no longer interpreted as being a burden on each individual in a group but instead that the problems are faced and must be solved by the community as a whole. This approach is what the literature describes as "transformative", in that it involves a normative and behavioural shift on behalf of the actors from an individualist, consumerist lifestyle to a communitarian, altruistic praxis [10]. These innovative community-learning frameworks are 'compatible with transformative learning initiatives', meaning there is a space for progress in integrating them into HEIs [3].

Translating this approach to the academic sphere, universities are mapping these approaches onto curriculum development and during in-class interactions. This is carried out via the involvement of university actors—management, teachers, and students alike—in initiatives developing egalitarian, co-creative, and sustainable teaching and learning skills within the university and involving partners from the local community in their activities. Diverse community initiatives, like those organised by the Doughnut Economics Action Lab (DEAL) in Middlesborough, also contribute to university-community education. These co-operative initiatives (a) help to critically determine the strategies most suited to integrating ESD in HEI pedagogy; (b) inform approaches to measuring ESD integration into curricula (e.g., through indicator generation); and (c) are beneficial to determine which initiatives to tackle in the local area and how to measure them in the way that is most fitting to the local context. The groundwork for SDG integration into courses is already present, given their compatibility with most courses across universities in the UK [11].

In the university, the objective of these transformative initiatives is to achieve a 'depth of change' in four distinct 'steering effects' for the university, which are 'discursive', 'institutional', 'relational', and '[4] resource'. For the 'discursive' area, a transformative approach would ensure that SDGs became part of the university's identity, leading it to use the SDGs to frame most of its activities [4]. In the 'institutional' sense, a transformative approach would change how the 'whole institution organises and governs itself because of the SDGs' [4]. In the 'relational' sphere, a transformative approach would lead to cooperation 'based on the SDGs and their interrelationships', within and outside the university [4]. Finally, in terms of 'resource', the transformative approach would lead to 'long-term and diversified resource allocation [which] supports SDG-based changes across the university' [4]. To highlight the importance of transformative approaches—encompassed in ESD—to the promotion of the SDGs, we now look at the interdependence of SDG4 with higher education (HE) and the positive impact that a thorough integration of the SDG Agenda in HEIs may have at the local and global levels in promoting the SDGs.

2.2. SDG4 and Target 4.7 in HEIs

First, according to the Sustainable Development Solutions Network (SDSN), this interdependence exists because of HEIs' ability to foment pedagogical elements that are crucial to understanding the SDGs and how to implement them best. The SDSN claims that implementing SDG4 in HEIs helps to develop diverse and young perspectives with critical thinking abilities, which then influence decision-making processes at the classroom, university, and community levels. Target 4.7, Education for Sustainable Development, is largely responsible for fostering these skills. These academic skills enable them to 'think through complexity', 'learn through dialogue and communication', and 'assess when activities support or detract from achieving the SDGs' [12]. This in turn encourages the development of all SDGs, leading the SDSN to conclude that there is a notably strong connection between SDG4, specifically Target 4.7, and the other 16 SDGs [12]. To understand the purpose of sustainability in development and carry it out in every-day action, students must develop the tools necessary for thinking at a systemic level, acknowledging the social, environmental, and economic intersections of development in order to choose the most beneficial course of action [13].

The SDGs' tactful and adaptable approach is reflected in SDG4's Education for Sustainable Development, an initiative that, according to Arjen Wals, is most efficient when it is free to exist in various iterations, which are more easily translatable to 'particular applications

responsive to local needs' [14]. This is where the importance of HEIs becomes clearer. By researching, interacting with, and translating SDGs, universities have the unique potential to help shape the framework with which policy-makers will implement SDGs in their countries, starting from the very localities surrounding the university. HEIs have the tools necessary to unpack and critically interpret the SDG targets their locality/region/country is striving to achieve by interacting with and serving as a *civic university* to its community. John Goddard conceptualises this term succinctly, stating that the *civic university* 'integrates teaching, research, and engagement with the outside world such that each enhances the other' [5]. Therefore, the community's assets must enrich the HEIs as much as the HEIs enrich the community.

2.3. Civic and Community ESD

ESD is one such compatible approach, arising in HEIs and community-based initiatives alike. Community involvement in ESD is critical to embed sustainable development in its geographical context, which is important to elicit local priorities and values that can be infused into sustainable initiatives involving stakeholders from HEIs, city councils, and the community. As UNESCO outlines in its 'International Implementation Scheme' for the Decade for ESD (DESD), ESD must 'engage formal, non-formal, and informal education' in '[building] civil capacity for community-based decision-making', to address 'local needs, perceptions, and conditions' [15]. At the same time, ESD also has to acknowledge that 'fulfilling local needs often has international effects and consequences' [15]. Still today, scholars emphasise the crucial role civil society can play in advancing the SDG agenda at the local level through reporting and reviewing SDG progress and initiatives and generating indicators, for example [16] An initiative using this approach to ESD is the Doughnut Economics Action Lab (DEAL), which fosters ESD through various local initiatives that involve stakeholders from civil society groups and small businesses, and often participation from local universities.

For example, in Middlesbrough, DEAL organised an event to 'raise public awareness of Doughnut Economics through the arts and call for community action' [17]. By using a range of verbal and interactive pedagogical approaches, the workshops fostered kinaesthetic and visual learning on Doughnut Economics [18], a concept that shares the values of the SDGs. The project served to frame the local needs of the stakeholders through the lens of sustainable futures for locals and globally. From this workshop emerged distinct missions that could tackle local problems such as waste management, maintaining biodiversity, food security, and health [17]. These problems are to be tackled with further community engagement and school engagement as well, where ESD can help bring people together under a positive mindset for the future. Indeed, DEAL's approach adhered to two of UNESCO's demands. First, they meet UNESCO's demand for participatory pedagogical approaches to ESD, and secondly, they manage to ensure an interactive atmosphere by involving multiple stakeholders in the community [15].

These examples can prove extremely useful in mapping learning exercises into HEI pedagogy to foster ESD. Some solutions could include activities within seminars or lectures but also increased engagement with the community, for example by participating in local events organised by groups like DEAL. By learning with the community, it is also possible to translate the local missions into university missions, an approach that is clearer and more focused than embracing the SDGs broadly and therefore more attractive to investors as well [19]. Furthermore, this approach would foster a sense of civic university among the community, promoting positive impressions of universities as caretakers of the community. By taking on these roles, universities will increasingly be trusted by the community by helping to translate local needs into action at a policy-making level (as delegators) [20]. HEIs can do this by mapping the local SDG-linked needs to policy-level, national/global pledges and developing indicators that bring the local status quo to the attention of [3] policy-makers. The University of Bristol Cabot Institute for the Environment, for example,

carried out Voluntary Local Reviews alongside the city council and community (under the Bristol One City Plan) for this very purpose.

Once such local mapping exercises arise, they can enable the unlocking of funding from regional, national, and international institutions or rationalise existing local policies to enhance social reform. We can thus classify local engagement as a positive feedback investment, where HEI engagement with the community fosters trust between community actors and the HEI as a delegator while contributing to the university's ESD strategies and solving the community's problems at the same time [21]. For example, in the case of Middlesbrough University, teachers who had participated in DEAL workshops encouraged DEAL to engage with students about their obstacles to community engagement. The students then took initiative in tackling these problems through their module projects. Altogether, the students managed to 'create fantastic websites, social media content, and policies and went into engaging the community' [17]. Going back to our initial claim about the impact of SDG4 (Target 4.7) on the other SDGs, we can see here a clear implementation of ESD from local-level problems into academic projects and a process of deliberation, categorisation, and mission generation to tackle the problems through the transformative learning approach provided by the framing of the Doughnut.

3. Methodology and Results

3.1. Search Strategy

First, in what ways can the civic university contribute to fostering bottom-up transformative, intersubjective, and inductive learning methods captured in the concept of Education for Sustainable Development? Second, how can the civic university translate this learning framework into tools that, through the promotion of SDG4, incentivise SDG integration into communities and universities? To answer these research questions, we have conducted a systematic literature review following the PRISMA methodology [22] as shown in Figure 3. We therefore affirm that our research process rigorously adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. These guidelines provided a comprehensive framework for the identification, screening, eligibility, and inclusion of studies, ensuring a transparent and replicable methodology for our review. We utilised the PRISMA checklist to guide our data collection and analysis, which aided in maintaining a systematic approach to synthesising the existing literature pertinent to our research objectives; see Supplementary Materials.

