Developing Global Citizenship through Interdisciplinary Conversations: Virtual Exchange on the UN SDGs

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Abstract:
Introduction: This study evaluated a Virtual Exchange (VE) project based on United Nations Sustainable Development Goals (UN SDGs) to connect students and faculty across five universities from the USA, Brazil, Honduras, and Algeria.
Methods: A four-week program combined synchronous and asynchronous activities, allowing for flexible, self-selected participation. This paper presents a description of this VE project as well as its outcomes.
Results: The project successfully fostered global awareness and collaborative dialogue, filling a gap in participants' regular studies. Participants valued the global connections through the program.
Discussion: The VE project demonstrated the potential of self-determined participation in promoting global connections and collaborative learning. The SDGs created a productive space for authentic dialogue framed within a sense of community.
Limitations: This project is limited to the scope of exploring selected relevant SDGs and does not include data from the participants´ interactions for analysis and discussion.

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Conclusions: The VE proved valuable for international educational exchange, particularly benefiting students with limited access to traditional international programs. Future research should include quantitative analysis and explore adding practical action components linked to SDG implementation to enhance impact.

Key words: education, global citizenship, Sustainable Development Goal (SDG), virtual exchange.

Introduction

Currently, the world exists in a time of globalization like no other recognized point in history - in interconnectedness and information sharing/access (Godara, 2017). In this globalization and international scenario, there has been increased importance placed on the development of globally competent skills in our students (Lenkaitis, 2022; Landis et al., 2004). With information at our fingertips via social media and other outlets broadcasting updates, viewpoints, and news at a rapid pace, it is evident that our world is connected in ways never experienced. This continues to change and evolve as new technologies emerge, offering insights into global issues and contexts from around the world. Institutes of higher education can take advantage of this ever-changing landscape to utilize this as a catalyst to facilitate responsible learning and the growth of international competencies within our students. Opportunities of both virtual mobility (Tereseviciene, Volungevičienė, & Daukšienė, 2013) and virtual exchange are some of the ways to accomplish this.

This paper focuses on an initiative of Virtual Exchange (VE). VE is a term used to refer to the participation of groups of learners in online collaboration with partners from other cultural contexts or geographical locations as an intentionally designed aspect of their educational experience (O'Dowd, 2018). VE Projects can be important and relevant ways to bring people from different cultures and contexts to work and learn together to increase their intercultural communicative competence and develop a sense of planetary citizenship. Further, the implementation of certain practices can enhance learner understanding of global issues while also serving as a connector to ideas affecting all participants, regardless of geographic location.

One such source to address global issues faced by people all over the world is presented as the United Nations Sustainable Development Goals (UN SDGs). The UN Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges populations around the globe face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. There are 17 interconnected goals identified as part of the 2030 Agenda for Sustainable

Development situated within three focus areas: economic, social and environmental (United Nations, 2024a). Universities that implement actions around the UN SDGs contribute to a larger, more important step towards encouraging cooperation and partnerships between institutions, learners, and citizens to attain these goals by the 2030 aim.

The work described in the following article involved students, faculty, and staff engaging in a cross-cultural "Internationalization at Home" virtual collaboration. This VE was developed in partnership with faculty coordinators from five universities across the globe (one in Middle East, one in South America, one in Central America and two in North America), between the months of March to April 2024.

This paper presents the components of the VE project, and the activities developed by the collaborators. Sections include the inception of the project and how students engaged with other members from these universities through selected information and communication technology (ICT) tools to share information about each other. Dialogues were offered in both synchronous and asynchronous formats and were guided by principles of international perspectives and considerations focused on the UN SDGs. Finally, the paper concludes with a presentation of outcomes and future recommendations for other multi-institution VE initiatives.

The 2030 SDGs aim to balance economic and social development with environmental well-being. It is relevant to mention that the project reported here addresses SDG 4 and 17. The fourth SDG is aimed at using education to attain this balance. It puts an emphasis on the fact that there is a need for inclusive and quality education provision as well as opportunities for effective and lifelong learning of all people. SDG4 has outlined 10 specific targets.

