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The Use of Reflective Pedagogies in Sustainability Leadership Education—A Case Study

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Abstract: This study aims to examine the use of reflective pedagogies in sustainability leadership education by investigating two specific pedagogical tools—the Portfolio and Pod—employed by the Master's in Strategic Leadership towards Sustainability (MSLS) program at Blekinge Institute of Technology in Karlskrona, Sweden. The study analyzed data gathered from student surveys, teacher interviews, and staff reflections to determine the benefits and challenges faced by students and staff in implementing and engaging with these pedagogical tools. Benefits include the provision of distinct structures to guide student reflection towards individual skill development and the use of collective reflection to encourage generative dialogue between students and staff. This holds benefits for collaboration, self-awareness, understanding of multiple perspectives, and creating self-directed graduates. Staff and students also, however, suggest a number of challenges. These include the 'constrictive' nature of guided reflection and the emotional and mental load faced by staff in hosting and holding students through often challenging personal reflective processes. For the potential of reflective pedagogies to be truly realized for Education for Sustainable Development in higher education institutions need to develop an understanding of the impacts that reflective pedagogies have on students and teachers and create institutional structures to support them.

Keywords: sustainability; pedagogy; reflective learning; higher education; leadership

1. Introduction

1.1. Towards Transformational Education Approaches

As the consequences of our unsustainable lifestyle become apparent, active professionals who want to change human systems, break conventions, start new initiatives, and take responsibility for solving our problems are increasing [1]. If Higher Education is to play a significant role in developing graduates as sustainability leaders, then educational programs guided by values of Education for Sustainable Development (ESD) and driven by a focus to develop sustainability knowledge and skills are required [1]. In addition, these programs need to educate both *about* sustainability and prepare students to implement and lead solutions *for* sustainability [2]. This means focusing not only on 'what' is learnt, but also 'how', considering which pedagogies are most suitable for sustainability outcomes [3–5].

Research indicates methods of learning that are based purely on traditional instrumental approaches that treat students as passive recipients of information require transformation. Instead, the adoption of pedagogical approaches that encourage learners to critically consider and reflect on traditional worldviews, practices, and behaviors is needed [6,7]. This requires engaging students in a praxis of dialogue and action that help them deconstruct themselves and the world they live in [8], transgressing boundaries and creating pathways to participation and shared meaning making [1]

towards global futures. Creating environments for this kind of learning implies designing spaces in which students and educators are encouraged to be present as human beings and join in holistic learning experiences [8,9] with co-owned objectives, shared meanings, and a joint, self-determined plan of action [9] between teacher and learner.

1.2. Reflective Learning as a Key Approach

A key pedagogical strategy for transformational learning is the utilization of reflection. The practice of reflective learning is widely accepted in educational circles as a mean to cultivate deep and lifelong learning, as well as professional practices [10–13]. Furthermore, outcomes such as critical thinking, self-determination, and development of reflective capacities mean reflection is considered an important element of both learning processes and pedagogical design. Yet, the adoption of active reflective- and contemplative-specific pedagogy in the classroom remains emerging and experimental [7,14]. Described as the process of internally examining an issue, triggered by an experience which creates and clarifies meaning in terms of self and that results in a changed conceptual experience [8,15], reflection offers a pathway to transformational approaches through its ability to shift participant perspective. Practices such as journaling, discussion, art, meditation, or dialogue with a mentor or group are common reflective practices [16] and use tools such as written portfolios, incidental, and anecdotal professional reflection to encourage learning. These help promote important learning outcomes by increasing relationships between theory and practice, developing coping skills for practical situations, and providing better understanding of new information [17–19].

1.3. The Importance of Reflective Learning for Sustainability Leadership Education

The importance of improving reflective capacity in sustainability leaders emanates from the belief that reflection imparts a number of useful capacities to sustainability leadership [20]. These include skills of self-awareness and critical thought that are crucial to sustainability leadership development [19]. Reflective practices are seen as a means to foster awareness, empathy, collaboration, deep listening, engagement with diverse perspectives, and improved and creative responses towards sustainability [14]. Through reflection, individuals can learn to consider and then change habits and expectations, enhancing their decision-making capacity as they develop accurate perceptions, avoid premature cognitive commitments, utilize greater flexibility and creativity, and extract learning from practical experience [10,19]. These are qualities that make graduates capable of engaging in the ongoing debate, discussion, and deliberation regarding sustainability transformations [21] and also promote needed qualities of disruption, resistance, and desire for tangible social change [2]. Developing personal awareness in ones relationship with sustainability challenges and being able to critically consider how to respond to complex challenges is often seen as a prerequisite for sustainability leadership, especially when sustainability students do not often graduate into ideal sustainability jobs in supportive organizations or institutions, but rather must design and lead the work towards sustainability transitions [21–23].

Furthermore, influential educators such as Paolo Freire argue that reflective practice is the precedent from which tangible social action occurs, arguing that it is the combination of reflection and action on the world that transform it [24]. For sustainability educators, the challenge of creating leaders means they must not only implant new ideas but modify or dispose of the old ones. By engaging in reflective practices as part of ongoing pedagogical practice, educators may contribute to this important outcome [14,24].

However, despite a growing body of research describing innovative pedagogies for ESD, one area that has lacked research has been the investigation of pedagogies that promote and encourage reflective practices distinctly *for* sustainability [14]. The consideration of how to ensure reflective pedagogies can support effective decision making in future leaders requires experimentation and consideration by ESD practitioners in order to consider its ongoing potential [14,25]. This paper aims to contribute to this discussion.

The authors have been part of a sustainability program that has successfully utilized various reflective approaches within its pedagogical approach over a number of years. Thus, this paper presents a case study of two significant pedagogical tools that embrace reflective learning within a master's level sustainability leadership course. It aims to consider the value and impact of reflective pedagogies of sustainability graduates as future leaders. The following section describes the background of the case study, as well as how data were collected and analyzed. The Results section gives perspective from both the student and the staff side, which is examined and then discussed within this paper.

2. Research Methods

This study was carried out by researchers and program staff of the Master's in Strategic Leadership towards Sustainability (MSLS) program, who are also researchers in the field of leadership education for sustainability. It adopted a qualitative case study approach that aimed to investigate the 'worthwhileness' of the described pedagogies [26] and aims to describe the benefits and challenges encountered by students and staff in engaging with these pedagogies. Case study methodologies are seen as a strong research approach to investigate ESD, yet this study aims to consider some of the critique such approaches have faced. These are that case studies should consider the explicit role of the authors, promote a critical analysis of the case, include all people impacted by the study, and have the potential of contributing the improvement of the field of sustainability in higher education [27].

