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16 Cultivating Change: Student-Driven Sustainability Projects

Abstract: This chapter discusses sustainability-focused student-run projects being used in the libraries at Binghamton University, part of the State University of New York system, as unique learning opportunities that encourage high quality engagement and act as a form of education for sustainable development. Two different examples are presented, both of which provide insights from two librarians as well as from a student employee. The first example highlights a grant-funded project resulting in the creation of an Equitable Sustainability Literacy Guide (ESLG). The project was a typical student project. Two librarians provided the idea, resources, basic outline, and overall guidance for the project and students successfully undertook the majority of the work. The second example highlights a non-traditional student-run project involving a Sustainability Hub Student Interest Group which has had its successes, failures, and multiple iterations. The concept of a broader Sustainability Hub is also discussed and suggestions given for ways in which other academic libraries can engage with students to promote and educate their communities about the United Nations Sustainable Development Goals, and help prepare future leaders of sustainability.

Keywords: Sustainability; Academic libraries – United States; Student library assistants; Student-centred learning; Education for sustainable development

Introduction

In higher education institutions, students can wield an incredible amount of power, often influencing administrators to enact policy and cultural changes in ways that faculty and staff cannot (Lee et al. 2022). In recent years, student involvement has manifested itself through sustainability activism, where students have been noted frequently to be major drivers of change and champions of aspects of the Sustainable Development Goals (SDGs) (United Nations n.d.a; United Nations [2015]) in academia (Lee et al. 2022; Murray 2018; Xypaki 2014). As academic libraries become increasingly involved in sustainability around the world, collaborating with students can strengthen the impact of sustainability initiatives on their campuses. It can also create meaningful leadership and educational opportunities for students passionate about sustainability that also fulfill the main objectives of UNESCO's Education for Sustainable Development (ESD) *Roadmap*: to raise awareness of the

seventeen SDGs, to promote critical and contextualized understanding of the SDGs and to mobilize action towards the achievement of the SDGs (UNESCO 2020).

In this chapter, the authors, two librarians and a student, present a case study detailing how the librarians created unique student-led sustainability opportunities at their mid-sized academic institution, with the student reflecting on project impacts and outcomes. The librarians discuss how they developed hands-off opportunities that allowed students to have more chances to see the impact of their decision-making processes, to learn to pivot and adapt approaches based on real-time experiences, and to enhance critical thinking and leadership skills. These experiences were not only beneficial for the students, but essential in empowering them to become effective climate and sustainable development leaders in the long-term (Steiner and Posch 2006).

While the authors hope the discussion of the project opportunities will inspire others to explore ways that students can run sustainability projects at their institutions, they acknowledge that not all libraries will be able to recreate similar experiences, particularly through direct student employment. Hence, the authors conclude the chapter with recommendations on how to engage students and provide opportunities for student-led initiatives that broadly encompass the objectives of the ESD.

The United Nations, UNESCO, and the Sustainable Development Goals

According to the United Nations, the SDGs act as "a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet" (United Nations n.d.b). The seventeen transformative goals that make up the SDGs grew from the Millennium Development Goals (MDGs) (United Nations n.d.c), which led to substantial improvements in global poverty, child mortality, child education, and HIV/AIDs prevention and treatment between 2000 and 2015 (World Health Organization 2018). The successes and lessons learned over the fifteen years of the MDGs spurred efforts to expand the goals into the broader-reaching SDGs (United Nations Development Programme 2024). Many of the SDGs evolved from the MDGs, including eradicating hunger and poverty, achieving gender equality, ensuring quality education, and promoting well-being, which grew from the MDG of combating diseases.

SDGs including SDG 11: Sustainable cities and communities (United Nations n.d.n), SDG 12: Responsible consumption and production (United Nations n.d.o), SDG 13: Climate action (United Nations n.d.p), SDG 14: Life below water (United Nations n.d.q), and SDG 15: Life on land (United Nations n.d.r) expand on the MDG of ensuring environmental sustainability. In addition, SDG 17: Partnerships for the goals (United Nations n.d.t) developed from the global partnership MDG (United

Nations n.d.b, c). Several SDGs expand on the MDGs relating to the eradication of poverty and hunger, together with improvements in health and nutrition with SDG 1: No poverty (United Nations n.d.d), SDG 2: Zero hunger (United Nations n.d.e), SDG 3: Good health and well-being (United Nations n.d.f), and SDG 6: Clean water and sanitation (United Nations n.d.i). Other SDGs focus on activities which underpin prosperity with SDG 5: Gender equality (United Nations n.d.h), SDG 7: Affordable and clean energy (United Nations n.d.j), SDG 8: Decent work and economic growth (United Nations n.d.k), SDG 9: Industry, innovation, and infrastructure (United Nations n.d.l); SDG 10: Reduced inequalities (United Nations n.d.m) and SDG 16: Peace, justice and strong institutions (United Nations n.d.s).