In particular, Target 4.3 addresses higher education, specifying that both women and men have equal access to reasonably priced, quality technical, vocational, and university education around the world. The target makes it clear that countries are expected to provide tertiary education opportunities that females and males everywhere could have access to in the next decade (United Nations, 2024a).

In its turn, SDG 17 emphasizes the need for partnership and sustainability as necessary to broadly support all the SDG goals. The primary focus of this specific goal is that attainment of all 17 goals can only be realized through stronger collaboration between governments, the private sector and civil society. SDG 4 is centered around education being of immense importance and partnerships amongst all sectors will be the catalyst to support the achievement of inclusive and equitable quality education in addition to promoting lifelong learning opportunities for all (United Nations, 2024a).

1   Virtual exchange in education

VE utilizes technology as a catalyst to connect teachers and students from different parts of the world. Often, the aim of VE is to engage in the development and implementation of educational projects and activities together. It involves constant communication between participants, generating a productive cultural, social and cognitive exchange. These exchanges take place online which affords opportunities for students to develop soft skills, such as self-confidence, self-awareness, and critical thinking, alongside allowing for the reinforcement of empathy, knowledge, and respect for other cultures (Borràs, Gallego-Balsà, & Arnó-Macià, 2024).

According to Divanna (2008), the roots of VE can be found in the learning networks created by Cèlestine Freinet in the 1920s. He introduced the concept of inter-school exchanges, where students from different schools, often from different towns, sent their work to each other. As the author highlights, this practice encouraged students to focus on clarity, style, and accuracy of the information shared, as well as the cooperation between students located in different places. In Acker´s words:

"In two departments, they have organized this correspondence between schools from the same district, and between distant schools (neighboring district or department). It works well because there is a strong commonality of ideas that allows the young correspondents to broaden their horizons, their ideas and their intellectual domain." (Acker, 1992, p.25).

One of the first VE initiatives was the New York/Moscow Schools Telecommunications Project, launched in 1988 (Helm, 2018). At a time when tensions between the United States and the USSR were growing, the iEARN founder, Peter Copen, saw the need to connect young people from the two countries during the Cold War, with the support of the Russian Academy of Sciences and New York University (Wagner, 2007). As the author explains, the State Department of Education initiated a pilot program among 12 schools in each nation. The New York State and Moscow School Telecommunications Project (NYS-MSTP) School-to-school partnerships continued until 1990. Over time, the modern iEARN was created. Currently, more than 100 institutions are part of the iEARN network.

The concept of VE is related to internationalization at home (IaH), which can be defined as, "the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments" (Beelen & Jones, 2015, p.76). Today, VE has become a very dynamic means of cooperation. Many educational institutions are joining the different networks of academic collaboration that exist all over the planet. As VE does not require physical mobility, it facilitates the connection

between people located in many corners of the planet, managing to carry out educational projects that benefit all parties involved.

Although VEs provide rich educational opportunities, they present several challenges that need careful planning. Among the challenges are different language proficiencies and cultural mindsets in the students, differences in educational systems and time zones among partner institutions, and the time commitments expected of teachers in organizing exchanges. Pre-exchange language and cultural training, collaborative activities, facilitator support, flexible scheduling, shared learning platforms, alignment of learning objectives, institutional support, collaborative leadership, and resource sharing can help reduce these challenges (Healy & Kennedy, 2020).

Given the effective response to these challenges, VE can realize its complete educational potential, where learners develop intercultural communication skills, experience collaborative learning, and collect insight from a variety of perspectives and cultures (Healy & Kennedy, 2020).

2 Overview of the UN SDGs

The SDGs are seventeen aims within a universal call to action adopted by all Member States of the United Nations in September 2015 for the period of 2015-2030. The goals focus to minimize poverty, protect the planet, and ensure peace, prosperity, and well-being for all people now and in the future.

The SDGs were officially agreed on in 2015 with compelling evidence to show that the world needs a more sustainable approach. They are inclusive in their setting, science-based, politically feasible, and easy for the public to understand. If they can be delivered in partnerships and with aligning, the goals will offer us the best opportunity to secure an equitable, healthy, and prosperous future for current and future generations (Morton, Pencheon, & Squires, 2017).

