Evaluating non-conventional SDG education programs in higher education under UNITAR's Quality Assurance Framework

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Abstract

This paper examines seven non-conventional education programs that aim at promoting action toward Sustainable Development Goals (SDGs) and are led by or co-organized by higher education institutions. The research contains two parts: (1) the seven SDG education programs were evaluated based on the Quality Assurance Framework (QAF) developed by the United Nations Institute for Training and Research (UNITAR) and used to assess the quality of its learning-related events; (2) the author conducted interviews with the organizers of each of the seven programs to understand their perceptions of how the non-conventional SDG education programs should be evaluated, the outcomes and impacts of the programs, the challenges they are facing, and the role of innovation in education for sustainable development (ESD) in higher education settings. The results show that the programs all generally met the standards set by QAF, however, all the interviewees mentioned that it may not be effective enough to evaluate the non-conventional SDG education programs. They emphasized that instead of evaluating what the programs do, it is more important to examine the impacts of the programs and listen to the learners' voices, and it is the long-term impacts that are more valuable to examine and exciting to witness. Besides, it was widely agreed among the interviewees that innovation plays a critical role in ESD. It is also critical to bring interdisciplinary and diverse groups together to address the complicated issues in sustainable development. ESD in higher education has occurred at the fringe of conventional higher education, and one reason is that interdisciplinarity and innovation are highly needed for SDG education programs. In higher education settings, students normally possess a knowledge foundation and solid learning skills, thus the major mission of the programs should be to provide essential guidance and technical assistance, build an enabling environment, and empower and motivate the students to innovate for the SDGs.

1. Introduction

Sustainable development has become one of the most concerned topics worldwide, and education for sustainable development (ESD) has received increasing attention. Education has been expected to promote and accelerate the progress of the Sustainable Development Goals (SDGs) in the 2030 Agenda. SDG Target 4.7 emphasized the importance of attaining essential knowledge, skills, and attitudes needed to promote sustainable development.[1] ESD is indispensable in guiding global education to shift its focus towards a greater consideration of its role in sustainability, both for people and the planet.[2] ESD serves as a bridge connecting SDG 4 with all other SDGs and efforts for a more sustainable and inclusive world.[3] In recent years, education programs for promoting sustainable development have been increasing and expanding. Many of them target university students, are led by universities in collaboration with international organizations, and are not organized in a traditional teaching format, namely students sitting in the classroom and listening to teachers. In this paper, these programs are

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[1] "SDG 4", United Nations, https://sdgs.un.org/goals/goal4
[2] Ibid.
[3] Ibid.

generally defined as non-conventional SDG education programs. Higher education institutions play a critical role in ESD, as they equip students and other individuals on the brink of higher education with the necessary knowledge, skills, and mindsets to tackle the SDGs.[4] Due to the capabilities of universities in education, research, and innovation, along with their significant social impacts, universities hold a distinct position in addressing the sustainability challenges and achieving the SDGs.[5] Successfully implementing the education for the SDGs requires universities to incorporate new approaches beyond their conventional operations.[6] While the non-conventional SDG education programs are booming, here comes the question – how do we evaluate the quality of these programs? There is not yet an answer to that, and the United Nations Institute for Training and Research (UNITAR) is interested in exploring this question. The author had the opportunity to receive the traineeship at UNITAR and get involved in its work on promoting SDG education. Inspired by the work at UNITAR, the author desired to examine the non-conventional SDG education programs and take a further step to understand these programs from their organizers' perspectives.

2. Research Background

2.1 Evaluation of Education for Sustainable Development (ESD)

UNESCO outlined three learning dimensions of ESD, including the cognitive, social emotional, and behavioral dimensions.[7] The cognitive dimension encompasses knowledge and critical thinking skills essential for comprehending sustainable development.[8] The social and emotional dimension involves fostering shared attitudes and values that facilitate collaboration and respectful and peaceful interactions with others.[9] The behavioral dimension centers on enabling learners to act responsibly and engage in local or global community projects that promote sustainable development.[10] ESD has the potential to cultivate key competencies for sustainability and foster distinct learning outcomes essential for advancing specific SDG targets.[11] According to UNESCO, the key competencies for sustainability include systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, and integrated problem-solving competency.[12]