It is evident that higher education aligns with SDG 4: Quality education: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations n.d.g). However, the importance of education goes beyond meeting this one goal. Education itself, including higher education, plays an important role in meeting all seventeen SDGs. This sentiment was shared by Qian Tang, UNESCO Assistant Director-General of Education, in his foreword to the *Education for Sustainable Development Goals: Learning Objectives*. Tang went on to emphasize that education "is not only an integral part of sustainable development, but also a key enabler for it. That is why education represents an essential strategy in the pursuit of the SDGs" (UNESCO 2017, 1). In 2016, two researchers examined this idea more closely by exploring United Nations flagship reports in depth. Their article found a link between education and sixteen of the seventeen SDGs. They listed explicit examples of how each SDG influences education, and how education influences each SDG (Vladimirova and Le Blanc 2016). The International Federation of Library Associations and Institutions (IFLA) in its Library Map of the World project collects stories from libraries around the world that work with the SDGs and maps their achievements. While most of the stories shared are connected to SDGs 4 and 17, Quality education and Partnerships for the goals, every single SDG had educational stories associated with it (IFLA n.d.a).

The essential part played by education in ensuring the acquisition of new skills, attitudes and knowledge to ensure more sustainable societies and the achievement of the SDGs is the reason that the UNESCO ESD learning objectives were created to encourage and guide education in relation to the SDGs (UNESCO 2017). UNESCO "has been the lead United Nations agency on Education for Sustainable Development (ESD) since the United Nations Decade of Education (2005–2014)" (UNESCO 2020, 3). In its role as a leader in ESD, UNESCO created the ESD for 2030 program to help bring about the changes needed to respond to climate change (UNESCO n.d.). With a vision of building "a more just and sustainable world through strengthening ESD and contributing to the achievement of the 17 SDGs" and the key objective: "To fully integrate ESD and the 17 SDGs into policies, learning environments, capacity-building of edu-

cators, the empowerment and mobilization of young people, and local level action" (UNESCO 2020, 14), it is evident that much of this influential program centers around the SDGs and the important role that education plays in meeting the goals.

The role of higher education in the SDGs can be seen beyond the work of UNESCO. In 2021, the journal *Higher Education* published a special issue focused specifically on the SDGs in higher education. It includes nine articles on a range of topics including both positive and negative experiences with the SDGs. It also highlights that seventeen universities worldwide are designated as SDG Hubs for their commitment to addressing the SDGs and educating future generations about the biggest global challenges (Chankseliani and McCowan 2021, 2). A chapter in Garcia's et al. (2017) book makes similar points to UNESCO on the importance of education in meeting all of the SDGs and leading to a sustainability-minded population in general. They discuss how ESD not only teaches about environmental issues but also builds fundamental skills such as critical thinking, helping students to think about the future and learn to collaborate in decision-making. In late 2023, new frameworks were developed to aid in the integration of ESD in higher education (Ahmad et al. 2023). The experiences and skill-building that come from ESD also help change behaviors. It is evident that developing hands-on, creative, and actionable problem-solving skills in students ensures that they are taught to think and act creatively and steadily grow into effective creators, leaders, and change agents (Filho et al. 2020; Garcia et al. 2017).

Library Involvement with the Sustainable Development Goals

"An analysis of twenty case studies where libraries implemented pro-environmental measures concluded that sustainable development is now a new paradigm of librarianship" (Fedorowicz-Kruszewska 2020, 279) although the sample size was small. Sustainability has been a part of libraries for decades. While the green library movement started in the 1990s, sustainability-related activities in libraries, such as lending materials beyond books to benefit the community, go back to at least the late 1970s (Antonelli 2008). What is it about libraries that makes them good sustainability partners? SDG Target 16.10 "Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements" (United Nations n.d.s) explicitly acknowledges the importance of access to information which is what libraries do. Libraries provide information, ensure access, support, engagement, communication and in general work towards making an impact on the communities they serve. Missingham (2021) states a sentiment shared by most library workers: "libraries are a key element in the economic,