We identified the relevant academic literature around the terms "Community Engagement", "Education for Sustainable Development", "Sustainability in Higher Education", and "Sustainability Education". The search strategy was tailored to two database providers: Scopus and EBSCO, and one large publisher database, i.e., Taylor and Francis. During the initial research phase and background reading, the key words above were identified by filtering through academic papers' keywords, abstracts, and a distillation of general themes relevant to the research questions above.

Preliminary systematic research was conducted with other search terms, but ultimately the chosen search terms above were the best fit for the research questions. Furthermore, the use of quotation marks and Boolean search commands was used to narrow down the search from thousands of results to under 100–150 articles in each database (provider). Although this method can exclude useful sources, the chosen format allowed us to narrow the results from broader subject areas to exclusively focus on what is most relevant to our research area. It is, however, possible that we have missed some articles due to this method. The results included journal articles, review papers, and research reports, all published in English only.
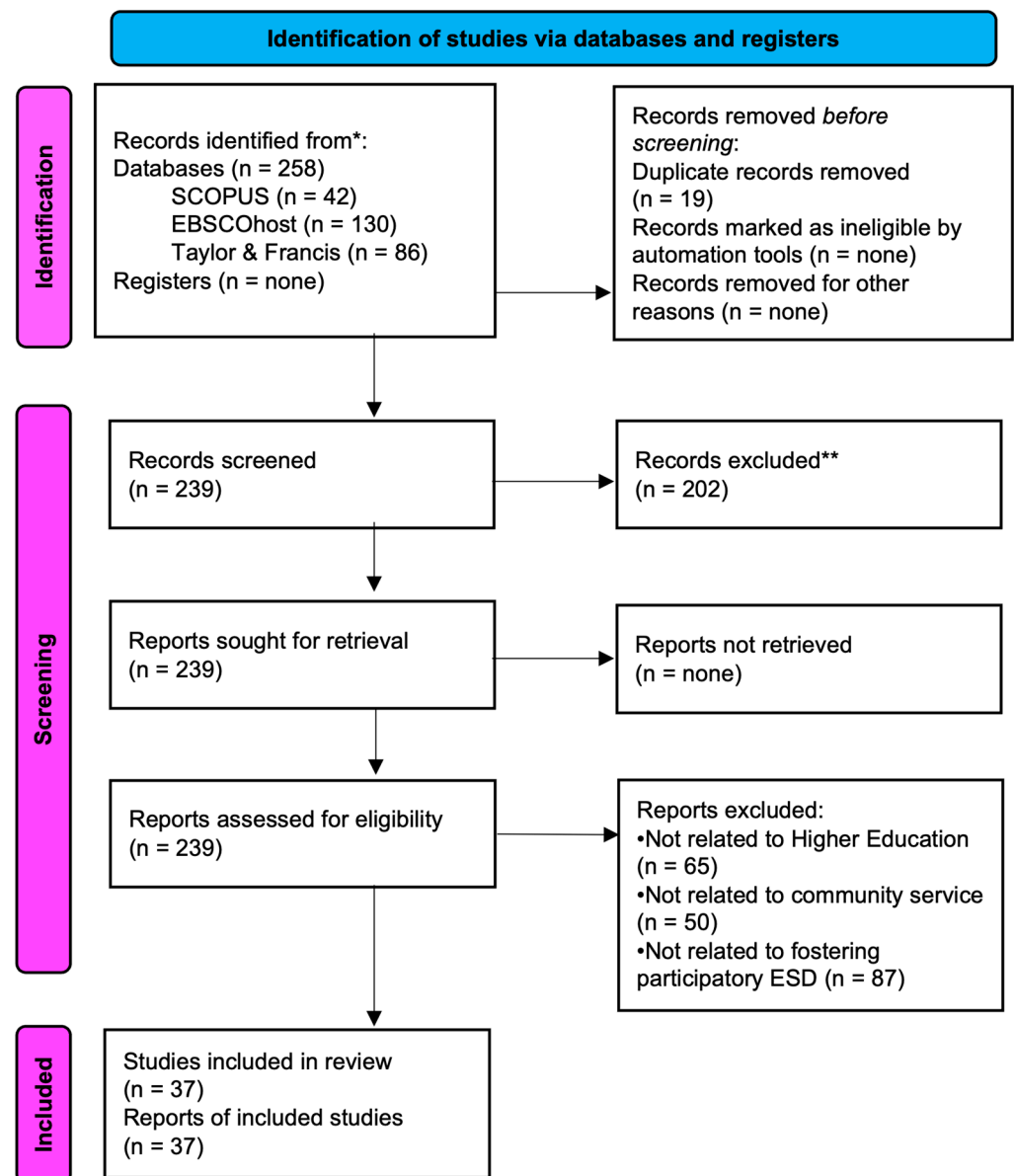
Figure 3. PRISMA flowchart for the systematic literature review (based on [22]). * Consider, if feasible, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). ** If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

3.2. Selection Criteria

In this search, the requirements for inclusion are first and foremost focused on higher education. Because our focus is on '*civic universities*', papers that focus on other levels of education must be excluded. Second, the papers must mention the terms 'local', 'locality/ies', 'community/ies', 'civic/civil' or 'participation/participatory', 'transformative' in the abstract. This is because without sufficient mention of key words associated with HEI participation in local/community efforts, the papers are highly unlikely to engage with the topic of HEI civic engagement thoroughly throughout the paper. Third, the papers included in the final sample must also explicitly mention and explore the fostering of ESD through transformative learning, rather than being descriptive studies of HEI engagement in local communities.

3.3. Quality Assessment

The study is based only on original search articles, book chapters, and blogs or reports. All instances of duplication were thoroughly examined, and 19 duplicates were removed before any filtering began. Figures 4 and 5 show the frequency of articles and publication titles for the period 2008–2013. Subsequently, the abstracts of these articles underwent rigorous scrutiny to analyse and filter the academic literature relevant to the review. Finally, each research paper was carefully evaluated. After this process, the list was narrowed down from 239 papers to 37.

- On EBSCOhost, 130 papers were selected, which were narrowed down to 15 after screening. The greatest number of papers excluded came from these subject areas: corporate social responsibility, psychology, youth, and primary/secondary education.
- On SCOPUS, 42 papers were selected, which narrowed down to 17 after screening. Most papers excluded were concerned with these subject areas: primary/secondary education, development architecture, online learning, and finance.
- On Taylor and Francis, 86 papers were screened down to 5. The most common fields from which the excluded texts came were geography, finance, pre-primary and secondary education, student lifestyle surveys, and corporate social responsibility.
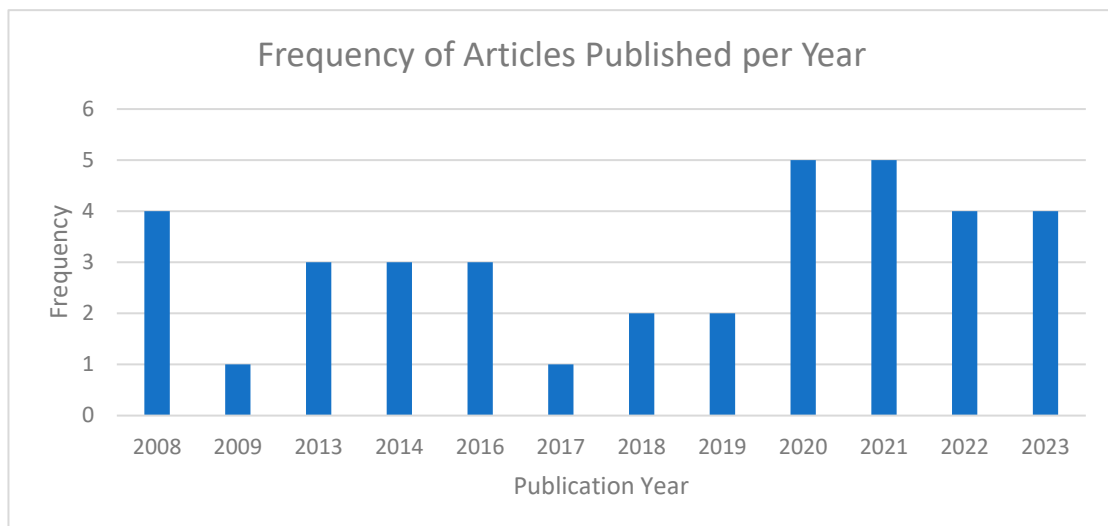