Regarding conventional classroom teaching programs, the learning outcomes are usually assessed by standardized tests and scores. Researchers have argued that in this approach, it is hard to evaluate the true impact of education, and it is essential to adopt qualitative methods for a more comprehensive and nuanced understanding of educational outcomes.[13] Assessing the outcomes of ESD programs is challenging. UNESCO has suggested that ESD programs and initiatives should be assessed at multiple levels based on their contexts.[14] In practice, there are a few approaches that have been adopted to assess ESD programs, including "large-scale assessments for learning outcomes", "assessment of learning outcomes at the individual level", "national assessments more aligned with national educational

[4] Sustainable Development Solutions Network, *Accelerating education for the SDGs in universities* (New York, 2020), 3

[5] Sustainable Development Solutions Network, *Accelerating education for the SDGs in universities,* 5

[6] Sustainable Development Solutions Network, *Accelerating education for the SDGs in universities,* 6

[7] UNESCO, *Educational content up close: Examining the learning dimensions of Education for Sustainable Development and Global Citizenship Education* (Paris, 2019), 7

[8] Ibid.

[9] Ibid.

[10] UNESCO, *Educational content up close: Examining the learning dimensions of Education for Sustainable Development and Global Citizenship Education* (Paris, 2019), 11

[11] UNESCO, *Education for Sustainable Development Goals - Learning Objectives* (Paris, 2017), 10

[12] Ibid.

[13] S. Sato, T. Hashimoto and Y. Shirota, "Evaluation for ESD (Education for Sustainable Development) to achieve SDGs at University" *11th International Conference on Awareness Science and Technology (iCAST),* (2020), 1-6, doi: 10.1109/iCAST51195.2020.9319406.

[14] UNESCO, *Education for Sustainable Development Goals - Learning Objectives* (Paris, 2017), 56

priorities", "contextualized school and institutional assessments to improve implementation and delivery", "the development of formative assessment practices to empower teachers to gauge specific pedagogical practices in classrooms", and "personal self-assessment of individual progress".[15] At the individual level, the assessments include recording learners' progress and achievement, identifying strengths and areas for growth, providing feedback about the learning process, etc.[16] As a guiding principle, UNESCO suggested identifying limitations and areas for improvement, evaluating effectiveness, reporting outcomes, and promoting transparency and accountability.[17]

2.2 UNITAR's Quality Assurance Framework

As the UN institute that specializes in providing training programs and learning solutions, quality is fundamental to UNITAR's identity. To meet the growing need to assess the learning outcomes and strengthen the quality of its training products and services, UNITAR established the Quality Assurance Framework (QAF) in 2012.[18] There are ten quality assurance standards, including Standard 1: Learning Needs, Standard 2: Target Audience, Standard 3: Event Nomenclature and Title, Standard 4: Learning Objectives, Standard 5: Content and Structure, Standard 6: Methodology, Standard 7: Learning/Instructional Material, Standard 8: Training Expertise/Qualifications, Standard 9: Event Announcement Information, and Standard 10: Evaluation and Follow-up.[19] There are specific indicators to measure each of the standards, and the assessor needs to mark "Yes", "No", "N/A", or "Partially Yes" for each of the indicators. According to UNITAR, the QAF can apply to all learning events, such as courses, seminars, and workshops organized by UNITAR or co-organized by UNITAR and its partners. Although it was not specifically designed for evaluating SDG education programs, as a general framework, it has covered the core elements to assess an education program. Besides, the Evaluation Policy also provides a good reference. UNITAR adopts the Organization for Economic Cooperation and Development (OECD)'s Development Assistance Committee criteria for evaluation which includes the following components: Relevance, Coherence, Effectiveness, Efficiency, Impact, and Sustainability.[20]

3. Data and methods

3.1 Research purpose and methods

The research aims to examine seven non-conventional SDG education programs led by universities or mainly designed for university students. The research contains two parts. Firstly, to gain a basic understanding of the quality of the SDG education programs, each of them was evaluated based on the above-mentioned QAF developed by UNITAR. Secondly, the author conducted interviews with the organizers of each of the programs trying to understand their perceptions of how these programs should be evaluated, the outcomes and impacts of the programs, the challenges they are facing, and the role of innovation in ESD. The interviews were conducted online and recorded with the interviewees' permission. Through the mixed methods of desk-based assessments and interviews, the author was able to examine the non-conventional SDG education programs from both the perspective of an outsider and the perspective of the program organizers.