social, and educational structure within nations. They deliver public, educational, health, and state services that enhance community well-being and economic outcomes" (Missingham 2021, 391). This can be seen on all levels of library work, from small libraries to large global organizations. IFLA is instrumental in connecting libraries' work to sustainability and the SDGs. They state that "libraries support initiatives in a variety of fields, including health, agriculture, civic engagement, education... and have a powerful impact in the community..." (IFLA n.d.b). In 2019, then IFLA Secretary General, Gerald Leitner, commented, "I am convinced that there is a space for libraries in the world envisioned by the UN 2030 Agenda. Not just that there can be a space, but that there must be. We cannot achieve the SDGs without libraries" (IFLA 2019). OCLC, a worldwide library consortium, reported that the OCLC Global Council had selected the SDGs as its area of focus for 2020–2021 to explore libraries' contributions and opportunities to reach the goals (OCLC 2021).

Sustainability and the SDGs have been integrated into the activities and policies of library professional organizations for decades, with the American Library Association's (ALA) Task Force on the Environment (TFOE) being established in 1989 (Antonelli 2008; Charney 2014). The ALA TFOE morphed into the Sustainability Round Table (SustainRT) in 2012/2013 (ALA 2013). Internationally, IFLA is leading the way in connecting sustainability to libraries, adopting the UN 2030 Agenda and the SDGs and creating a "Global Vision of a strong and united library field powering literate informed and participative societies" (IFLA [2018]) in order to call libraries to action, and to assist them. In January 2024, a librarian started a thread called *Sustainability & Libraries Network* on the Association for the Advancement of Sustainability in the Higher Education member site, in order to ask specifically about networks for academic libraries and sustainability. All the organizations already mentioned were listed in addition to Archivists Responding to Climate Change and the recent involvement of academic libraries in the Sustainable Libraries Initiative Certification program. Anecdotally, there has been an increase in sustainability related webinars, workshops, and other professional development opportunities offered to librarians through these professional organizations and general interest groups.

Academic Libraries and the Sustainable Development Goals

What about academic libraries specifically? Much of the engagement and outreach that is discussed around the topic of sustainability and libraries tends to happen in public libraries. Is there a place for academic libraries, too? The answer is yes, both in ways that are similar to public libraries, and in different ways. Many of the

events and displays provided by public libraries can be, and are, also conducted in academic libraries, reaching a range of audiences. Academic libraries can integrate their work into coursework, student and faculty research, and student group activities on campus. Even ten years ago, there were already worldwide initiatives that encouraged sustainability in libraries (Hauke, Grunwald, and Wilde 2014). In 2011, an academic librarian explored sustainability [LibGuides](#), online resource guides used by many academic libraries, and found that academic librarians were actively involved in sustainability work (Charney 2014). After examining the results of a survey sent to the creators of sustainability LibGuides, Charney concluded that academic librarians "already accustomed to communicating across disciplines, are uniquely positioned to build bridges and forge partnerships" (Charney 2014, 1) and emphasizes the importance of academic librarians' natural trans-disciplinary work in sustainability-related programs, pedagogy, scholarship, and community building.

Many academic libraries have been attempting to map their work to the SDGs. The University of Southern Queensland (USQ) in Australia outlined its approach in a case study, and indicated that they were able to map their current work to eight SDGs and that mapping the activities demonstrated the importance of the library in culture and society (Thorpe and Gunton 2022). In 2020, the ALA created the Task Force on United Nations 2030 Sustainable Development Goals which provides resources specifically to help libraries incorporate the SDGs into their activities (ALA 2020a) and launched the *Resilient Communities: Libraries Respond to Climate Change* pilot program ALA 2020b). In 2023, librarians from two South African universities surveyed academic libraries in the country about their community engagement initiatives, which are perceived as part of the social responsibility of academic institutions The survey found that the libraries in South Africa were already engaged in initiatives aligned with the SDGs, particularly SDGs 2: Zero hunger, 3: Good health and well-being and 13: Climate action, and that other libraries around the world were telling similar stories (Bangani and Dube 2023). A similar study in 2022 linked academic libraries directly to nine of the SDGs, 1: No poverty, 3: Good health and well-being, 4: Quality education, 5: Gender equality, 9: Industry, innovation and infrastructure, 11: Sustainable cities and communities, 12: responsible consumption and production, 16: Peace, justice and strong institutions, and 17: Partnerships for the goals (Mashroofa 2022).