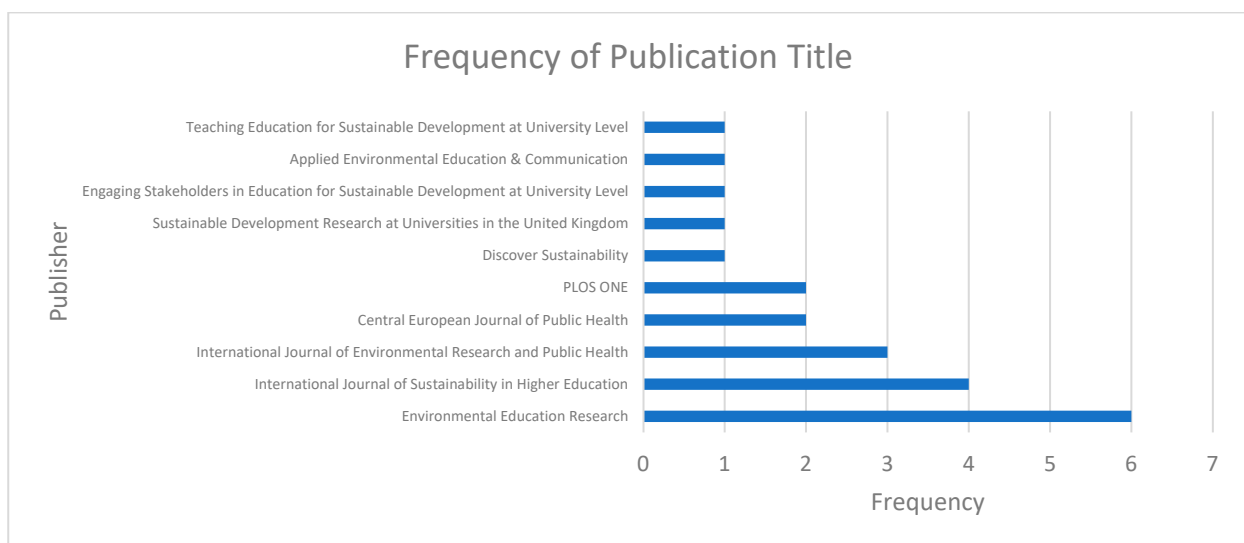**Figure 4.** Frequency of articles published per year (2018–2023).

Figure 5. Frequency of publication titles (only top 10 results).

3.4. Grey Literature

Beyond the systematic search, this study also includes academic papers researched on Google Scholar. These were subject to the same inclusion criteria as the papers in the systematic search. Furthermore, the paper also analyses non-academic literature such as blogs and reports concerning community-based initiatives. This allows us to extract the latest qualitative and quantitative information, which will then inform, as case studies, the implementation strategies of ESD in HEIs. To achieve this, the data will be mapped onto the ESD theoretical frameworks of Brockwell's [3] "Inside-Out" strategy and Sharma's value-creation mechanisms [23]. The selection criteria of these case studies depend on the content reflecting the bottom-up, intersubjective, and transformative learning methods that Brockwell and Sharma put forward.

3.5. Limitations

In their study, Lozano et al. [24] identify seven dimensions of HESD (Higher Education for Sustainable Development). These are '(1) institutional framework; (2) campus operations; (3) education; (4) research; (5) outreach and collaboration; (6) on-campus experiences; (7) assessment and reporting' (cited in [25]). However, Lambrechts et al. indicate that much of the literature only discusses two of these dimensions, i.e., campus operations and educational initiatives [25]. For this purpose, our review attempts to include new and old research that discusses and analyses multiple of these areas, including research, on-campus experiences, institutional framework, and especially assessment and reporting, as well as outreach and collaboration. However, our review is limited by the topics that reputable literature covers; therefore, it may perpetuate the problem of focusing too narrowly on certain issues with regards to HESD. Nonetheless, our paper seeks to illustrate the notable increase in literature concerning diversified strategies beyond the two dimensions identified by authors like Lambrechts et al. [25], likely in response to such relevant critiques as theirs.

3.6. Use of Generative AI

In order to enhance the clarity and linguistic clarity of specific paragraphs, the authors made use of GPT-3.5 in the preparation of this study. After using this tool, the authors reviewed and edited the content as needed, and take full responsibility for the content of the publication.

4. Discussion

This section explores the literature selected during the systematic search in the following order: The first two sub-sections outline the literature's criteria for the civic university and its duty to uphold the values of engaged ESD. Then, the third sub-section delves into the literature's framing of pedagogy, principally transformative pedagogical approaches such as service-learning, problem-posing education, value-centric learning, systems-thinking competence, and I/indigenous forms of knowledge. The fourth sub-section explores various ESD initiatives that have already taken form in community and HEI settings and maps these initiatives onto transformative pedagogies, drawing out the common (pedagogical) driving forces for success in ESD initiatives. The final sub-section explores attempts at integrating ESD and the SDGs into HEIs through policy shifts, curriculum reform, and increasing collaboration between transdisciplinary academia and the community.

4.1. The Civic University

'In the civic university, research has socioeconomic impact designed in from the start and teaching has a strong community involvement with the long-term objective of widening participation in higher education.' [5]

The concept of a civic university has much in common with ESD. One could argue that a civic university is the manifestation of HEIs embracing ESD. As Oe et al. point out, ESD aims 'not only to provide knowledge', but in addition, it must 'help learners reflect

on their own values and develop their capacity to participate in the creation of a better society' [26]. HEIs may promote ESD through 'problem-solving education and community activities that confront the various challenges to achieving a sustainable society' [26]. In sum, when an HEI contributes and interacts with its community and engenders civic duty, it is successfully fostering ESD.

Oe et al.'s study [26] on community learning initiatives for the environment is useful to this review for two reasons. Firstly, it confirms the positive impact of community learning on fostering ESD among students and civilians alike. However, its key insight, which the previous case studies did not feature, is the theoretical depth of analysis of the interaction between students and the community, and in particular the cognitive steps in that process. Oe et al.'s [26] findings on the steps of ESD learning had much in common with the "inside-out" approach of Brockwell [3], as the students engaged in reflections and discussions of experiences, welcoming outside perspectives to contrast their views with, and '[wove] solutions' to the issues raised together with the community [26].

As Lin [27] outlines, following service-learning (SL) initiatives like this, students should be encouraged to reflect on and share their experiences among themselves. This helps students turn 'tacit knowledge' into 'explicit [knowledge]', consolidating their experiences and allowing them to contrast with the experiences of others, within and outside the discussion group [27]. Consequently, students form 'reciprocal ties' to seek advice and opinions from each other, which has been found to be more beneficial to the diffusion of knowledge than non-reciprocal ties, like traditional teacher-student dynamics [28]. It also feeds into the integration of intersubjectivity that transformative learning brings. Lastly, students can use this 'new cognition' in future endeavours for sustainability [27], affirming these frameworks as truly transformative. The objective, at an individual level, is to foster agents who are constantly open to and seeking reflection and reinvention. Going forward, the question is how the civic university can expand its sustainability scope from on-campus initiatives to embedding ESD on and off-campus and engaging with the community successfully.

4.2. Education for Sustainable Development

Scholarship on ESD is distinct from other approaches to sustainable education, such as Environmental Education (EE), due to its dependence on active citizenry and reliance on 'local knowledge, identities, and discourses' [29]. As such, ESD embeds the values of sustainability 'into locally and culturally appropriate contexts', thereby 'emphasising quality of life and capacity building for communities' [29], as shown in Figure 2. Conceptually, this expands our understanding of sustainable education from an individual to a collective perspective, i.e., from individual empowerment to '[initiating] learning that fosters collaborative and collective efforts to combat local-global issues' [23]. In line with UNESCO [15], the scholarship strongly supports the view that efforts to foster ESD must be carried out in conjunction with the community.