2.1. The Case Study

This study focuses on two specific, but related pedagogical tools used within the *Leading in Complexity* course of the MSLS program of Blekinge Institute of Technology (BTH) in Karlskrona, Sweden. The two main tools considered by this study are titled the *Portfolio* and *Pod*.

In 2004, BTH launched the international, transdisciplinary MSLS program. MSLS is a 10-month transformational program situated in Karlskrona, Sweden, that focuses on advancing students' knowledge, skills, and global networks, in order to build their capacity to be strategic leaders in the co-creation of thriving, sustainable societies. Each program has a cohort of 40–50 students from 15–20 countries and is conducted in person on campus. The program is open to anyone with a bachelor's degree with required English skills and intentionally invites all academic and professional backgrounds so as to bring diversity of experiences and perspectives into a transdisciplinary classroom. Student ages range from 20 to 63, with a concentration in the late 20s to early 30s. A recent survey of program alumni revealed that 93% of the 217 respondents categorized the program as a transformational experience for them and identified awareness of self and others, confidence to navigate complexity, an expanded worldview, and finding hope and inspiration as key elements of their experience. Many named the reflective exercises and the diversity engaged in the community as being key to their transformation (Manuscript in progress Bryant, et al., 2020).

The program is designed around two key pillars of learning—Strategic Sustainable Development (SSD) and Leading in Complexity (LiC). The purpose of the LiC course is for students to (1) develop deepened knowledge about and understanding of theoretical foundations for leadership in complexity, specifically related to transformative change for sustainability and (2) develop skill required to work effectively with complex challenges, including the ability to critically reflect on various approaches in the field. While a separate, distinct course, the LiC journey is intricately interlinked with all other parts of the program through, for example, providing process tools for group work, which takes place in other courses, or time for reflection and making sense of the content of other courses. The course uses as its basis a skills map (see Table 1) to guide learning outcomes. The map has been developed over several years by the program through a combination of theoretical understanding [6] and practical experience. The skill map consists of four domains that sustainability change agents need to develop skills or capacities in. Building on the understanding of different kinds of complexities that define our world, namely dynamic, social, and generative complexity [28], from here the domains of systemic, participatory and innovative solutions were derived. Based on program experience, underlying all

of this is what has been called the personal domain, which relates to the internal capacities of the change agent as leader. While the domains map well to Wiek et al.'s highly cited competencies [23], they were derived independently. Each domain comes with underlying theories and concepts, as well as a general ability and specific tasks student should be able to do. For example, in the systemic domain, one general ability is to map systems and one specific skill within that is to map relevant stakeholder and relational dynamics. Another skill, in the participatory domain and under the heading of working well in diverse teams, is to give and receive feedback. The course´s and even the whole program´s content is then mapped to these skills to show the students which course/program moment (lecture, workshop, or other learning activity) is aimed to support the development of which skill.

Table 1. Leading in Complexity skills map.

	Underpinning Theoretical Models	
	Systems Thinking [29,30], Nested Systems Capra in [31], Complex Adaptive Systems [32], Cynefin Framework [33], Definition of Success to Guide Systems Boundary, [34], Transition Theory [35], Berkana Two-Loop Model [36,37], Leverage Points [38].	
	General ability	**Specific task students should be able to do**
Systemic	Map systems	Draw nested system model for given system domain
		Organize information relative to systems into appropriate categories
		Map external political, economic, social, technological, environmental, and legal system dynamic relevant to given organization
		Map relevant stakeholders and relational dynamics
		Map material flows within an organization
	Analyze systems against success	Evaluate organizational sustainability performance
		Identify organizational Strengths, Weaknesses, Opportunities, Threats
	Select appropriate response to different types of challenge	Reflect on characteristics of challenge at hand and select appropriate intervention approach
	Underpinning Theoretical Models	
	Team Processes, [39], Creative Tension [29], Participatory Decision Making [40], Theory U Process [41].	
	General ability	**Specific task students should be able to do**
Participatory	Work well in diverse teams	Create shared clarity of purpose, task, role, process
		Select and use appropriate team decision making process
		Plan, execute and reflect on tasks at hand
		Map relational dynamics underpinning conflict
		Give and receive feedback
		Understand and work with different personality styles
		Navigate team processes successfully to achieve task
	Develop & inspire shared vision	Create and frame clear vision, purpose, and value statements
	Stakeholder engagement & motivation	Present and speak to an audience in a clear and engaging manner
		Map and tailor communication to stakeholders with multiple worldviews
		Gamify challenges to create motivation and engagement
		Empower others to act
	Work with participatory processes	Design appropriate participatory processes
		Host and facilitate participatory processes
		Harvest and strategically visualize processes

Table 1. *Cont.*

	Underpinning theoretical models		
	Critical Thinking [42], Prototyping [43], Backcasting [34,44]		
	General ability	**Specific task students should be able to do**	
Innovative	Question current situation	Ask critical questions	
		Assess current challenges	
	Propose and test new solutions	Creative problem solving in quick iteration	
		Guide thinking by what may be appropriate in the future rather than now	
		Employ a strategic approach when selecting next steps	
	Underpinning Theoretical Models		
	Developmental Psychology [45], Theory U [41], Humble Inquiry [46]		
	General ability	**Specific task students should be able to do**	
Personal	Connecting to Others	Foster one´s own empathy and compassion	
		Listen, initiate, and participate in dialogue	
	Self-authored Learner	Continuously and intentionally learn and develop	
		Manage own time and priorities	
		Strive for self-awareness and engage in critical self-reflection	
	Personal resilience	Develop mechanisms to dealing with complexity and uncertainty on a personal level	
		Develop clarity of your own potential roles in society´s transition	
		Constantly renew one´s energy and take care of oneself	
	Attitude	Develop an inspirational and can-do-attitude	
		Develop courage to challenge the status quo	
		Act as a role model to others (walk the talk)	

The course utilizes two main reflective tools, the Portfolio with three separate deliverables and Pod; these two pedagogies within the LiC course are the focus and boundary of this case study and are described below in Table 2. As mentioned above, the Portfolio and Pod interlink with the LiC course content, as well as content of other courses within the MSLS program, and as such serves as the container for formal reflection and collective reflection through dialogue. All learning activities in all courses employ informal, mostly group discussion and reflection.

2.2. Participants and Data

This study utilizes two main participant groups as data sources, they are students who attended the course in 2016–2020 and staff who taught the course in 2016–2020. Data for this study were gathered from students' surveys, teacher interviews, and teacher/researcher reflections.