2.1 Using VE to promote discussions about the UN SDGS

Collaborative learning can happen with students from different geographic locations, contributing to intercultural competence and a deepened understanding of global issues such as the SDGs. According to Lenkaitis (2022), incorporating SDG content in VE helps to increase the knowledge of these universal goals by the learners, thus contributing to the United Nations 2030 Agenda.

Moreover, Clarke, Triggs and Nielson (2014) highlight the significance of cooperative learning environments within educational settings. The integration of the SDGs in higher education across the world requires an approach that includes the goals comprehensively into the curriculum. VEs in education support a powerful tool for developing cross-cultural awareness, a deeper knowledge of global challenges like the SDGs, and collaborative learning environments that go

beyond conventional educational boundaries (Molina et al., 2023; Fors & Lennerfors, 2020).

2.2 Integration of the SDG in the curricula

Universities are now including the SDGs in their syllabi to offer the knowledge and skills required by the students to combat global issues and to make sustainable development real in the world (Radha & Arumugam, 2023; Avelar et al., 2023). This integration includes the following actions: creation of new courses, modules, and subjects dealing with the SDGs from all disciplinary and interdisciplinary perspectives; faculty training programs that allow for the infusion of the SDGs into higher education policies and practices; the foremost focus on growing awareness and the subsequent action-oriented learning related to sustainability; teacher training programs that would reinforce their alignment with the SDGs and somewhere the National Education Policies.

By approaching the SDGs in their curricula and operations, higher education institutions play a vital role in the creation of economically sustainable development on a local, regional, and global basis. For instance, one of the VE programs is the Global Education Program which connects many universities around the world, in which students participate annually in Global Virtual Conferences to discuss pressing global issues related to the SDG (GPE, 2025) such as environmental issues, climate change, waste management, physical and mental health issues, etc. (Łobodzińska, 2022; Nehar et al., 2022). However, there are some difficulties and impediments to effective integration, such as the need for more support and resources from the faculty (Albuquerque et al., 2023).

3 The VE project

3.1 The professors, participants, and methodology

For the project's development in March and April/2024, three professors (two from the US and one from Brazil) started working together on its inception in August 2023. Two of these three professors have already developed other joint initiatives on VE since 2021 (Calvo & Hartle, 2024a; 2024b). In February, the professor from Honduras joined the group and in March, the professor from Algeria (who was the guest speaker of the first synchronous meeting) started working with the team, not only as an invited speaker but actively participating in the organization and development of the VE (Figure 1).

The focus on the SDGs was chosen because it is an interdisciplinary topic, and its discussion is very important for global awareness on issues related to sustainability and world citizenship. Also, by reflecting on it, participants can be more aware of the interconnectedness between actions and effects on global and local levels.

The VE Project was disseminated as an outreach activity for students and faculty from the five partner universities. Because of this advertising, there were participants from many different backgrounds and fields of study/knowledge. For the students from one of the North American universities, the VE was incorporated as one of the curricular activities from the Course, "Civic and Community Engagement." In total, there were 110 registrations, 86 participants in the Google Classroom and 36 concluded and received certificates for their participation in the VE.

Figure 1. Flier to advertise the VE Collaboration.

The professors involved in the collaboration had meetings every seven to fifteen days to work on specific details of the VE, such as deciding on the synchronous, asynchronous activities to be developed, as well as the digital platforms to be used; looking for and selecting the readings and videos for the asynchronous weeks; planning the dynamics and interactions of the synchronous meetings; among other details.

Google Classroom was chosen as the digital platform used to organize and post the activities. The participants interacted for four weeks via different tools: Zoom and breakout rooms; Padlet; Google Classroom and Google Forms. Besides the task organization and direction in the Google Classroom, every week professors sent "reminders" by email to the participants to reinforce the development of the activities during that week. At the end of each week, participants also completed a survey which also served as documentation of attendance.