Transformative learning frameworks are promising in this respect. The literature describes transformative learning as a pedagogy that co-generates various practical and normative shifts for those involved. For example, scholars like Tarc, Boetto, and Sharma all emphasise that transformative learning must aid a paradigm shift from the promotion of "'a highly individuated' citizen to the growth of an ethical human being who can live contributively" (Tarc cited in [23]). In other words, transformative learning's goal is a paradigm shift away from individualism, which Boetto identifies with the neo-liberal tradition, and towards a view that reflects communitarian and interdependent understandings of the natural world [10]. By challenging individualist norms, Boetto claims that transformative learning can create a shift away from practices necessary to neo-liberal individualism, such as consumerism [10].

By co-creating an ethos of sustainability, earth community, and harmony with nature, Boetto believes that transformative learning can distance actors from *extractive thinking* and towards regenerative practices [10]. Triggering a paradigm shift like this in HEI governance

systems, which tend to be perpetuators of anthropocentric paradigms, will be a crucial undertaking in the move towards ESD and SDG progress [30]. By defining the boundaries of what should be known and what knowledge is important, university curricula play a central role in shaping human actions. Hence, ensuring that the curriculum embodies ESD values is crucial for educating generations who must acknowledge the centrality of learning, understanding, and acting on sustainability in everyday life [30].

Similarly to Sharma and Tarc, Boetto also recognises that participative social work should be part of the agenda for transformative learning [10], demonstrating how the different aspects of ESD, transformative learning, action-oriented pedagogy, and sustainable thinking are all interdependent and mutually beneficial. For example, in their study about the civic engagement of African alumni, Jamison and Madden find that HEI engagement with communities through courses, engaged research, and civic networks fosters ESD with students and researchers alike, sustaining their public engagement endeavours long after their graduation [31]. This exemplifies the far-reaching impact that ESD-centred governance decisions in HEIs, at the local level, can have on educating sustainable mindsets within and beyond the university.

4.3. Reframing Pedagogy

The UN DESD has fomented a strong wave of pedagogical studies on ESD, many of which have emphasised the need for reframing pedagogical practice from a form of knowledge transfer from teacher to student to a form of knowledge co-creation and co-generation through inclusive action; in other words, transformative education. Through such reframing efforts, authors have sought to overcome criticisms of existing ESD practices as follows:

4.3.1. The Deweyian Education Philosophy

In their paper, Lambrechts et al. utilise the philosophical basis for ESD to address the knowledge gap in framing Environmental and Sustainability Education (ESE) and ESD from within the educational philosophy framework [25]. Their approach to reframing ESD pedagogy is embedded in a philosophical and normative theory dating back to John Dewey's 'Democracy and Education', which emphasises Aristotelian values of virtue, responsibility, and participative democracy [25]. Dewey translated these virtues into pedagogical approaches that centred around 'pre-service preparation, reciprocal partnerships, intentional learning goals, and meaningful reflection', encapsulated in the term 'service learning' (SL) [32]. This approach provides a 'theoretical framework on the role of education in democracy' that focuses on 'initiative and adaptability on the one hand and values and virtues on the other' [25]. Lambrechts et al.'s [25] paper, similarly to Tarrant and Thiele's [33], emphasises the fostering of value-creating ESD based on Deweyian principles of community-inclusive and participatory-democratic learning approaches. Tarrant and Thiele name it the "adaptive co-management' of ecological systems" (2016; cited in [25]). Hence, theoretical frameworks that embrace Dewey's principles are useful to the creation of new ESD pedagogy because they provide 'specific guidelines to enhance the philosophical and theoretical grounding' of ESD pedagogy [25].

By attempting to ground ESD pedagogy in educational philosophies like Dewey's, Lambrechts et al.'s framework [25] seeks to address some major criticisms of traditional ESD practices. The most valuable of these criticisms is based around the status of academia in terms of its acceptance of certain principles and values in sustainable development without engaging with those being taught—what Sterling calls "'education about sustainability'" (2001; cited in [3]). Tillbury and Wortman believe that this 'dominant thinking' leads participants to the understanding that sustainability is an outcome of education and not the process itself [34]. This pedagogy reflects what Paulo Freire calls the 'banking concept of education', where information is deposed by the teacher into the minds of students, effectively inhibiting the development of critical thinking in both teacher and student and encouraging teachers to embrace the curriculum uncritically [35]. Freire declares

this pedagogical approach ineffective, denouncing it as a form of oppression from those who control the flow of knowledge to those being educated [35]. Instead, Freire calls for a 'problem-posing education [that] involves a constant unveiling of reality', causing participants to 'feel increasingly challenged and obliged to respond' to the problems and challenges they discover [35]. This pedagogy, aligning with the systemic critical thinking needed to unpack and implement SDGs, enables participants to 'apprehend problems as interrelated to other problems within a total context' [35].

4.3.2. Value-Centric Learning

Building on the emphasis that Lambrechts et al. [25] place on Deweyian pedagogy, scholars are increasingly stressing the importance of teaching and learning approaches that result in transformative and transferrable critical knowledge in both community and higher education settings [36]. For example, Brockwell offers a learning framework where values are formulated through a process of (a) value elicitation and internalisation, (b) challenging of ideas, and (c) consolidation of values [3]. The first step requires that individuals share their own perspectives and priorities regarding the target and desired indicators, an important step that stimulates critical thinking and self-reflection in later steps [34]. Subsequently, participants are encouraged to contrast self-identified values with various stimulus materials, such as discussion prompts or external indicators. This phase attempts to 'introduce the viewpoints of people who are not in the room' [3], with the aim of giving a voice to the opinions of communities that are 'culturally and linguistically' different from Western-centric standards [23,34]. Lastly, the group should create an 'indicator framework' by selecting, organising, rephrasing, and prioritising statements from previous steps, simultaneously reframing the mindset of participants towards sustainable decision-making and action [3].

Namrata Sharma's [23] own value-creation approach shares similar steps and goals to Brockwell's [3]. Sharma argues that transformative and value-creating pedagogies, by allowing 'cohorts [to] interact with the learning materials while bringing their own experiences, values, and aspirations into the classroom', hold the most promise for the development of ESD [23]. Similarly to Brockwell [3], Sharma's approach also centres on fostering reflexive and critical skills central to ESD for learners. Such skills include an inherent questioning of information at face value, knowledge of academic investigative approaches, and advanced abilities in a broad range of transferable skills [23]. Indeed, in disciplines such as accounting, scholars have found that students with sustainable accounting knowledge 'were able to critically scrutinise given information', whereas their peers who lacked this knowledge [37] could not. These skills, Sharma argues, are useful in the development of indigenous indicators to measure SDG integration, another objective this approach shares with Brockwell's [3].

Value-centric learning, under the definitions provided by both Brockwell [3] and Sharma [23], starts from the value elicitation phase in the learning process. In 2022, for example, civil society groups in Bristol led an 'in-depth community engagement process—working with artists, hosting community meals, and presenting radio shows to start accessible climate conversations with their communities' [38]. Covering a broad range of local needs and climate-related grievances, these conversations 'enabled each community to create a unique set of climate priorities as part of a comprehensive community plan' [38]. Such a process of deliberation is enabled by the intersubjective element of ESD, which creates a sense of community ownership of the indicators. In turn, this allows the anchoring of the value-based missions, identified collectively, at the local level. This phase reflects both the intersubjective challenging/debating of ideas and the consolidation of missions [3]. The priorities identified by the communities varied widely, encompassing initiatives such as the creation of new green-job opportunities for refugees and the youth, the establishment of closed-loop food systems to address issues of waste and food insecurity, the generation of community-owned renewable energy on local structures, and the development of a specialised "Repair Hub" to empower the disabled community in saving

money and minimising waste [38]. The University of Bristol, alongside the city council, also played central roles in transmitting the data and indicators from these initiatives into the VLR released in 2022, demonstrating the importance of a cooperative and proactive relationship between community, university, and city council [39].

4.3.3. Systems-Thinking Competence

Another crucial element of these approaches, Demssie et al. argue, is systems-thinking competence (STC), a knowledge framework that 'helps sustainability change agents to realise the complexity of social, environmental, and economic environments' [13]. STC is a form of critical thinking that is 'not intuitive or innate' and works to counteract the individual's tendency to assess problems independently from their context (Remington-Doucette et al., 2013:410 [40], cited in [13]). STC adopts an inquisitive approach that acknowledges a wider, interconnected web of issues having local, national, and global impact [13]. This framework is important to ESD because it brings context to the way human activities affect various aspects of sustainable development [13], enabling systemic understandings of complex concepts such as the SDGs.