1) **Students**: Gathered through course evaluation surveys collected between the cohort years 2016–2017 and 2019–2020. The course evaluations are gathered through online forms, which are shared with all course participants; there is usually a 10-day window to answer the evaluation form. The evaluation is conducted anonymously, and students are asked to provide quantitative and qualitative feedback and reflections on all parts of the LiC course. For this study, only the questions relating to Portfolio and Pod as well as general feedback on the course that touches on these pedagogies have been considered. The questions ask whether each pedagogy was supportive for the students learning and why, and as such do not take an explicitly reflective learning approach as this is not the only pedagogical approach employed in this course. These surveys provide a dataset of 65 students (2016/17–22, 2017/18–24, 2018/19–5, 2019/20–14). Since the data is collected anonymously, it is not possible to gather to determine demographic data on participants besides indicating the general demographics of the cohort (see above). While a quantitative response

regarding the supportiveness of each of the pedagogies is not available for all years, it is provided for the first year (2016/2017) and the most recent year (2019/2020). The numerical value is presented as an indication of student sentiment, but it not the main focus of this qualitative study as the qualitative statements from the students provide more of the nuance relevant for this discussion. Themes from this data serve as the studies basis of evaluation from a student perspective.

2) **Staff:** All but one staff member involved in the delivery of the course between 2016–2020 was interviewed: This included one individual and one group interview with four former and current staff of the program. The collective interview adopted a focus group style in order to provide informal discussions regarding the phenomena and the experience of the teachers. All interviews were conducted in person or via internet conference.

Table 2. Case study description—Portfolio and Pod pedagogies.

Description	Pedagogical Intention
Portfolio-Skill Assessment and Development	
This involves an initial self-assessment based on the LiC Leadership Skills Framework (Table 1) as a rating (0–5) as well as a qualitative description giving evidence for the rating. Students then create a development plan. Based on their own assessment, students pick one or two skills from the map that they would like to improve and commit to practicing during the learning period and create a plan for developing that skill. At the end of the learning period, they conduct a written assessment and reflection on the development of the skill selected. Guiding questions include: • What are some fundamental elements to keep in mind when applying this skill, which you have learned through your practice? • Was there a work/life situation over the last few weeks when having practiced this skill came in useful for you? If so, how was it useful? • Having reflected on your practice over the past weeks, how would you now assess the following criteria for the skill you have been practicing: 1. Skill Competence 2. Skill Confidence 3. Progression towards goals set for skill 4. Personal adherence to development plan • Do you have any reflections on the assessment above? • How might continuing to develop this skill support you in your work over the next months/years? • If you were to draw your learning curve for this skill to show your development over time, what would it look like in terms of goal attainment and confidence? • What worked well during the time you were practicing this skill and why? • What challenges came up while you were practicing this skill? • What lessons can you take away about your own learning process? • What could you improve in your learning process and how? • What are your next steps? • Three loops of this activity occur during the year.	The aim of this piece is for students to become self-directed learners by setting their own goals and structures for accountability. To do so well necessitates the ability to reflect on one´s own strength and weaknesses both in terms of skills but also learning process design. The guiding questions are intended to help students develop their reflective muscles and learn about themselves in terms of learning process.
Portfolio–Theme Summaries and Reflection	
This requires students to engage and reflect on delivered weekly lecture or workshop content of the LiC course (readings/lectures and workshops). Students are asked to provide a one-page written content summary and one-page personal reflection on given questions for each theme: • Did any personal insights or "aha´s" arise for me while learning about this theme? • What are the critical questions I have about this theme? • Did I find any particular ideas under this theme challenging and on what grounds would I challenge them? • What practical relevance or implications does this theme have for leadership when addressing complex challenges within society? • How might I apply what I am learning within this theme in my own leadership practice – at MSLS or in the future? • What questions does this theme create for me that I want to work further with? • What else do I notice or find interesting under this theme?	The aim of this piece is critical and personal reflection regarding content learning. Students are asked to build their reflective muscles in engaging with sustainability leadership content.

Table 2. *Cont.*

Description	Pedagogical Intention
Portfolio–Individual Reflection Essay	
Students are asked to write a personal reflection essay at the end of each learning period answering a question posed by the staff in relation to a leadership topic, e.g., what they are learning about working in teams and about themselves in relationship to this theme?	The aim of this piece is reflective practice regarding their personal leadership journey, tying together insights from the two above. The reflection essays are commented on by staff, most often with questions to further reflection and deepened learning.
Pod	
Pods are smaller groups of 8–12 students that meet on a monthly basis with a staff member as a process of collective reflection. Students sit in a circle and share insights, challenges, and learnings as regards their learning journey. The Pod leader (a faculty member) facilitates the session with a number of key questions, usually using a talking piece and letting each student speak when they feel ready. An example of questions may be: • How are you feeling about your first few weeks at MSLS? • Where have you been growing and where would you like to focus your growth for the next few months? While the staff member begins the facilitation with a question, students are encouraged to co-create sessions towards their needs individually and as a group and bring in their own questions as well as help each other explore.	This piece aims to bring a collective reflection and meaning making aspect to the above. Sharing individual reflections in group and reflecting together in groups enables group building as well as perspective awareness on an individual basis due to the diversity of viewpoints in the group.

2.3. Data Analysis

Student feedback forms and staff comments were themed from statements within the feedback into '*benefits of*' or '*challenges of*' engaging with the pedagogical tools within each of the three sub-components of the Portfolio: (a) The Skill Assessment and Development Plan; (b) Theme Summaries and Reflections; and (c) Individual Reflection Essay- and the Pod.

Staff feedback is presented, summarizing the key themes that emerged from the questions to the staff about the Portfolio and Pod pedagogies: What are the *benefits*, what was *challenging for students from a staff perspective*, and what was *challenging for staff*?

While student responses were analyzed and presented as responses to each pedagogical tool and their subcomponents, the staff responses are presented as a more integrated assessment. This is because staff as the designers of the pedagogy inevitably see them more as an interconnected whole, while the students are both surveyed on each component but also may not necessarily understand them as an interconnected whole

Self-reflection of authors: The three authors also being staff members, including the program director, included our own reflection of the experience of the process in this case study given our deeper knowledge of the topic area from a research perspective and that one author—the program director (on staff for 12 years)—was also one of the creators of the pedagogical tools. With this reflexivity comes the intention to contribute to the improvement of the field of sustainability in higher education and acknowledges the role of authors within the program [27].

3. Results

3.1. Student Feedback

The results below present the insights on the two pedagogical tools and their components from the student evaluations. The section focuses on the benefits and challenges perceived by students and summarized in Table 3.

Table 3. Summarized student feedback within Portfolio and Pod pedagogies.