3.2 Data set

The seven non-conventional SDG education programs in the research scope are listed in Table 1. They operate across countries and are influential in their areas in terms of promoting the SDGs. According to the Sustainable Development Solutions Network (SDSN), the most common approaches that universities have been trying to implement ESDGs include "SDG-

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[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] UNITAR, *Quality Assurance Framework,* (Geneva, 2017), 4

[19] UNITAR, *Quality Assurance Framework,* (Geneva, 2017), 11-20

[20] UNIATR, *Evaluation Policy*, (Geneva, 2021), 5-6

focused project-based units", "SDG-focused co-curricular activities", "Integration into the existing discipline curriculum", "SDG-focused leadership programs", etc. [21] The seven programs in the data set fall into these two types; "SDG-focused project-based units" and "Integration into the existing discipline curriculum" (Table 2.).

Table 1. List of programs studied in the research.

Name of the program	Organizer	Interviewee
SDG School	Maker's Asylum	Richa
Master in Design for Distributed Innovation	Fab City Foundation	Tomas
Master in Design for Emergent Futures	Institute for Advanced Architecture of Catalonia (IAAC) & ELISAVA Barcelona School of Design and Engineering	Tomas
SDG Open Hack Singapore	Global Green Economic Foundation, Global Green Connect	Christina
Open Seventeen Challenge	Crowd4SDG[22]	Amudha
SDG Summer School	University of Geneva	Gautham
SDG Open Hack Tsinghua	Tsinghua University	Pearl

Table 2. The approaches and locations of the programs.

Name of the program	Approach	Location
SDG School	SDG-focused project-based units	Hybrid
Master in Design for Distributed Innovation	Integration into the existing discipline curriculum	Hybrid
Master in Design for Emergent Futures	Integration into the existing discipline curriculum	Hybrid
SDG Open Hack Singapore	SDG-focused project-based units	Singapore
Open Seventeen Challenge	SDG-focused project-based units	Hybrid
SDG Summer School	SDG-focused project-based units	Geneva
SDG Open Hack Tsinghua	SDG-focused project-based units	Beijing

4. Analysis

4.1 Evaluation of the programs under UNITAR's Quality Assurance Framework

Drawing upon the information and materials available on the programs' official websites and accounts as well as the interviews conducted with the organizers of each of the programs, the author assessed each of the programs under all the indicators within the set of standards of UNITAR's Quality Assurance Framework. The results show that the programs all generally met the standards set by the framework. There are also areas for improvement based on the assessments conducted by the author. The program titles of some of the programs (e.g., SDG

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[21] Sustainable Development Solutions Network, *Accelerating education for the SDGs in universities* (New York, 2020), 19

[22] Note: Crowd4SDG is a Horizon 2020 European project consortium led by the University of Geneva

School of Maker's Asylum, Open Seventeen Challenge) could be clearer and more reflective of the knowledge and skills to be attained or the overall goal to be achieved. Besides, information on the content and structure should be communicated clearly, which is an area for improvement for the SDG Summer School of the University of Geneva. For the SDG Open Hack Singapore, the methods and tools can be more systematically defined. A common weak area of the programs is regarding the evaluation of the programs and the follow-ups after the programs (Standard 10 in the QAF). While all the programs have been trying to evaluate the learning outcomes of their students, either formally or informally, the hosting organizations do not have a systematic approach to evaluating their programs.

Many of the interviewees mentioned that the QAF has covered many essential areas to assess learning programs and events. They believed that most of the questions were relevant to their programs and that their deliverables were aligned with the framework. However, they believed that it may not be effective enough to specifically evaluate the non-conventional SDG education programs as some of the important components are missing, which will be further discussed in the following sections. Besides, there seems to be a consensus among the interviewees that a fixed set of standards would be hard to work to assess these programs and could be easily biased. Amudha, manager of Open Seventeen Challenge argued: "Maybe we need the standards to be a little more dynamic." In her opinion, the standard frameworks, like UNITAR's Quality Assurance Framework are one of the reasons why most topics get filtered out when they select the topics to be included in their coaching program.

The deep and thoughtful interviews with the organizers of each of the programs allowed the author to further understand the programs and explore the evaluation of SDG education programs for adult learners, especially university students.

4.2 The critical role of innovation

All the interviewees emphasized the critical role of innovation in SDG education programs for university students and other adult learners. Christina, organizer of the SDG Open Hack Singapore described the position of innovation in this way:

"……when you give them a purpose to solve problems, that will stimulate innovation, and that innovation will translate into a solution, right?"