Crucially, STC is facilitated by transformative and innovative learning frameworks such as Brockwell's [3] and Sharma's [23]. By eliciting the opinions of students and contrasting them with others, their frameworks ensure that sustainability problems are framed in a wider web of knowledge at regional, national, and global levels [13]. Furthermore, like other sustainability competencies, STC benefits from transformative learning approaches that interact with real-world settings [13], as context brings value-based learning. Given the systemic nature of sustainability challenges in the real world [37], setting these learning initiatives in collaborative, action-oriented environments—such as community projects—enhances the chances of students recognising, sharing, and appreciating the 'interconnections among different elements or systems' relating to sustainability [13]. Therefore, STC enables individuals to recognise and tackle sustainability problems in a holistic manner, incorporating the potential multi-dimensional impacts of an action.

4.3.4. Indigenous Forms of Knowledge

Also linking democratic learning, STC, and value-centric participatory education frameworks is the concept of indigenous knowledge. The term 'Indigenous' is most often attributed to non-dominant groups in today's societies who inhabited a territory before colonial settlement and maintained strong cultural (and sometimes spiritual) links to the territory in which they were oppressed [8]. Indigenous knowledge, as described by participants in Mbah et al.'s study of Zambian ESD, is a form of contextualised knowledge 'unbound by disciplinarity', which belongs to a locality and contributes to its growth, inherently regenerating itself infinitely in a sustainable manner [9]. Therefore, indigenous knowledge can also be understood as knowledge emerging from the inhabitants of a locality, relating to their identity as its inhabitants and their customs and priorities for the locality. Indigenous knowledge's inherent ability to contribute 'context-specific knowledge... [in] situated challenges to development' makes its integration into ESD and SD initiatives undoubtedly beneficial to the advancement of the SDG Agenda [9]. This is because, by valuing the knowledge of the people who tie their identity to a locality, governance initiatives for SDG advancement can reinforce the social element in the "economic-social-environmental" sustainability equation (see Figure 2). In turn, this impedes the appropriation of sustainable governance initiatives for profit, such as greenwashing initiatives.

Mbah et al. believe that this approach can 'problematise expert-lay relationships', giving way to a re-arrangement from knowledge transfer into knowledge co-creation while also emboldening the formation of community–university partnerships [9]. This means that incorporating indigenous knowledge promotes transformative pedagogical approaches by (a) democratising education and (b) fostering participation-oriented learning, broadening the influence of ESD beyond HEIs. In addition, the incorporation of indigenous knowledge into ESD contributes to a normative alignment of ESD with systems-thinking competence

(STC), since it galvanises actors to recognise links between local initiatives and bring out context-specific values and issues in order to derive multi-purpose solutions in a given constituency [9]. Therefore, continuous engagement with the indigenous knowledge of the community is central to the successful implementation of both ESD and the SDGs at the local level.

4.4. Community Initiatives as Learning Opportunities

Since the SDG agenda was announced in 2015, cities across the globe have fostered an increasing number of community-led initiatives for sustainable futures. Many of the issues tackled at the city level intersect with the SDGs, and the process of deliberation and mission-making of these initiatives often aligns with the criteria that scholars like Brockwell [3] and Sharma [23] find essential to ESD. These initiatives help cities and localities take ownership of the SDGs by transforming them into local missions, thereby tackling the problem of 'leaving no one behind' [41]. Furthermore, these educational efforts can promote further collaboration between the local community, university, and council to transform chosen missions into indicators that measure and monitor the SDGs locally. A recent example in Zimbabwe showed how HEIs' efforts in local project development using indigenous indicators enabled them to evaluate the implementation and impact of the SDGs more accurately [42]. Community-generated indicators like these are useful for counteracting the low data availability in this field that scholars currently point out [43], with the worst affected areas being the poorest countries [43], and more broadly, the environmental SDG indicators [43].

4.4.1. Art and Context-Based Values

Community-based artistic initiatives for education are growing in popularity because of their ability to relate to local needs, elicit lasting reflection from their constituents [44], and thus reinforce community ownership of the initiatives created. In Finland, for example, Ásthildur Jónsdóttir held an art exhibition in collaboration with community actors from the town of Rovaniemi. Their initiative sought to elicit reflection on valuable sustainable practices through art, which they argue is inherently a vassal for contextualised meaning [37,44]. With its ability to relate to individuals, art is highly subjective, making it a perfect medium for the co-creation of intersubjective knowledge [44]. Its deep personal element and attachment to 'a community's history, culture, and social needs' had two significant impacts on sustainable thought in the community. First, the exhibition presented knowledge with an indigenous element, helping people relate to sustainability and recognise the importance of sustainable action in their own local context [9]. Second, it opened up a dialogue between community members on the meanings, issues, and solutions to the town's sustainability challenges [44]. This method is aligned with Brockwell's [3] framework, demonstrating the contextualised value elicitation, reflection, and contrasting of ideas, ultimately evoking a discussion about sustainability issues that need tackling in the locality.

4.4.2. HEI Engagement as a Regional Centre of Expertise (RCE)

In community-based initiatives, whether artistic projects or mission-oriented projects like "Boro Doughnut" or the Bristol initiative, HEIs' engagement contributes substantially to the development and monitoring of indigenous indicators for individual missions that the community chooses [20,45]. For example, Universiti Sains Malaysia (USM), in cooperation with the Regional Centre for Expertise (RCE) in the Penang region, administered ESD training to community members and university staff alike to equip them with the skills necessary to handle meaningful engagement initiatives [21]. The 'messengers of ESD' were taught to apply the Logical Framework Analysis (LFA) method to 'structure the main elements in a project and highlight the logical linkage between the intended inputs, planned activities, and expected results' [21]. This helped them form prolonged community–university partnerships, create indicators for the identified issuesand, and implement sustainable knowledge into the curriculum, thereby contributing to a sustain-

able university [21]. Today, RCE Penang is still collaborating with USM to foster ESD and promote SDG-focused action for teachers, students, and community alike, as shown in their Green Garden [46], and Merbok Mangrove [47,48], initiatives.

Examples of ESD initiatives involving the university, community, and city are pivotal to understanding transformative learning. These initiatives offer service-learning opportunities while contributing to knowledge co-creation for ESD methods [49], prompting actors to evaluate which methods are effective and encouraging them to influence university governance systems to transform their curriculum and policy approaches [28]. These reciprocal co-creation networks between students, the community, and lecturers demonstrate the benefits of HEI engagement in communities for transformative, intersubjective learning. These strategies hold promise for successful governance approaches.

4.5. SDGs in Universities

While there are multiple contributing factors to integrating SDGs and ESD at local levels, an important steppingstone is identifying compatibility between SDGs and university courses [40,50]. Schantz et al. suggest that this is not a difficult or idealistic demand; indeed, many courses across various universities in the UK are already compatible with at least one SDG [11]. Taking the example of the University of Bath (UoB), Schantz et al. show that while SDGs map onto different courses at the UoB than they do at the University of Manchester (UoM), the proportion of compatibility between SDGs and courses is high in both universities [11]. They explain that the UoB, unlike the UoM, does not explicitly incorporate the SDGs into their courses, making it lag behind universities such as the UoM, a global leader on SDG implementation [11].

4.5.1. Course-Specific Integration of the SDGs

Leal Filho et al. [51] stress the importance of concrete SDG integration into HEIs through participatory, communitarian SDG-focused projects within courses and throughout university initiatives. To ensure the diffusion of action-oriented sustainability knowledge and SDG progress beyond the university, HEIs must reach out through social projects like community collaborations for sustainable goals. This aligns with the full integration of the social element in the sustainability Venn diagram displayed in Figure 2.

In this sense, a transformative learning approach linked to Brockwell's [3] or Sharma's [23] insights is useful in that it transforms reflection and contestation into missions and projects. As suggested by Pallant et al. [52], courses in "Environmental Science and Sustainability" (ESS) may give us a template to analyse the harmonisation of all the necessary elements for SDG integration in university curricula. In the first two years of the course, the students engage in approaches related to knowledge sharing, challenges, and consolidation reflected in Brockwell's framework [3]. Then, in their third year, they apply their knowledge to community–university joint projects, which highlights the engagement step necessary to transform knowledge into a practical experience after learning. Finally, students build on the feedback from their community project in a fourth-year research project [52]. This example symbolises how community initiatives can be learning opportunities for students.