	Benefits	Challenges
Portfolio		
Skill Assessment and Development Plan	• Space for intentional leadership development • Structure • Self-directed learning	• Structure • Time pressure • Ineffective
Theme Summaries and Reflections	• Structured reflection leads to deeper learning	• Forced reflection • Time pressure
Individual Reflection Essays	• Deepening Learning	• Focus on the personal • Time pressure • Purpose
Pod	• Creating connection and gaining perspective	• Feeling challenged by others form of expression • Building enough trust

Portfolio: Skill Assessment and Development Plan

This plan asks the students to reflect on their own capacities and set a program to develop further "Leadership Capacities" utilizing the LiC Skills Map (See Table 1) as a guiding structure. In a scale ranging from highly positive, positive, neutral, negative to highly negative, 77.2% (2017) and 71.4% (2020) of students consider *Skill Assessment and Development Plan* as a positive or highly positive part of their learning experience.

Benefits:

Space for intentional leadership development: The positive rating is supported by statements such as: 'I am so grateful that I have the chance to reflect on a skill I want to develop to become a better leader and a better person. I love this time for constructive reflection.' Some linked it specifically to a much-needed piece of leadership development, namely that ' ... it gives people a chance to dive into personal development ... '

- **Structure:** Many students responded positively to the structures provided by the Skill Assessment and Development Plan with most of them referring to the structure as providing a good 'guideline' for their reflection. One student stated, '*I will always make a skills rating from now on, this is such a good tool*'.
- **Self-directed learning:** Furthermore, personal autonomy was useful for some students, '*I like the idea of self-awareness being taking personal responsibility of developing personal skill in addition to monitoring personal progression along the way.*'

Challenges:

- **Structure:** Whilst a number of students enjoyed the structed elements of reflection, others found a number of challenges with this: '*The way it was structured does not work for me at all. To detail orientated for me ... hence I only filled in what was required and then ignored it*' and '*the very structured, break it down approach to the skill development felt unnatural, forced*' highlight some of the main challenges students faced.
- **Time Pressure:** Other statements indicated further challenge with time or lack of personal growth as a result of the pedagogy, '*I left it for the last minute, it was nice as well, but felt frustrated by the little time I had to dedicate,*'
- **Ineffective**: Lastly, some students reported that the tool simply did not support their learning. '*I appreciate the beautiful thought behind it, however I don't feel it is much good for me because it did not help me at all*' or '*trying to quantify personal development is not working for me*' (referring to the numerical rating and sequenced development plan).

Portfolio: Theme Summaries and Reflections

This component comprises students writing a one-page summary of weekly readings and class content and one page of reflection on the content. There are generally 5–6 different themes to reflect upon per Portfolio submission. Examples of the themes include: Working with Conflict, Team Building, and Social Labs methodology. When it comes to the *Theme Summaries and Reflections,* 77.2% (2017) and 92.8% (2020) consider it a positive or highly positive piece of their learning.

Benefits:

- **Structured reflection leads to deeper learning**: A number of students articulated the useful nature of having the structured reflection promoted by the Theme Summaries and Reflection, which offered a defined process, '*I enjoyed formally reflecting and being in a routine from the start definitely helped,*' and '*Very helpful outline to use as a basis for reflection*'. Others also reflected that summarizing content themes and combining that with reflection provided a strong process: '*It was highly positive for me to have the space to summarize the reading as a way to consolidate the knowledge*' and '*the reflection as a way to deepen the personal intuitive thinking by linking learning and real-life reflection.*' Another student stated: '*These were incredibly helpful in helping me process what I had learnt*' and another simply described this as a '*learning accelerator!*'. Another student reflected: '*At the very beginning, I didn't like the reflections because I don't really like to write. In the end, I felt how those reflections helped me in my learning process and how they played a fundamental role.*' This deepening and integration of the learning experience echoes themes that surfaced in feedback in the Individual Reflection Essay also (see below).

Challenges:

- **Forced reflection:** Several students found the forced reflection within this structure to be challenging with several stating their discomfort with this process and the lack of usefulness in the learning. '*This was not my favorite. I think there were too many reflection questions and it wasn't necessarily questions that were meaningful to me*'. Another stated '*the summaries are something I feel like I'm doing because I have too. It is not helpful for me.*'
- **Time pressure:** Other students, however, also indicated that while there were some challenges with the structures provided by the pedagogy, they could see the value in it, but often remained impacted by time pressure, '*Although it was annoying at times. It helped me a lot better to remember the content and to digest it*' and it '*forced me to review what I learnt. I would have loved to do it nicely if I had more time.*' Issues with time pressure and the 'forced' reflection are themes that emerged in the Individual Reflection Essay feedback also.

Portfolio: Individual Reflection Essays

This is a two-page personal reflection essay that asks students to reflect on their learnings three times over the course of the year. The essay is based on an invitation to reflect on lessons learnt by asking, for example: "what did you learn about yourself with regards to teamwork?" or "what would you identify as key areas where you personally have grown or developed through your MSLS experience and why?" and "when during MSLS have you led? What did you learn from this experience?" The *Individual Reflection Essay* was deemed by 68% (2017) and 92.8% (2020) as positive or highly positive in the quantitative feedback collected.

Benefits:

- **Deepening Learning:** The Individual Reflection Essays also received a variety of statements articulating the positive aspects of this pedagogy through deepening and integrating the learning experience; '*this was definitely one of the best parts of class, it enabled me to lay down my thoughts and come up with more learnings than I had imagined,*'. Another comment echoed the positive experience, ' . . . *the reflection essay gave me the space to address some of the issues that had no other space . . .* ' and ' . . .

it allowed me to create my own idea about the learning process and take time to reflect on that.' A number of comments acknowledged the *'stream of consciousness style of writing'* being helpful for processing of thoughts. The structure of the essay was also found to be beneficial for many, *'it was really helpful for me to sort out my thoughts'* and *'it helped me to take a moment of reflection, otherwise I would not have done so.'*

Challenges:

- **Focus on the personal:** Several students, however, criticized the 'personal' nature of the reflection, preferring for a more 'content' orientated focus. It *'would be nice for the reflection essay to be more related to the readings'*.
- **Time pressure**: A number again also highlighted the time pressure that they experienced. *'I kind of rushed through this one, I found it less useful to have this one big one (essay) at the end.'*
- **Purpose:** Other students highlighted challenges with its purpose, stating, *'I did not see the purpose for the essay, so I didn't invest too much time'* and *'I wasn't sure this added too much beyond my weekly reflections.'*

The Pod

The Pod is the group dialogue with 8–12 students and one staff member that meets on average once a month throughout the year for 2 h, for conversation, collective reflection, and dialogue. Of the students who responded, 72.7% (2017) and 92.8% (2020) consider Pod as positive or highly positive support for their learning.