In the first week, the asynchronous task of getting to know each other was developed. Participants also read texts and watched videos to be prepared for the first synchronous session. In the second week, they interacted with one of our organizers, Prof. Dr. Benameur Nehar, as the guest speaker from the Abou Bekr Belkaid University of Tlemcen, in the Middle East. In the third week, the participants read texts, watched videos, posted a comment in the Google Classroom for the following question: "What can you do or what is your country doing to reach the UN SDGs by 2030?" and replied to answers they read. Finally, in the fourth week, during the synchronous meeting, they interacted in breakout rooms in order to think about actions they could implement for a more sustainable world. To culminate, participants prepared a final narrative to reflect on what they learned with this VE Project. In the next section, a detailed description of the synchronous and asynchronous tasks for each week are presented.

3.2 Tasks developed

Participants who enrolled were at various levels of knowledge of the 17 UN SDGs. As a result, during the first week, to establish a common understanding, they were asked to watch some short videos that explained why the SDGs are important, why they matter, if they are still achievable, and presented challenges to meeting them by 2030. Also, they read texts and took a Quiz on the SDG, available at the Gapminder platform (https://upgrader.gapminder.org/t/sdg-world-un-goals). Important to their comfort in collaborating in a VE, participants also engaged in a "getting to know you" asynchronous Padlet activity (Figure 2). Putting a green pin in a world map provided by the Padlet layout, each shared a picture of themselves, name and university attended, hometown and how long they had lived there, personal information, (e.g., family, pets, hobbies, career goals, etc.) and interests in the SDGs. Once others had posted their introduction,

they were asked to virtually say "Hello" to several participants from universities other than their own and leave a short comment. Also, in this same world map, they were encouraged to talk about a place they would love to visit, by attaching a purple or pink pin to the map.

Figure 2. Asynchronous activity of getting to know each other.

During the second week, one of the professors, also the guest speaker presented a synchronous Zoom session titled, "Towards sustainable development for all: How can progress on the SDGs be measured? and Who has a role in implementing the SDGs?" Following the presentation, participants engaged in randomly assigned breakout rooms for discussions based on the guiding questions: How are energy issues connected to your lives, your community, your country, and the world? What do you think about each country's progress in reaching the UN SDG energy-issue goals? It is important to mention that the slides and the recording of the talk were available to the participants in the Google Classroom.

In preparation for the third week, through three videos and an online article, participants explored ways they could engage in personal actions to save the environment and help reach some of the UN SDGs. From what they learned by watching the videos and from a provided resource, Lazy Person's Guide to Saving the World (United Nations, 2024b), participants engaged in an online discussion at Google Classroom, paying attention to the following directions: "What can you do/ what is your country doing to reach the UN SDGs by 2030? Please reply to at least one other person. Consider someone from another country and share/compare/contrast/expand to have a dialogue."

The fourth and final week included opportunities for dialogue, synchronously in Zoom breakout rooms, guided by professors. Small groups expanded upon and added other perspectives to what they wrote in online Google discussions the week before. Groups chose problems and solutions to reach the UN SDGs that they were passionate about, particularly those that exist in their communities or countries. They were encouraged to compare and contrast the progress in respective countries as well as explore why some solutions are not meeting the needs of problems (the gaps that need to be "closed" by 2030). To support reflection on the entire four weeks of conversations, participants wrote a narrative highlighting one aspect that most called their attention in the development of the VE Project. They had to write one paragraph (100-150 words), or bullets, or YouTube video explaining the aspect they chose and include an illustration (picture, image, drawing) to artistically represent that. Some students only wrote the comments in the Google Classroom, but some others (12 participants) chose a picture/image to represent their views (Table 1).