As part of its 2021 focus on sustainability, the OCLC Global Council conducted a survey to determine library interactions with the SDGs. Libraries in almost one hundred countries responded and it was evident that: "Whether explicitly or implicitly, libraries are contributing to all 17 of the SDGs" (OCLC Global Council 2021). High percentages, 78% and 82%, of respondents from libraries in the Asia Pacific, Europe, the Middle East, and Africa indicated familiarity with the SDGs and even the lowest familiarity rate in the Americas was over 50%. Sixty-six percent

of academic librarians responding to the survey reported knowledge of the SDGs and referred to library activities in relation to SDGs 4: Quality education, 8: Decent work and economic growth, 10: Reduced inequalities, 16: Peace, justice and strong institutions, and 17: Partnerships for the goals.

However, while an ever-increasing body of literature explores how the SDGs can easily be woven into the operations, programming, and services of academic libraries, there is very little investigation of how student collaboration and student-led projects might positively impact SDG-related sustainability initiatives in libraries. Student-led activity is an area for further exploration in academic libraries, especially with the emergence of a growing body of evidence that points to positive outcomes of direct student involvement in sustainability on campus.

One example is the work by Shriberg and Harris who published an article (2012) outlining findings from a program they conducted at the University of Michigan to help students build leadership and change management skills in sustainability. Part of the motivation for running such a program was that "successful organizational transformation from piecemeal 'greening' efforts to deep institutional sustainability requires involvement and leadership from students" (Shriberg and Harris 2012, 154). One of the strongest findings from this study was that students and staff both have unique skill sets that can easily complement each other to create more effective and thoughtful changes on college campuses. They stated that students "benefit greatly from the 'real-world' view of university staff" while staff "benefit from the students' perspective, energy, enthusiasm, and elbow grease" (Shriberg and Harris 2012, 163). Partnerships between students and staff can benefit both parties, lead to more long-term, stable, and persistent sustainability efforts on campus, and provide opportunities for students to gain skills that will make them more effective leaders in sustainability after graduation. In a similar vein, Murray found in a literature review of student-led action projects that "students' campaigning for behavior changes is an effective tool to begin altering the campus culture and overthrowing entrenched behaviors, both of which have been identified as steps in the institutional change process" (Murray 2018, 1105).

Similarly, a study initiated by Mohamad, Mamat, and Noor (2021) examined three universities in Malaysia to determine how students involved in sustainability efforts perceived their own roles as change agents. Through the interviews conducted, the study determined that students "play a pivotal role in campus sustainability initiatives" and that support from management was "an important factor that motivates them to participate in the campus sustainability activities... Without a strong support system, these change agents would not only have difficulties in resolving the sustainability issues, but it could also hamper their motivation" (Mohamad, Mamat, and Noor 2020, 417). The authors stressed the importance of providing support for students that are agents for change who as a result become empowered

to seek significant transformation. Culture shifts, one of the core objectives of ESD, take place on campuses involving strong student agency in sustainability.

Going one step further, Lee et al. (2022) conducted a study to determine how student leaders were specifically able to impact the knowledge of SDGs on their college campus through a student-led program called the Sustainable Development Goals Alliance (SDGA). After interviewing twelve student leaders who had participated in the program, they concluded that several benefits resulted because of the focus on fostering student leadership skills. Students were able to enhance their peers' knowledge of the SDGs and encourage them to work towards their attainment because the students were much more suited to "attract, engage, and empower other students" (Lee et al. 2022, 543). Putting the students into the positions of change agents provided more opportunities to "nurture skills such as leadership, teamwork, communication, and project management" (Lee et al. 2022, 541) in sustainability-related endeavors.

Overall, literature highlights the power that can result from higher education institutions supporting student-led and student-empowered initiatives. A bigger, more collective change may be possible utilizing these methods. Because academic libraries are increasingly creating opportunities for their communities to engage in sustainability-related initiatives, including those linked directly to the SDGs, it is important to explore student-led opportunities that libraries may uniquely offer. In the case study described in this chapter, the authors provide information about two student-led initiatives undertaken in the last three years, particularly from the perspective of the student responsible for managing the projects. The authors hope that the account will bridge the gap in the literature between sustainability-related student-led projects and academic libraries and encourage other academic libraries to explore and create opportunities for students to have a stronger leadership role in sustainability endeavors and integrate ESD more directly into their efforts.