Benefits:

- **Creating connection and gaining perspective:** Many students enjoyed the collective reflection of Pod with sharing appreciation of the *'very nice and safe space to talk about things happening'*. Other statements suggested the power of the Pod pedagogy included answering questions, providing support, and creating connection through conversation. Statements included, *'Yes! I really love this space for sharing whatever wants to be shared. It gives me a lot of support to hear about the struggles and thoughts of others and makes me feel more connected to my classmates.'* And another, *'Pod meetings is one of the most interesting things I have experienced and think I would carry this experience with me to the workplace, it was a place to express one's own feelings and thoughts and to see how others feel and think as well.'* Some of the positive feedback requested for there to be more Pod meetings with some suggesting *'every two weeks'* and another *'every week'*.

Challenges:

- **Feeling challenged by others' form of expression:** These statements were contradicted by a minority of students who felt that collective reflection was not enjoyable or beneficial for their learning, *'each meeting we had brought me down. There were too many complaints and disturbing issues brought up in my group–which would not bother me otherwise, but I tended to adopt the mood'*. Others said, *'some were good, some felt like festivals of whining whereby we took it in turn to moan to the staff. I didn't get much values out of listening to others moan for two hours.'*
- **Building enough trust:** Another statement spoke to the difficulties with trust in spaces of collective reflection. Referring to an agreement that is made at the beginning of each year, a student stated, *'I do have concerns about it being a space where what's shared doesn't leave the room, I think maybe signing an agreement might reinforce this.'*

3.2. Staff Evaluation

Staff evaluation of the two pedagogies centered around three core themes-*Benefits*, what was *Challenging for students* from a staff perspective and what was *Challenging for staff*. Where direct quotes are used, they are italicized. The overview is seen in Table 4.

Table 4. Summarized staff reflections of Portfolio and Pod pedagogies.

Benefits	Challenges for Students	Challenges for Staff
• Learning • Structure • Creating a constructive container	• How to reflect • Motivation	• Policing • Hosting Uncertainty • Resources

Benefits

- **Learning:** The Portfolio in itself is seen as a great resource for future content reference for students. The process of weekly themes + reflections and Pod allow for a deeper critical engagement with the content than might be the case without reflective practices and in the process, students learn how to have deep and generative conversations and about themselves. '*Learning about different ways of being in conversation ... for some it is massively uncomfortable sitting in a circle*' but then they get used to it and start talking about their perceptions and feelings. The Portfolio and specifically its self-determined skills assessment promote the '*important leadership skill to be self-directed ...*' and promotes '*self-designed accountability systems in the context of an academic program*' that will benefit students in their careers and personal growth.

- **Structure**: The structure of Portfolio and Pod is an opportunity for staff to regularly check in with students and focus on their leadership development via written and dialogic structures and allows for students to practice '*flexing the muscle of reflection.*' The structures also keep students accountable in terms of delivery, although challenges with this accountability are noted below.

- **Creating a constructive container:** The process '*holds a space of breathing for students*', by providing moments of reflection, which are necessary for transformational learning. Students are invited to '*show up fully*', even in the messiness of their development and are supported in moving through it in a generative way. Through this they build stronger relationships, a better learning community, and support network for their future work.

Challenges for Students

- **How to reflect?** Many students experience the idea of reflective and self-directed learning as novel and do not know how to do so; many want/need much more guidance than staff can provide and also find the structure of support in its current form challenging. Others find slowing down and reflecting difficult as this is not something they are used to practicing, especially if they are used to an academic context that is more transmissive.

- **Motivation:** The reflective practices employed do not suit all students. Not finding a way that suits them, for many undermines the motivation to engage in reflection at all. (Some) students also struggle with the balance between the extrinsic vs. intrinsic motivation of engaging in the activities and therefore also struggle with delivery and accountability. e.g., '*moving from 'grades' to reflection can be challenging*' for some.

Challenges for Staff

- **'Policing':** As students struggle to engage in the process with full commitment and accountability, the role of 'policing' falls on staff (since deadlines and assessment needs to be enforced), which can make the role feel more authoritarian than coach or guide. The encouragement of personal learning journeys can also mean it is difficult to force students to reflect 'on time' (for the deadline)

- **Hosting uncertainty:** Hosting the reflective process is significantly demanding as students often end up confronting fears or traumas from the past. This requires that staff are equipped with both coaching and mentoring skills as well as the ability to stay centered themselves in situations where they might be personally challenged or feel underqualified e.g., '*dealing with students' emotion, anger and trauma*', while '*not being a trained counsellor.*' or '*balancing the life tragedy in a group needs the rights skills and handling and can be harmful if not done well.*'

- **Resources:** Supporting the above-described reflection and transformation processes for 8–12 students is an intense process, both emotionally and from a time perspective, which is in conflict with the lean approach of university management of courses. It results in challenges in which the processes '*don't have enough hours*' in the official time planning or the time planning is not flexible enough to deal with the dynamic nature of these processes and staff use their personal time to support in challenging times.

4. Key Findings

4.1. Affordances and Limitations of the Case Study Pedagogies

As highlighted in the introduction, sustainability leadership education outcomes include increasing self-awareness and personal transformation towards new habits; the development of empathy for and comfort in engaging with multiple perspectives; the development of critical thought for enhanced decision making and practical social action. Examining the case study from this perspective, we can see that the Portfolio and Pod pedagogical tools investigated provide some positive results to these four outcomes, while also suggesting the need for further support and innovations. Key findings for these sustainability outcomes are introduced below with further exploration of innovations and recommendations for educators in the discussion section.

4.2. Development of Self-Awareness and Personal Growth

A number of the students reported the further development of self-awareness as a result of the pedagogies, articulating that the Portfolio helped them '*deepen the personal intuitive reflection by linking learning and real-life reflection*' and that increased personal awareness led to more agency, for example by '*taking personal responsibility of developing personal skill.*' This developing sense of self-awareness is often evidenced by student ability to engage more constructively in group work over the course of the program and through the increasing 'wholeness' with which staff see students bring to the Pod over the course of the program. In other research, 93% of alumni reported that the program was a transformational experience for them, inferring that the student sense of self had grown and shifted during MSLS. The pedagogies of the case study remain the place where distinct practice and process regarding reflection and relationship with self, through the Portfolio and within the group, through Pod, occur. Furthermore, interaction during Pod enabled a developed self-awareness in relation to other individuals through collective reflection, as students '*share (. . .) thoughts and feelings, support other people and be supported*'. Another student indicated that the successful implementation of reflective behaviors had resulted in transformed behavior with the intention that they would '*always make use of a skills rating from now on, this is such a good tool*' and that the pedagogies provide a process that '*gives people the chance to dive into personal development that is so needed (in general and not only amongst leaders.*' This suggestion by students of personal growth highlight the role the pedagogies play a providing a place to practice both understanding of self and deliberate, intentional personal development and transformation as a needed characteristic of sustainability leadership.