In Christina's opinion, the purpose of solving problems provokes innovation, and innovation leads to solutions. Similarly, Gautham, event manager of the SDG Summer School of the University of Geneva also claimed that innovation could drive solutions in tackling the problems facing sustainable development:

"I think innovation as an aspect of learning for the SDGs is about creating a possible new solution to a challenge that has existed for a while only in the way that this solution is much more viable and much more friendly to the environment or the people to let the solution caters for."

Gautham believed that innovation could lead to solutions that are more sustainable than previous ones to change the current conditions. Pearl, director of SDG Open Hack Tsinghua also emphasized that "the challenges of SDG are all future-oriented", therefore, innovation is much about "transformation" and is crucial in promoting sustainable development:

"You must understand the problems, but at the same time, you must think innovatively, and figure out how to solve these unsustainable problems with new products or services, which in turn you can optimize and replace those unsustainable problems and products, right? It's the transformation, right? Then we can continue to abandon the old unsustainable ones and then transform to a sustainable way of doing things."

Pearl argued that innovation is crucial to achieving the SDGs because people must find new ways that are more sustainable to transform unsustainable practices. For university students, innovation beyond knowledge learning is especially important to promote the SDGs, as they normally are already equipped with a solid knowledge foundation and a set of learning

skills. An enabling environment with accessible tools and technical assistance is favorable for fostering innovation. Ultimately, students should be empowered to take the initiative to identify and solve the problems. As Amudha said:

"So, education is all about different techniques which empower people to figure out their way. So, it's not just you give them, like, books, it's not spoon feeding, but you enable them to kind of learn for themselves. And that's why innovation or any of these changed pedagogies or alternative pedagogies are means of enabling or empowering participants or students to learn by doing or figuring out. They will figure it out. They'll always figure it out."

Amudha's words also indicated the role of self-learning in SDG education programs. Innovation is a process that naturally involves self-learning, as the learners will have to figure out new ways of doing things and thus attain more knowledge and skills as they move forward in the process of innovation. As introduced by Buckley and Kukhareva, innovation lies in three tiers including physical space, the subject, and the technology. "Subject" and "technology" are usually already well-provided in formal conventional education. While these non-conventional SDG education programs also provide academic and technical support, the "physical space" for innovation seems to be a big feature of these programs.

Tomas, director of the Master in Design for Distributed Innovation also mentioned that it is important to provide students with a safe space where they can be motivated to innovate. He critically described the essentiality of the innovation-oriented learning approach:

"So, what we bring together, especially in the master's in design for distributed innovation is really making fab labs as learning spaces where people engage with this approach to learning that is flexible, open, and evolutionary. And I think that if we don't do that, we are just training zombies that are repeating information."

Tomas emphasized that the learning approach in the learning space should be "flexible, open, and evolutionary" and thus students could be empowered to think outside of the box and learn beyond the information taught to them. Therefore, based on the interviews, the critical role of innovation in learning for the SDGs and tackling sustainability issues has become evident, especially for ESD in the context of higher education, or for adult learners. However, the degree and quality of innovation are not measured in the Quality Assurance Framework, and it is not easy to be measured solely by several indicators.

4.3 Diversity, inclusion, and Interdisciplinarity

Universities have strong capacities in education and research across disciplines with people from different backgrounds, which provides a favorable environment for ESD and for promoting innovation for the SDGs and tackling global challenges.

Richa, director of Maker's Asylum, emphasized the importance of the ability to work with people from different backgrounds, including different cultures, disciplines, and so on:

"And then there is a component of it, which is also soft skills, which is around intercultural, mixing, and interdisciplinary problem-solving collective thought process, people are actually down in teams where they don't know each other, they come from different backgrounds. How do you kind of work in a context of problem and solution where you bring in different perspectives? So those are some of the soft skills that people also pick up, like how do you work in a global context where you're in with people of different culture and religion and whatever else, right?"

These soft skills Richa mentioned conform to the 21st-century skills and the "collaboration competency" identified by UNESCO as one of the key competencies for sustainability. As fundamentally, the sustainability challenges are global issues and across subjects, it would be important to work collectively and collaboratively with people from various backgrounds. Richa believed that in their program, learning to tackle sustainability issues and coming up with solutions is a "collective thought process".