Crucially, though, this approach adds a positive feedback element to ESD frameworks [3,53], where challenging ideas from external sources, in this case feedback from community and university stakeholders, reshape the student's ideas about their community project and help them construct a more holistic understanding of applied sustainable development [6]. This knowledge can be integrated into the student's future projects, reiterating Lin's [27] point on the regenerative cognitive nature of transformative service-learning. For this purpose, it is crucial to develop an experienced and supportive structure around students to foster knowledge sharing and critical thinking. To ensure this, the university must adequately prepare university and community members responsible for feedback to students as 'critical friends', or 'person[s] who assist reflective processes in a supportive and helpful way' [54]. These individuals are considered 'key agents' in HEIs striving to

be 'learning organisations', responsible as an 'outsider to an on-going initiative seeking to embed sustainability holistically within the student experience' [4,54].

4.5.2. Inter- and Transdisciplinary Integration of the SDGs

The synergies and trade-offs implied by the SDGs call for an SDG implementation from an inter- and transdisciplinary perspective, where different subject areas feed into knowledge co-creation [55]. In particular, SDG Target 4.7's interlinked relationship to the other SDGs suggests that the spread of ESD into other disciplines is feasible, as demonstrated by Schantz et al. [11] above. Other examples, such as Leuphana University's interdisciplinary module 'Science Bears Responsibility', available to all students at the undergraduate level, expand course-specific mapping of the SDGs with flexible inter- and transdisciplinary modules [56]. It is important to note that, especially in under-resourced HEIs, the presence of a broker between civil society and academics has been found to be essential in transdisciplinary projects; this can come in the form of academic or field supervisors [57]. Given civil society's ability to provide crucial 'context-specific knowledge' to SD initiatives [9], a symbiotic relationship between the community and HEIs is crucial to ensuring the success of SDG integration at the local level.

Similarly to the course-specific integration of the SDGs, inter- and transdisciplinary modules, such as the one proposed by Leuphana University, share their learning approach with the inside-out framework [3]. In their analysis, Michelsen found that students' favourite elements of the module were the ability to share their opinion, to confront views, and subsequently co-create knowledge, as well as the ability to then participate in sustainable action and measurement [56]. These are clearly compatible with Brockwell's framework [3] and the co-creation and participatory elements it puts forward. This example also shows the importance of transformative learning frameworks for fostering student engagement and commitment, which are attributes that the literature finds to be in dire need in the realm of ESD integration [58]. Michelsen's findings also align with Sharma's claims that ESD develops critical thinking, investigative approaches to learning, and transferrable sustainability-related skills [56]. In turn, this contributes to the notion that (a) modules similar to Michelsen's fit in well with value-centric ESD frameworks such as Sharma's [23] and Brockwell's [3] models, and (b) that students have much to gain from these frameworks—beyond their ability to foster sustainable skills and SDG advancement, examples that fit these frameworks, like Michelsen's [56], actually provide stimulating forms of engagement for the students.

5. Issues and Ways Forward

5.1. ESD Stakeholders in HEIs

The students surveyed by Pallant et al. indicated that their experiences lacked coherence 'without a structure "above" the curriculum to facilitate connections and interactions among their experiences' [52]. To overcome this, Pallant et al. suggest increasing involvement from faculty advisors in helping students build connections within and outside the university and aiding the transfer of academic skills to projects; they also suggest involving students in discussions on curriculum decisions, especially those related to SDGs [52]. Similarly, Leal Filho et al. suggest that although compatibility between SDGs and courses may be high, their integration is often an arduous and convoluted process. They explain that 'lack of training', 'lack of support from top management', and a general lack of feeling urgency explain the lacklustre implementation of concrete sustainability-related opportunities into courses [51], resulting in limited buy-in from faculty and students [58]. As Fernández et al. point out, in order to implement sustainability in university teaching, promote research, and disseminate sustainability knowledge, it is essential to foster the involvement and engagement of all stakeholders [59].

This inclusive approach aims to create a shared vision among stakeholders, emphasising the importance of collective efforts and collaboration [59]. These issues have been recognised by various education authorities; in the UK, for example, the authority has

released in their QAA Quality Code an ESD Guidance tackling these very issues [60]. The literature provides us with a set of case studies and theoretical frameworks to tackle each engagement issue.

5.1.1. Lecturers, Professors, and Researchers

By participating in community-learning initiatives like the ones DEAL or Bristol Green Capital organise, professors and researchers can receive a form of training through involvement in events like workshops, open discussions, and art exhibitions. Here, they can use their academic background to learn (perhaps a contribution) how to translate local/endogenously generated issues into indicators that can be measured, benefitting both the teacher and the community [20]. Then, they can use this knowledge in the creation of transformative learning approaches that foster ESD in their class activities. This means the university staff gain training while contributing to SDG progress and learning in their localities [51], effectively carrying out the missions of the civic university [5].

Such initiatives require increased investment from Senior Management Hierarchies (SMH), as well as a commitment to decrease/redistribute the existing working burden on lecturers and researchers, which in the past has caused issues such as teacher shortages because of the 'insufficient time' professors have on hand to perpetually supervise students in their transformative learning [61,62]. Indeed, in cases where proper support from the HEI superstructure was not present, lecturers have found transformative learning opportunities 'extremely burdensome', likely contributing to decreased engagement from lecturers and researchers [63,64]. Price et al.'s ESD Guidance advisory group identified this as one of the most crucial areas for development in the future [60].

Alternative solutions include fewer overwhelming forms of engagement, such as a collaborative development of sustainability frameworks for ESD with, for example, appointed representatives of a community group or project officers of a community-focused action research [34] programme. Commitment and engagement are also required from students, which will be discussed below. However, pluri-beneficial, multi-stakeholder solutions like these, compared to alternatives like formal training courses, will likely be more appealing to management due to the benefit that collaborative external partnerships can bring and gain their approval more easily [34]. Martinez-Buján et al. also suggest that in order to promote complex and effective transformative teaching styles, more attention and financing should be directed towards ensuring the quality of professors' teaching work, which they claim has traditionally contributed less to their recognition/has been valued less in academia than their research output has [63]. In a survey conducted by Everett, some professors have expressed intently this dilemma between the 'traditional tenure standards' of an academic career and participation in development solutions and the career risk this entails [65].

5.1.2. Senior Management Hierarchies (SMH)

Accordingly, if these approaches can push management to 'position... the SDGs as a framework against which their organisational mission can be aligned' [66], increased investment from external entities can be expected [19]. Furthermore, this mission-led (discursive) framing could in the future lead to a more diverse array of public and private funding [67], a net positive for SDG implementation in the 'Resource' area outlined by Cuesta-Claros et al. [4]. This is likely because framing university missions around the SDGs has the potential to initiate a 'deep transformation towards sustainable development' [67], and finance recognises this. Purcell et al.'s findings support these claims, as they find that those SMH that took on SDG-focused organisational missions were able to draw more people together in shared projects concerning the SDGs [66]. Crucially, the involvement of civil society actors in the re-alignment process of public actors such as HEIs has contributed to maintaining accountability [67], preventing asymmetry between the three tenets of sustainability (see Figure 2), and maintaining emphasis on delivering on social promises/goals.

5.1.3. Students

Lastly, to attempt committing students to the integration of ESD in their curricula, Tijsma et al. propose an 'interdisciplinary community service learning (iCSL)' model, where the approach is both transdisciplinary and interdisciplinary [58]. Transdisciplinarity in this context can be achieved through a service-learning approach spanning across disciplines to actively involve community members and non-academic collaborators, while interdisciplinarity can be fostered by promoting facilitated collaborative teamwork among students from various master's [58] programmes. These frameworks provide opportunities that 'foster greater commitment, justice, and social responsibility among students' [68]. At the same time, students themselves have expressed their demand for well-advertised, capacity-building, and positive platforms for dialogue with each other and their community; the students expressed that this type of platform would foster their engagement, empowerment, and understanding of sustainability and climate change [6,69].