4.3. Increased Empathy and Comfort with Multiple Perspectives

Furthermore, students articulated the outcome of collective reflection, specifically the Pod, as a place where empathy and comfort with multiple perspectives developed, '*yes! I really love this space for sharing whatever wants to be shared. It gives me a lot of support to hear about the struggles and thoughts of others and makes me feel more connected to my classmates.*' While another suggested these pedagogies provide a place '*to see how others feel and think as well*' and that the pedagogies are '*important to create trust between students and staff.*' One staff member suggested that while it can be challenging for some students, an outcome of collective reflection involved '*learning about different ways of being in conversation,*' an important aspect of engaging across diverse perspectives and understanding, and a significant skillset used in engaging diverse stakeholders on sustainability issues and solutions.

4.4. Development of Critical Thought and Reflective Decision Making

A number of statements support the notion that students practiced critical thought through the pedagogies and as a result of their reflective experience. For example, the Portfolio and its' reflection essays often became the space where critical outcomes and questions with content or collective engagement were shared, '*the reflection essay gave me the space to address some of the issues that had no other space to discuss.*' Another student articulated that they '*love this time for constructive reflection*', which supported deliberate consideration of their experience as facilitated by the pedagogies; one that allowed them to critically examine their experience to uncover learning by questioning their response, positive or negative, to content taught within the LiC course. These questions were often then raised and discussed within Pod meetings. The Portfolio structure required students to critically consider questions that arise within this content and promotes student responses '*which allow space for creativity and the reflections for critical engagement,*' as students critically consider themselves and '*reflect on a skill I want to develop to become a better leader and a better person.*' Staff suggested that the pedagogies support a '*space of breathing for students*', which was beneficial because it models reflective practices that avoid reactive decision making without consideration or reflection. These statements support the notion that students develop and share critical thought and practice as a result of the pedagogies, a notion that enhances the depth in which they consider their personal experience of learning and provides tools that help inform decision making by students in that moment and importantly in future contexts.

4.5. Enabling Future Social Action and Sustainability Solutions

One outcome to consider was whether the reflective pedagogies result in practical outcomes towards sustainability. Results from the student surveys do not support the direct correlation between reflective pedagogies and sustainability outcomes as they did not ask any outcome or action-related questions. The pedagogies are designed to develop 'leadership' qualities described in the LiC skills framework that promote learning to allow for future social action, 'it will allow me to come back to those learnings and reconnect with them in the future.' Results of the study suggest that rather than the pedagogies inspiring solutions to sustainability challenges themselves, they enable students to achieve in other more practical elements and courses of the MSLS program and after, as graduates by providing distinct learning and characteristics. Although a number of students suggested that the behaviors and processes learnt through the pedagogies, specifically the pod, will be utilized in future work, 'I think I would carry this experience with me into the workplace' findings suggest the tangible outcome of sustainability action is intended to occur later using the skills developed in the pedagogies.

4.6. Imperfect and Sometimes Unsuited Pedagogies

Despite the suggestion that a number of positive outcomes emerge from the pedagogies articulated by both the student data and the teacher reflection, a number of critiques of the pedagogies emerged. The results show that the pedagogies remain fallible in a number of ways. The main evidence of this is highlighted in a number of critical statements from students who suggested that elements of the pedagogies did not work for them, '*this was not my favorite. Having the necessary information to complete the assignment in different places was maddening.*' Meanwhile, others suggested, '*I felt very blocked, and I had the feeling I had to deliver something specific or I needed certain insights and critical questions*' or '*trying to quantify personal development is not working for me.*' These statements show that despite the intention of the pedagogies as a whole, there is definitive push back and hesitation from a number of students who displayed discomfort with either the process or the content of the Portfolio and Pod pedagogies, an outcome that undermines their effectiveness in helping the students learn and develop as a result of their experience with the pedagogy.

These results suggest that reflective pedagogies can play an important role as pedagogies in education for sustainability leadership, but also that they require a suite of complementary pedagogies

and that certain considerations need to be taken within their design. These will be elaborated upon in the discussion below.

5. Discussion

5.1. Reflexive Practices a Necessary Skillset for Future Sustainability Work

In a field that considers lifelong and self-motivated learning an essential trait of leadership due to the complex nature of sustainability solutions and the absence of 'absolute' answers or stable environments [1,4,47] being reflective and able to learn independently remains a paramount and powerful skill in students as future sustainability leaders. The construction of reflective practices may provide the student with a process to consider and learn from during challenging content, topics, and interactions. This is a worthwhile, and perhaps crucial, element of leadership education as they develop higher cognitive processes and focus on individual actions directed towards problem solving and outcomes [48] while providing structure and grounding as students pass through the 'disorientating dilemma' phase of transformation. Student answers also, to a degree, evidenced an understanding of the importance of reflection, self-directed, and life-long learning as they reported the intention to utilize the practices in the future. '*I will always make a skills rating from now on, this is such a good tool*' and '*I think I would carry this experience (Pod) into the workplace.*'

Yet, for some students, the difficulties in comprehending how to structure, measure, and assess either content or personal development for skill development leaves them struggling for direction and discontent with the pedagogies and with reflective processes. One suggested outcome for educators is to reinforce the notion that reflective processes also encourage depth of learning regarding content and are not only utilized for the 'self-development' of students from a personal perspective. The Portfolio is an attempt to do this, as it is a pedagogy that explicitly asks students to reflect on their response and opinion to content about sustainability. From this perspective, the Portfolio allows educators the possibility to combine important instrumental and content-based learning with reflective processes that shifts learning from recollection and moves it into the realm of a critical and applied understanding of content and the student undergoes learning in the model of Kolb's Learning Cycle [24] and develops deeper understanding of needed qualities.

Furthermore, student articulation that the pedagogies, specifically the Portfolio, helped them '*better remember the content and digest it*' and '*forced me to review what I learnt*' evidenced benefits to student learning, albeit in a more instrumental fashion. While this could be seen as a limitation of the pedagogies in terms of transformative personal outcomes, some outcomes desired by sustainability education remain in this realm and are required as a base from which robust and potentially transformative student discussions can emerge. For some students at the beginning of their 'sustainability leadership' journey, the need to develop understanding of basic content before moving into personal transformation is understandable. This potentially requires educators to provide even more flexibility in reflective pedagogies depending on the level of student knowledge, development, and intended learning outcomes.

By introducing reflective pedagogies as tangible tools and structures for students, educators promote the ongoing development of students once they have finished formal education. However, not all students grasp the importance of reflection, especially when it comes to more than content reflection. This is captured in the quote: '*I did not see the purpose for the essay, so I didn't invest too much time*'. While the staff team at MSLS spends significant time explaining both the what and the why of the reflective pedagogy, not all students understand the purpose or approach and some disagree with it, either at an abstract level or when it comes to the personal practice of it. This is not a criticism of the students as much as it is an acknowledgement that it is challenging to help all students understand and engage in meaningful reflective and self-directed practice and create structures that enable them to do so. A container can be set to invite reflection but there is no guarantee that students

will embrace or use it as a stepping stone to co-create their own learning structures that will continue to benefit them in their future sustainability work.