On the other hand, though the SDGs were formed on a global agenda, different countries and people from different backgrounds may be at different stages and have various needs in terms of tackling sustainability issues. Besides interdisciplinarity and diversity, inclusion also needs to be emphasized in SDG education programs to involve more voices. Amudha expressed her concerns about missing out on some voices in their project selection process:

"Because you give them themes, but you realize a lot of them, especially coming from the global south, sorry to use the word, most of them are talking about advocacy. And then we realize there are countries that are not even in that phase. They want to spread the word about, let's say, environmental justice to people. First of all, you need to bring that awareness. So, creating awareness itself is the biggest challenge in many countries."

Amudha pointed out that people should not ignore the existing biases and disparities and should not assume that others are on the same page as us. She felt sad about missing out on some voices calling for advocacy and awareness-raising because they don't match the "requirements" or "expectations" of the program, as these voices are equally important and valid. Inequality is an enormous obstacle to achieving the SDGs. Therefore, the SDG education programs need to provide an inclusive atmosphere and encourage students to be mindful of and concerned about the different difficulties and appeals of diverse groups of people in disparate areas, which will also contribute to promoting the SDGs.

According to the interviews, diversity, inclusion, and interdisciplinarity are necessary components to SDG education programs and achieving the SDGs. Sustainable development covers topics and issues across disciplines, industries, and countries. Diversity, inclusion, and interdisciplinarity can foster collective intelligence to tackle complex issues on a large scale while not ignoring issues on the local level or that are faced by minor groups. The level of diversity, inclusion, and interdisciplinarity is not assessed in the Quality Assurance Framework but is an important element for the non-conventional SDG education programs.

4.4 Evaluating the non-conventional SDG education programs

4.4.1 Evaluating the contributions to the SDGs

As the interviewees believed that the QAF may not be effective enough to evaluate the non-conventional SDG education programs, one component that they think is missing is the impacts on the SDGs, especially the long-term and indirect impacts.

As Amudha, manager of the Open Seventeen Challenge said: "One thing is the impact that it has on society, for which it is created, we haven't measured." The contributions to and impacts on the SDGs of these non-conventional SDG education programs are not measured in the Quality Assurance Framework, as it was not designed for SDG education but for general learning events organized or co-organized by UNITAR.

Measuring the impacts of the programs on the SDGs is a complicated topic. In the existing literature, the best that programs do to evaluate their contributions to the SDGs is to evaluate how students' perceptions and knowledge of the SDGs change after the programs through questionnaires. However, in this approach, the contributions that students make to the progress of achieving the SDGs and the impacts of the programs on society are not taken into consideration. Furthermore, many of the interviewees argued that it is the long-term impacts that are more valuable because a lot of the learners that were part of the programs eventually go on to career paths that are around sustainability or continuously contribute to a certain area in the SDGs after finishing the programs. This is more exciting to witness but also more difficult to record and measure. As Richa from Maker's Asylum said: "……they also choose to maybe start up their own social enterprise because this is giving them the motivation to kind of do something like that." Richa mentioned that many of the previous participants of the SDG School went to work in social and developmental fields where they felt that they could contribute back to society. The impacts on the students and their contributions to accelerating the SDGs may not be immediate results, and it is not easy to track and measure these impacts.

Interviewees believed that the impacts on society do not fade as the programs come to an end. As Gautham argued: "……we believe that the Summer School does not end with the Summer School, the Summer School is only the start of something." Christina shared a similar view and feeling. She was excited when she talked about the students who previously participated in the SDG Open Hack Singapore and came back to help organize the event, share their experience, and initiatively build and expand the community of the program alumni and SDG-related practitioners. Christina also mentioned that once the community is established, the members become more motivated to work toward promoting sustainable development and gain more resources and people to work with. The interviewees believed that their programs and the participants would continuously contribute to the sustainable development of society and the planet and make positive changes. These long-term impacts are hard to quantify but could have a true value.

4.4.2 Evaluating the learning outcomes

When being asked "What do you think would be the best way to evaluate the learning outcomes of your program?", listening to what the students say about what they learn is a strong answer that was mentioned a few times. As Tomas said, "I think that's important that, as I was saying before, as part of the evaluation of these programs, you need to talk to the students, and that's the best ongoing evaluation." Tomas suggested that talking to the students can also provide valuable insights for improving the program.

Christina shared a similar opinion. She emphasized that it is not only important to listen to the students' voices but also valuable to do it in a longer term so that the students could have a chance to make reflections on themselves and the program.