Table 1

Overview of the sessions, tasks, and platforms

Weeks	Overview of the sessions and tasks developed	Platforms/tools used
Week 1	Asynchronous	- Padlet
	- Getting to know each other/ Introductions	- Gapminder, Youtube, website
	- Reading texts, watching videos and taking a quiz	- Google Forms for reflection
Week 2	Synchronous	- Zoom
	- Invited guest speaker presentation;	- Google Forms for reflection
	- Interaction in breakout rooms;	
Week 3	Asynchronous	- Youtube, website
	- Watching videos and reading a text;	- "Forum" in Google Classroom
	- Discussion in Google Classroom	- Google Forms for reflections
Week 4	Synchronous	- Zoom
	- Interaction in Breakout rooms	- Google documents
	- Final narrative	- Google Classroom

4   Reflections on the outcomes and future recommendations

One of the potentialities of this VE project was the freely chosen participation of students and faculty to engage in professional learning at their own pace and ability. As an outreach activity for five universities, there were participants from many different fields of knowledge which enabled trans-disciplinary connections and conversations on the focus of the project. So, the format of the VE (outreach activity and part of a course in one university) fostered the inclusion of international and intercultural competencies in both curricular and co-curricular

opportunities, which were detailed and carefully planned by the professors. The participation in the VE was recognized by issuing certificates for the ones who completed the tasks.

Another important aspect of this project was that it offered global awareness and reflections on the SDG in a way to foster global and local connections on topics that are important for all citizens. Self-identification of specific SDG themes allowed for natural conversations amongst participants that created connections and feelings of inclusiveness in co-constructed understanding of global issues. Thus, utilizing the SDGs provided a catalyst for moving beyond a superficial approach to education allowed for participants to engage in the experience on a macro level, thus enhancing the impact of global citizenship related to understanding others (Lenkaitis, 2022). Co-construction has shown to be effective for the development of a sense of global citizenship.

Some participants shared they had never had opportunities like this one provided by the project in a way that fostered connections with people from different areas, on a global level to discuss and reflect on issues that matter to them, such as the ones related to sustainability.

The challenges faced were related to the nature of the VE (outreach project without a course requirement vs the VE as part of a discipline/course). There were many student dropouts (especially for the outreach) as the number that registered for the project and began it was significantly reduced by the time it concluded. Students identified to receive the certificate of completion were those that participated in each week's activity. Therefore, students considered not completing the project if they only participated in partial requirements or did not attend all sessions and complete the associated tasks. Also, many of the tasks were not developed in the time/week it was intended so participants could not prepare themselves for the interactions.

Another aspect was that participants had difficulty making connections or sustainable relations between themselves after the project concluded. Typically, this would be facilitated by professors/coordinators of VE projects to allow for continued relationship building and development. Participants in the asynchronous format did not initiate a sustained connection with one another.

In a general, it was a positive initiative yet, based on our reflections, we bring recommendations for future VE, such as providing small asynchronous group work to develop more connections and relationships among the participants and provide safer/comfortable spaces for using the language as a lingua franca; organizing and planning actions involving more people than academics (e.g. society; non-charity organizations) and adding a "practical" or action component for the implementation of the discussions and reflections on the SDGs. While these recommendations are practical and beneficial, collaborators are also challenged by the idea that perhaps the technology and the synchronous or

asynchronous components should not be the priority, but rather the effort to create the most effective multimodal learning environment (Colpaert, 2020).

To conclude, despite the challenges, we encourage additional projects like this that are open to all interested participants from a variety of sectors for them to experience this valuable initiative of VE through the most effective multimodal environments in which participants can make global connections, understand about other contexts and perspectives, and practice language and communication skills.

Conclusions

This article demonstrates a successful VE project that focused on the UN SDGs. It connected students and professors from five universities in different parts of the world. The project used a variety of online tools to help people talk and collaborate, both in asynchronous and synchronous ways. This helped them learn about different cultures, work together to solve problems, and understand more about sustainability in different areas.

The project showed that VE is one modality for people to become better global citizens and deal with global-local problems. However, it also faced challenges like some participants dropping out and having trouble staying involved after the project ended. For future VE projects, it's suggested to use smaller groups that work together at different times to build stronger connections, work with more organizations than beyond just universities, and include practical activities to make the learning experience more impactful. This study shows that VE can be a flexible and easy way to learn and make the UN SDG more involved in the curriculum and co-curriculum of the institutions.

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