5.2. Pedagogy Design That Promotes Collaboration and Comfort with 'Others'

The Pod pedagogy provides a mechanism for collaborative reflection; one that highlights and promotes the diversity of the MSLS student cohort. While collaborative reflection is, of course, also a part of other classroom activities, Pod is unique in that it intentionally focuses on deep personal reflection, not course content reflection. Both the Portfolio and Pod create unique spaces for new forms of conversation to emerge, one from a written relationship between student and teacher and the other within peer group dialogue. These approaches aim to create a form of Generative dialogue, "a more comprehensive, purposeful and integrated practice of conversation" that helps to create a "collective new learning space" as well as "new knowledge" and supports processes of transformational learning [49,50].

With the intent of learning from the experience of others, the Pod provides a space of participation and listening that allows students to engage alternative views openly, beginning the work of understanding the complexities of different perspectives [14]. This means that students deepen their level of inquiry through questioning, connections, and honoring multiple perspectives [18]. The diverse nature of the program's cohort means numerous cultural, religious, and socio-economic backgrounds engage and a multitude of perspectives are seen and heard during the process of Pod. This is both a powerful experience and a tangible learning outcome as collaboration and participatory processes remain integral to sustainability solutions and build on true understanding and honoring of personal differences. The Pod pedagogy of collective reflection embodies an example of hooks call for classroom communities that have the capacity to generate excitement by deeply affecting our interest in one another, by hearing one another's voices and in recognizing one another's presence [51], thus providing significant outcomes within a field that calls for collaborative, inclusive, and participatory solutions.

Difficulties can, however, emerge as this diversity amplifies the diversity of needs and students' levels of comfort with the open nature of conversation and practice of collective reflection. For example, where one student describes Pod as '*a place to express one's own feelings and thoughts and to see how others feel and think*' another can experience them as a '*festival of whinging*' or a place where '*there were too many complaints and disturbing issues brought up in my group.*' While it is also the staff´s experience that some students do (initially) use the time to focus on staff or program performance and only slowly shift to focusing the reflection on themselves and their own learning, these statements by students also show the challenge of accepting expressions of reflections in different forms. Another limitation of the Pod pedagogy in this regard is that a small number of students choose not to attend at all, meaning the collective nature of the group may remain incomplete as students have different program experiences depending on whether they attend the Pod or not. Furthermore, these more critical statements highlight that for some students, the 'comfort with other' or willingness to engage in open groups processes remains challenging to the point where they avoid the pedagogy. This again shows issues with the challenge of pedagogies that aim to promote collective reflection in groups as individuals needs and desires may be in conflict with each other. However, our experience with Pod highlights a pedagogical attempt to support student comfort with the messiness of collective processes and provides a strong pedagogical tool to explore and develop those traits within students. It also shows the difficulties with approaching and designing transformational education environments that are able to hold and host *all* students in their personal learning journeys. Despite this, the study shows that pedagogies like Pod promote qualities desired in sustainability leaders such as awareness as well as inviting students to sit quietly together in with uncomfortable facts and emotions counters academic abstraction and generates the insight, resolve, hope, and empowerment [14] that are desired outcomes of ESD programs and seen as beneficial by the majority of students. The positive student response to

Pod suggests that deliberate design of pedagogy utilizing collective reflection can play a significant role in developing skills and values promoted by ESD.

5.3. Reflection for Sustainability Needs a Direction and Outcome—Utilizing the LiC Skills Map

A question for reflective pedagogies within ESD is how to ensure they promote sustainability learning and do not result in 'endless reflection without the will to act' [52]. LiC attempts to do this within the Portfolio and Pod pedagogies by the incorporating its skill framework as a mechanism and container to ensure reflection in a 'direction' and for the purpose of sustainability. By utilizing an explicit and transparent framework that provides distinct definitions of sustainability leadership skills and their desired outcomes, students can frame their reflection towards sustainability learning. Thus, ensuring reflective 'growth' in areas that promote qualities of sustainability leadership. By suggesting that students acquire competences ranging from both 'systemic thinking' and 'project management' to 'increased personal resilience' and 'developing courage to challenge the status quo', the LiC framework caters for a high degree of flexibility for the learner, allowing them to choose whichever skill suits their personal learning journey but always within the contextualization of sustainability leadership. This point is supported by the work of Gardiner and Rieckmann whose study on reflective practices and sustainability competence acquisition suggested 'that a certain body of knowledge is required to serve as a framework guide' in order for students to develop sustainability relevant qualities [53].

The use of guided reflection with determined skills outcome is supported by other studies that suggest sustainability leadership development requires the combination of reflective pedagogies combined with practical wisdom in the form of 'development of leadership skills through deliberate practice' [20]. This framing of deliberate practice was highly appreciated by some students as it '*Gave me a clear focus and guideline and was very helpful to me in my process*' and provided students a clear target to aim for with their Portfolio outcomes. Others argued that the definitive structure was overwhelming and meant that the reflection was not thoroughly engaged with, '*The way it was structured does not work for me at all. To detailed orientated for me . . . hence I only filled in what is required and then ignore it*'. Another quote, '*trying to quantify personal development is not working for me,*' also articulates the challenge of putting structure on an unquantifiable reflective process. Other students lamented the 'personal' nature of the reflection, preferring instead for '*the reflection essay to be more related to the readings.*' This attitude highlights some students' preference for content-based, rather than personal reflection and leadership development and suggests that educators may need to justify the notion of personal development to students who are more used to or comfortable with a content-based memorization and recall style of learning. Perhaps within this case study, these results indicate a lack of adequate framing or justification on part of the staff or understanding on behalf of the student regarding the purpose of the LiC Framework in combining both content based and personal aspects of learning and how their relationship together relates to sustainability 'leadership' development. More research remains to be done to find a 'the lightest possible' structure to allow for individual agency within reflective processes that work towards clearly defined ESD outcomes. This study offers the LiC Framework as an initial suggestion.