Other scholars have noted that the propagation and multiplication of ecological and sustainable events, platforms, and initiatives on university campuses can help construct an eco-centric 'campus culture', which not only (a) fosters student knowledge on sustainability via accessible interactive spaces but also (b) contributes more broadly to the cultivation of a 'national ecological protection' culture, as seen in BRICS countries [9,70]. It is important to unpack both of these impacts individually. First, the creation of an ecological campus culture, through increased interactive opportunities for discussing and reflecting on sustainability, signals the incorporation of the "inside-out" sustainability learning model, which scholars like Brockwell have developed from and for communitarian initiatives, into university practice. This means that community-based frameworks have contributed to university learning approaches. Second, the expansion of the campus culture to a national eco-contributory culture signals a mutual contribution to the SDG agenda between the national and local scales. In addition, this expansion of eco-culture signals that, by giving back to the community, the university exchanges interactively and equitably with the community in learning and proactive initiatives. The process can begin with increased social engagement by the HEI in its locality, an approach that not only reflects the concept of "inside-out" learning back into communities but also promotes the notion that ESD exists as a tool for translating sustainable learning to action [3,70].

El Zoghbi and Ansari also find that platforms and events with increased social interaction, new pedagogical tools for learning, and a solution-focused approach garnered more positive student feedback, and students felt more confident in what they had learned in these cases [69,71]. This fosters further enthusiasm and a sense of agency in the students, elements of great pedagogical importance to meaningful transformative learning [65]. El Zoghbi and Ansari additionally emphasise the power that such pedagogical tools hold for overcoming communication barriers like academic jargon, which students indicated limited their ability to effectively communicate and understand sustainability issues [71]. Increased social interaction can foster understanding through extensive intersubjective engagement, such as service-learning, and new pedagogical tools, such as kinaesthetic learning, can help students break speech barriers by enabling 'substantially more integrated communication, support, and learning networks among students' [28]. Sundermann et al.'s study on sustainability pedagogy supports these conclusions, demonstrating that what they identify as courses involving 'meaning-making as self-realisation', characterised by formal and informal structures supporting sustainable action and reflection as a self-realising tool for students, hold the most promise for transformative pedagogies that promote sustainability [72]. Leading universities in this field have generated important student-led initiatives for developing and measuring indicators of ESD progress, such as the *People and Planet University League* and *Responsible Futures* [60].

5.2. For Profit or for SDG Progress?

On the one hand, part of the scholarship is sceptical about the idea that universities are doing the 'public good' when involved in community engagement (CE). Mtawa and

Wangege-Ouma argue that neoliberalism, by 'replacing ideals of public interest and democratic responsibility with ideals of individual responsibility, competition, and efficiency', can obstruct the fostering of the public good through CE [73]. This happens because of the bias of a market-centric system towards short-term income-generating initiatives, which promote immediate economic growth, over other longer-term, radically transformative initiatives, which might generate less revenue and be more difficult to accurately measure in terms of progress [1]. This is often the case for bottom-up initiatives that are not systematically supported by HEIs or their local councils and therefore not given the appropriate tools to create relevant indigenous indicators to measure progress. As Mtawa and Wangege-Ouma point out, this can turn CE initiatives into another source of revenue for HEIs during a period of large funding cuts and low financial incentives [73].

On the other hand, decreasing funding from private donors and government grants to civil society groups and community initiatives is forcing them to rely increasingly on universities for resources, both financial and participatory [1]. However, Brackmann warns both universities and civil society groups that this increasing dependence could create power imbalances in favour of the university due to its role as resource provider, thus potentially compromising CE's 'ideal of shared voice and participation' [1]. Indeed, in the past, academic institutions tended to 'be in conflict with the local community over their missions and roles' [21], and they sometimes disagreed on 'the type of knowledge that should derive from the project' [7]. An imbalanced relationship thus favours the university's missions, roles, and knowledge over the community's, souring relationships between the two. This imbalance and the tensions resulting from it could compromise the fostering of the type of transformative ESD that is intersubjective, egalitarian, and belonging to the community/locality, ultimately jeopardising the progress of SDGs in the community and university.

To address this issue, Brackmann suggests that the way forward is a 'transformative partnership. . . [which] includes community organisers as leaders in partnership', involves 'the whole university' in the effort, and transcends individual and private interests by moving away from the 'exchange focus' of neoliberal thinking [1]. Tessa Peterson explains that extended transformative partnerships between university and community provide students with continuous 'experiential learning' opportunities [74]. In turn, these opportunities will "enhance cognitive development and provide a fundamental shift 'from knowledge as self-interest and private good. . . to knowledge as civic responsibility and public work'" (Boyte and Farr, 1997; cited in [74]). This means that these partnerships can and must be mutually beneficial to maintain equity between stakeholders, paving the way for a paradigm shift in ESD from profit to social and sustainable responsibility.

5.3. Expanding City–University Partnerships (CUPs)

Using Brackmann's critical lens on models like CUPs, it becomes clear that this model needs expanding to avoid the aforementioned imposition of policy from the top. For example, Keeler et al.'s suggestion that universities can help cities by '[tailoring] evidence-based models to the existing capacity of the city and the demands of the transformation' [75]) reflects an approach to sustainable development that is not inclusive enough. It is easy to see how this model could be appropriated to benefit under-funded city councils and universities alike, while at best giving communities low direct representation. For example, Tilbury and Wortman point to the social marketing programmes undertaken by local governmental agencies, NGOs, businesses, and education centres that encourage more financially desirable ecological/"sustainable" initiatives over other, less profitable, and less marketable options, such as community education [34] programmes. This may come in the form of increasing investment and belief in technological innovation, and expert-led studies alone may help us outpace the 'wicked problems' that the SDGs wish to tackle, at the expense of 'broad social inclusion' programmes like community engagement initiatives [6].

By involving civil society and community groups in the process as stakeholders in all positions, from local organisers to leadership positions, a system where community,

city, and university communicate to foster local-driven ESD can be achieved [20]. This approach links to scholars' demands of adopting an approach that focuses on the stages of 'research–practice–policymaking', wherein research can inform practice at the local level and the feedback from this practice can be used to mould a policy fitting to the area for the council to adopt [76]. Scholars like Wang note that this would 'benefit teaching, research, and community services of HEIs' mutually [76]. To ensure fruitful partnerships, Krasny et al. urge governments and policy-makers to contribute by supporting civil society organisations that have historically positive records of trust-building and innovation with local communities to play the lead role in these social-ecological endeavours instead of taking the lead themselves [20]. Partnerships with global initiatives like ESD and CEPA and with NGOs are also encouraged to help 'leverage these learning areas to effect broader regional, national, and even global systemic change' [20].

These initiatives must naturally involve learning processes that adopt frameworks promoting indigenous identification of needs, solutions, and indicators for measuring sustainable development. For example, the Research Centre of Excellence (RCE) in Malaysia, despite having USM at its helm, allows each stakeholder to 'carry out their ESD programme as they wish' [21]. Crucially, all stakeholders are then invited to contribute to meetings, events, and boards, engaging in 'joint value creation', co-development of policy advice, and mutual capacity building [21]. An example of this was their flood-recovery project in unison with the Centre for Global Sustainability Studies (CGSS), where the needs of flooding victims were identified and tackled with continuous cooperation from communities and their leaders, and context-specific capacity-building ESD exercises were developed to address the prevention of future disasters [77]. The cooperative nature of this initiative, tying in 'academia, local officials, and local communities', was identified as the underlying crucial factor for the project's success [77]. Bottom-up, egalitarian, and intersubjective initiatives like these give students, civilians, and institutions alike the tools needed to foster positive, impactful, and sustainable education.

6. Conclusions

Looking at the ways forward, we now need to frame transformative ESD frameworks such as Brockwell's and Sharma's within the financial and moral constraints of SDG implementation and monitoring [32]. To implement large-scale transformation, attention must be paid to how we can ensure equal access and input for all HEI stakeholders in shaping the implementation and monitoring of the SDGs in their locality. In this form, a partnership between community and university can challenge the neoliberal character of SDG implementation today and potentially drive progress from the ground up through transformative learning approaches that emphasise social and local goals [20].

The transformative learning approaches explored in this systematic literature review help us understand how SDGs can be advanced and monitored from the bottom up. These methods promote ESD equally among university participants and community members, fostering knowledge co-creation to address SDG-related challenges in the locality. Long-term engagement in these initiatives, coupled with reflection and discussion sessions, equips participants with critical thinking skills that enable them to recognise and analyse interconnected local-global issues. These skills are not limited to academia but extend to participants' professional lives, allowing them to apply critical thinking and problem-solving abilities to promote sustainability in their careers. Moreover, the systems-thinking acquired through ESD empowers them to be responsible global citizens beyond their jobs, making sustainable decisions in the private sphere.