"So how to best evaluate their learning outcome? I would say it's best to go back to the learners. You can ask the learners what they've learned right after the program is finished, but if you can ask the learners six months in a row or a year down the road, then I think that will be very valuable data that you are gonna collect and track the impact on those learners. Because there's no point for me sit here and say, oh, I think it's a great success. I mean it's very lame."

In Christina's point of view, students' perceptions of the learning outcomes may evolve as time passes by, and the answer to this question may become truer to their hearts when being asked after a period. She believed as the students continue to pursue their academic degrees or pursue their careers, they will have a deeper understanding of the program's impacts on them and reflections on themselves. Meanwhile, in their study and work, they may already make further contributions to the SDGs or even other fields with the "learning outcomes" achieved at the program. Students' voices are valuable "data" to assess their learning outcomes, especially in the long term.

Besides, interviewees emphasized the progress that learners make. Gautham argued that the normal evaluation frameworks, including UNITAR's QAF, don't usually assess the progress made in the process. He said: "……for these challenges, they were active throughout the one month of the Summer School and were trying to develop solutions for it. So, I think with that aspect, it is also important to evaluate the progress that was made on these challenges and how their solutions were taken up later on." Similarly, Amudha pointed out that: "It's not the evaluation of the outputs, but how much the participants have learned throughout the process." While much attention has been paid to "outcomes" and "outputs", little has been paid to the process. The evaluation of the learning process is clearly missing.

Tomas also expressed his keen interest in examining the "deltas", namely how a learner changes before and after the program:

"I think that what we consider are the deltas. It is not interesting that students start like geniuses and end like the same. It's like how they become a better version of their previous genius version, right?"

He emphasized the importance of tracking the progress that students make and how they transform into a better version of themselves in the learning process. Furthermore, many of the interviewees argued that some "learning outcomes" are not suitable for being evaluated under an academic scope through conventional approaches.

As Tomas added: "Then the other one that I believe is new from our evaluation methods is how much they go beyond the academic space. Our masters are not so academic. It's like a professional master's, so the way to measure that is how many collaborations they created during the program outside the school. So, we really encourage them to go and talk to people and to work on establishing collaborations with local initiatives, even in international initiatives working on the topics that they're interested in developing as part of the program." He argued that it is important for students to go out of school to learn in practice and make real-world changes. Their work and contributions in the real-world context with local or even international initiatives would be the best proof of their "learning outcomes". These learning outcomes could not fit into the regular assessments in conventional education but are valuable results to these non-conventional SDG education programs.

The interviews show that the organizers of the non-conventional SDG education programs believed listening to the students' voices about what they have learned and what impacts the program has on them would be the best way to evaluate the learning outcomes. Besides, they believed it would be valuable to pay attention to the progress the students make during the programs and track the students in the long term in terms of their reflections on what have they learned and gained from the program and the impacts on them.

5. Conclusion

This paper examined seven non-conventional education programs that aim at promoting action toward the SDGs and are led by or co-organized by universities, through evaluations under UNITAR's Quality Assurance Framework and interviews with the organizers of the programs. The results show that though the programs all generally met the standards, the interviewees believed that it may not be effective enough to evaluate the non-conventional SDG education programs. They emphasized the importance of examining the impacts of the programs on the participants and society, especially in the long term. Besides, it was strongly emphasized by the interviewees that innovation plays a critical role in ESD in higher education and in promoting the SDGs. Interdisciplinary, diversity, and inclusion is vital for addressing sustainability issues. To better shape future SDG education programs, firstly, building an enabling learning environment is crucial to fostering learners to become innovative agents for positive change in achieving the SDGs. It is not only related to the learning content but also the management of facilities and decision-making processes in the institutions. Secondly, universities should harness and expand their partnerships and collaborations with various stakeholders to promote research, knowledge sharing, and capacity development and allow the students to have more opportunities and space to learn through innovation in practice.

6. Discussions

This study offers a distinct and unique perspective on non-conventional SDG education programs, which are not widely explored in the academic literature. This paper addresses the gap in understanding and evaluating the programs, which is critical for shaping more effective evaluation approaches and promoting ESD. The research results provide implications for both UNITAR and the SDG education programs.

However, it is important to acknowledge the limitations. Due to the inherent subjectivity of qualitative research, the findings are inevitably influenced by the perspectives, biases, and interpretations of the researcher. Besides, the hosting organizations of the programs studied in the research are all based in Europe and Asia, and the limited geographical representation also underlines the need for a more comprehensive perspective of understanding these programs on a global scale.

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