5.4. A Challenge for Teachers—The Mental and Emotional Load of Reflective Pedagogies

One major discussion point was the heavy load reported by staff regarding the teaching and facilitating requirements of reflective pedagogies. While often admired and supported by the students for their work, staff reported that holding reflective learning environments can be a difficult, tiring, and emotionally challenging role. Providing the 'open, safe and supportive' conditions in which students feel comfortable and able to reflect openly, either individually through the portfolios or collectively through Pod, is a profoundly important element of pedagogy [8,54]. However, holding this space highlights the demanding nature of teaching as students display stress, anxiety, trauma, and discontent as part of the reflective learning. The responsibility of hosting the Pod pedagogy was reported to uncover trepidation in staff as challenging topics emerged and students often shared significant

personal challenges or conflicts. The ability to navigate the fine line between what can and should be shared within the group was seen as a difficult one to facilitate. One staff member framed the challenge as difficult due to '*not being a trained counsellor*.' This is supported by Griffith and Frieden who suggest personal growth experience within education can lead to the uncovering of buried personal trauma, meaning educators must be sensitive to the learner's experience of loss and feelings of disorientation and anxiety [55].

Finding constructive dialogic responses to these reflections and situation can itself be challenging as facilitators move from expectations of them as 'assessors' to 'guides and role models' while also having an emotional life of their own. Time taken to analyze and appropriately respond is also seen as a weakness of reflective practices in terms of teaching process [53]; furthermore, staff are often required to negotiate with students as they underestimate the time and effort needed to complete 'good' reflective practices. There are strong arguments that advocate for the use of reflective pedagogies within sustainability education [14,20,53] and staff also reported that they benefitted from these exchanges. Despite this, the toll on educators to facilitate these pedagogies can be immense and poses a significant challenge to the pedagogy's delivery as the issue of teacher wellbeing emerges. Furthermore, these pedagogies and their teaching requisites remains misunderstood by bureaucratic structures of higher education, which generalize and homogenize teaching requirements and considerations when designing courses and allocating teaching hours.

5.5. Pedagogical Limitations and Ongoing Challenges

Despite the results of this study suggesting a number of positive outcomes in terms of sustainability and leadership development as a result of distinctive reflective pedagogies for ESD, a critical analysis of the pedagogies show that challenges remain. The finding that the pedagogies did not work for numerous students remains of essential importance because it means that they are not optimally supported to develop the skills required of sustainability leaders. Further experimentation with other reflective pedagogies is required to find ones that might work for more students who are currently struggling while also, for academic fairness reasons, being comparable in effort and outcome to others.

A critical analysis of the Pod and Portfolio suggests the potential for these pedagogies to utilize power over the student experience of learning and reflection by imparting structures and requirements on them. While this is the case in most pedagogies and assessed learning outcomes, it remains tricky when wanting to empower students to become sustainability leaders. Furthermore, the dilemma of the relationship and power of staff over students in guiding and directing their reflection (whatever their intention) also needs to be considered. As feedback is offered and students evolve to reflect in line with that feedback, it may stifle the honest, personal responses that emancipatory education calls for. This question of power and influence is not specific to this study or these pedagogies but remains important in asking whether it is possible to create structed learning experiences in consideration of personal learning journeys that empower towards sustainability leadership. The answer to this critique perhaps lies in the adoption of transparent intentions and pedagogical explanations on behalf of the staff at the introduction of the pedagogies, seeking to acknowledge this as a challenge within these pedagogies and in wider sustainability education. Thus, educators can attempt to acknowledge the 'dilemmas' of 'power' and 'content' as suggested by Adler [56] and place openly the question of power, as an inherent part of classrooms, between the student and teachers. For a field attempting to create a personalized and emancipatory experience that requires reflection, questions on how best to do this remain, and the findings of this study suggest that despite many positive outcomes an ongoing critical examination of the Pod and Portfolio is needed.

5.6. Recommendations for Educators

The investigation has uncovered a number of considerations for reflective pedagogies to be utilized as part of education that promotes sustainability leadership. As educators and pedagogues engaged within this case study, we offer a number of recommendations as a result of our study.

1.) Reflective pedagogies can be utilized to promote self-awareness and self-development of students in a way that promotes sustainability leadership development, but they should be situated within a suite of pedagogies promoting sustainability learning in numerous ways.

2.) Leadership development for sustainability should be defined by educators prior to development of reflective pedagogies in order to 'guide' reflective direction towards specific sustainability outcomes.

3.) Limitations to these pedagogies occur in their ability to satisfy the different needs and comfort levels of diverse student groups. Thus, structures should be made that allow both space for diverse personal learning journeys and that provide clear outcomes and place accountabilities on the students.

4.) Educators should speak directly to the notion of power in the classroom and specifically the tension that emerges with reflective pedagogies between the deep learning, empowerment, and the academic requirement aspects.

5.) Reflective pedagogies can place difficult mental and emotional loads on staff facilitating them and structures, support, and training should be considered for staff in the development and implementation of reflective pedagogies for sustainability leadership education.

5.7. Limitations of the Study

The study comes with some limitations, namely that the student datasets, specifically the qualitative datasets, were small and were re-used and re-analyzed with a different frame, namely that of reflective learning. This, however, is a common practice in ESD as the infant nature and challenge of assessing and measuring sustainability outcomes remains commonplace across the field and there is a tendency for the development of assessment tools as an apparent afterthought [57]. Future studies on this topic should adopt a more direct inquiry with a distinct reflective and assessing frame in order to cultivate sharper results. Course evaluations usually also come with the limitation that not everyone answers them, so one cannot discern a complete picture of the student experience and some student responses offer only surface level and vague descriptions of their experiences despite the opportunity for open ended and detailed responses. This results in difficulties with developing richer layers of analysis on behalf of the researchers. Future studies should consider follow up interviews with students to create more thorough descriptions of their experience with reflective pedagogies their benefits and their challenges with regards to sustainability education.

6. Conclusions

This study aims to provide an examination of two reflective pedagogies within a sustainability leadership program in a higher education institution and highlights the experience from both a student and staff perspective. It suggests that both students and staff found the pedagogies beneficial for learning and supported the pedagogical design, but that some challenges and critique also emerged. Benefits included the distinct role of reflective structures to guide student reflection towards individual skill development and the use of collective reflection to encourage generative dialogue and relationships between students and staff that aided collaboration, self-awareness, understanding of multiple perspectives and creating self-directed graduates. Staff and students also, however, suggested a number of challenges posed by teaching and engaging with reflective pedagogies, these include the 'constrictive' nature of guided reflection and emotional and mental challenges faced by staff in hosting and holding students through often challenging personal reflective processes. For the potential of reflective pedagogies to be truly realized for ESD in higher education, institutions will need to develop an understanding of the requirements that reflective, whole-person pedagogies have on students and teachers and create planning processes to accommodate this. This study aims to contribute to the progression of that discussion by highlighting the outcomes and designs of two unique pedagogies. Future research could thus investigate how a deeper understand of reflective pedagogies could be achieved, and also further prototype what kinds of structures reflective pedagogies need to work for

as many students as possible and strike a balance between guidance and constriction and staff come to terms with the nature of reflective teaching.

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