6.1. Merging Value-Centric Community Approaches with the SDG Dashboard and Doughnut Economics

Figure 6 shows how to combine the bottom-up doughnut framework [18] with the top-down SDG approach to sustainability. In order to accomplish this synthesis, thereby transforming local value-centred projects into localised SDG platforms, university gov-

ernance approaches must accomplish the three C's—or three missions—of the civic university. These are a sustainable campus, community-based values, and global citizenship, as shown in Figure 6. These three missions are an expansion of the three missions of the university—education/teaching, research, and community engagement/outreach [78]. Education, specifically through ESD approaches, instructs local-global **citizenship**, while outreach and green procurement practices are relevant to both campus and the **community**. The research on ESD reviewed here applies to all the new missions and has been used in past **campus** experiments to develop what USM calls "inside-out" initiatives. This entails researching, applying, and monitoring sustainable initiatives on campus before expanding the approach to community initiatives [21].
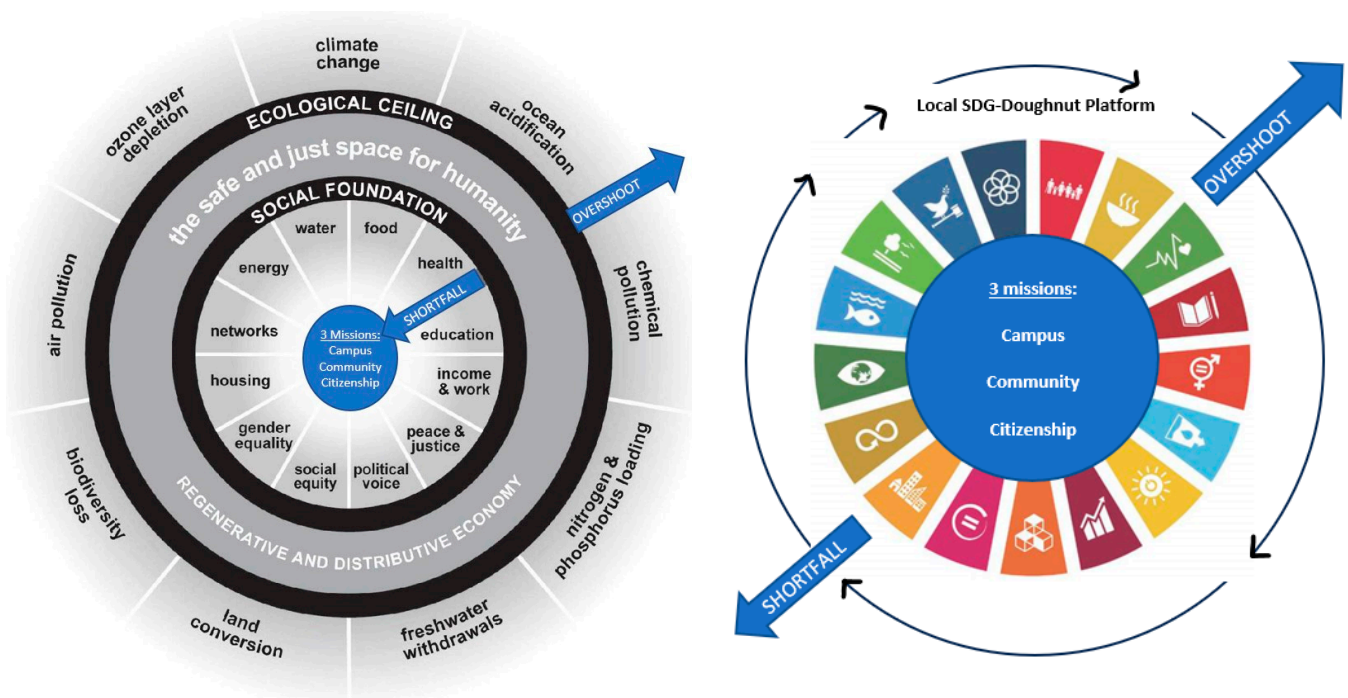

Figure 6. From value-centred missions to a localised SDG platform. Source: Authors' elaboration.

Furthermore, by developing a sustainability-centred social paradigm, value-centric transformative learning is fostering the growth of responsible citizens who can critically understand and apply theories like Doughnut Economics, fully incorporating into their reflections and actions the concept of a safe and just space for development andunderstanding the dangers of overshooting or falling short. To accomplish this, it is imperative that citizens strive to achieve the SDGs and that they do so by valuing the community's knowledge on the application and monitoring of SDG initiatives.

In their paper, Warnecke convincingly maps both the inner ring 'Social Foundation' and outer ring 'Ecological Ceiling' components onto SDGs and their indicators, emphasising their nature as 'close matches' to each other [79]. This means the Doughnut model is an equally useful framework to elaborate on current practices in CUPs [79], including ESD-focused transformative learning initiatives as well as sustainable governance strategies. However, they do explain that the Doughnut model's outer ring is "not designed to be downscaled" (Turner and Wills, 2022; cited in [79]), and its indicators are therefore not properly suited to a downscaling or localising effort like SDGs are. This being said, Warnecke emphasises that the implementation of Doughnut approaches in (expanded) CUPs is imperative to fostering collaborative spirit among community, city leadership, and local institutions, such as HEIs, despite the possibility of excluding some ecological and social components of the doughnut [79]. Similarly to SDG projects, these collaborations can

help the city 'gauge priorities from the context of the doughnut' and provide a 'foundation for further evolution of objectives, targets, and the implementation plan' [79].

6.2. Summarising the Impact and Significance of Transformative ESD

Community–university ESD initiatives make people alert to the interlinked nature of the SDGs and the problems they tackle; they also help communities reflect on behavioural habits and local priorities from a sustainable lens. One way in which ESD can achieve this is by linking the problems faced by people in their locality, as well as the impact of their consumption habits, to the global scale. As we have explored, the success of participatory ESD initiatives is due in large part to the fact that these approaches demand the incorporation and cherishing of indigenous knowledge about the locality in sustainable learning. Approaches that seek to 'understand the kinds of learning and knowledge that [communities] deeply value' will generate 'a sense of belonging, connectedness, and capability' in the community, increasing their will to participate in these initiatives [80]. Discussions surrounding problems and possible solutions always involve the community, because they are the most authentic authority on the impacts of the "wicked problems" in their community. Across the globe, these ESD approaches can contribute to a rekindling of Indigenous and communitarian forms of learning, problem-solving, and governance, which have been traditionally obscured by Western-centric neo-liberal forms of knowledge and organisation.

To summarise, transformative, participatory, and value-centric ESD approaches advance the SDGs by fostering critical sustainable skills with participants, which are then transferrable to their professional and private lives. Additionally, transformative learning approaches linking the Doughnut to the SDG bring long-run benefits for global sustainability in the following ways:

1. Understanding the concept of a "safe and just space" for life on earth and the dangers of overshooting or falling short of this space at the local and global levels.
2. Building resilience in communities in partnership with the civic university and all HEI stakeholders, emphasising the importance of participatory and communitarian learning to tackle systemic issues.
3. Expanding the understanding of SDGs from individual targets to a network of targets to be solved systematically at a local, regional, and global level.
4. Reinvigorating other knowledge and governance systems, which have been undermined by colonial and neo-liberal paradigms, in hopes of bringing about significant progress in SDG integration over profit.

7. Future Research

This Systematic literature review reveals some areas of interest for future research in the field of SDG governance, specifically concerning those approaches that foster ESD in an inclusive, indigenous, and egalitarian manner. The potential for future research is immense, and the value of additional data on governance is of extreme importance for progressing the SDG Agenda 2030. To fill the gaps in our current literature, future research should be conducted into the devolution of SDGs into local institutions that have democratic and participatory principles, such as community initiatives, HEIs, and city councils. Egalitarian university–community–city partnerships should be central to this process in the way that they also lead to a re-balancing of the economic-social-environmental pillars of sustainability (Figure 2), and in particular to the fostering of localised and Indigenous knowledge and governance forms relating to the SDG 2030 Agenda.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su16072752/s1.

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