Student-led Projects through Binghamton University Libraries' Sustainability Hub

Binghamton University is a world-class public research university with over 18,000 students. It is part of the State University of New York system in the United States located in up-state New York and provides broad interdisciplinary education with an international perspective. Binghamton University Libraries have three locations on two of the three university campuses, plus an offsite storage facility. The Binghamton University Libraries' Sustainability Hub was created in 2020 to foster collaboration, bolster engagement, and provide active support for all sustainabili-

ty-related activities on campus and in the community (Field 2022). Many of the Sustainability Hub's projects and activities are tied to the SDGs and ESD more broadly. This section highlights two projects that were mostly student-led: the creation of the Equitable Sustainability Literacy Guide (ESLG), and the organization of the Sustainability Hub Student Interest Group. Both projects address several of the ESD initiative's main focal points by empowering youth, transforming learning environments, and initiating local level action.

In 2022, the ESLG was published as an online resource guide for environmental justice issues. The guide was funded by the American Library Association Carnegie-Whitney Grant, and its main purpose was to educate any and all individuals seeking to learn about the environment, climate change, and sustainability through a social justice lens. The initial background research for the guide's proposal was conducted in 2020. During this phase, it was determined that, while the field of librarianship had made great strides in developing resources to engage their communities with sustainability-related topics, the exploration of these topics through a social justice lens were still severely lacking. Sustainability resources that directly addressed issues at the intersection of race, class, and gender were not often seen at the forefront of sustainability conversations in the library literature which indicated that there was a strong need for the creation of resources to support equitable sustainable development education, literacy, and advocacy.

The original vision for the ESLG was of a resource that included introductory coverage on a variety of environmental justice topics and thoughtfully curated resource lists of books, articles, podcasts, videos, and additional interactive digital content. Some of the topics suggested in the proposal were food insecurity, indigenous land rights, industrial pollution, and housing, with the understanding that if the grant were awarded, the hired research assistant might adjust the topics based on further research for the guide. The overall goals of the project were to:

–   increase the exposure and discussion of environmental justice and environmental equity in the broader sphere of sustainable development education, and
–   truly instill a more holistic, balanced, and equitable understanding of the climate crisis.

The authors ultimately received the ALA Carnegie-Whitney Grant to create the ESLG in Spring 2021. Three student interns were hired and conducted extensive research to inform and create the guide. After the guide was published, the lead intern of the ESLG was hired as a part-time student assistant through the Binghamton Libraries Sustainability Hub. Around the same time, several active students on campus mentioned to the Sustainability Hub that it could be difficult to communicate or accomplish larger sustainability initiatives across the campus body. Several clubs and organizations were dedicated to sustainability or environmental causes, but were often

unaware of what the others were doing. From this feedback, the Sustainability Hub decided to establish the Sustainability Hub Student Interest Group. Its main purpose was to create a space where student representatives from any environmental club, organization, or campus initiative could learn, engage, and collaborate with each other. The student assistant hired after creating the ESLG was given the responsibility of organizing and facilitating the interest group and was able to harness the group's collective power to bring major, local level initiatives to fruition.

The two projects are explained in more detail from the student assistant Jacqueline Jergensen's perspective. She notes their achievements and how both projects helped to empower her, other students, and community members due to their focus on sustainability education and action. Her reflections provide insight and recommendations for anyone interested in launching similar ESD-focused and student-centered initiatives in other institutions.

The Equitable Sustainability Literacy Guide: The Student Intern's Perspective

Towards the end of my first year at Binghamton University, I found an internship application to work on the Equitable Sustainability Literacy Guide (ESLG). The project sounded like an incredible opportunity to research environmental justice and share knowledge with others, but it was recommended that applicants be upper level or graduate students. I decided to apply and was soon interviewed by the two librarians overseeing the project who were just as passionate as I was. A few weeks later, I was contacted by the two librarians and offered the position. I was thrilled to accept and started researching environmental justice.

Phase I: Research

The librarians overseeing the project had created a project timeline as part of the grant proposal (Figure 16.1). The first phase of the timeline was the research which is where I commenced my work with the project. The book *Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future* by Mary Robinson and Caitríona Palmer provided a great overview of the topic and ideas about what to cover in the guide (2019). After taking notes from this book, a rough outline for the guide was developed with two main sections: *Issues*, which would explain the different instances of environmental injustices communities were facing; and *Resources*, which would provide useful books, articles, and more to the public.
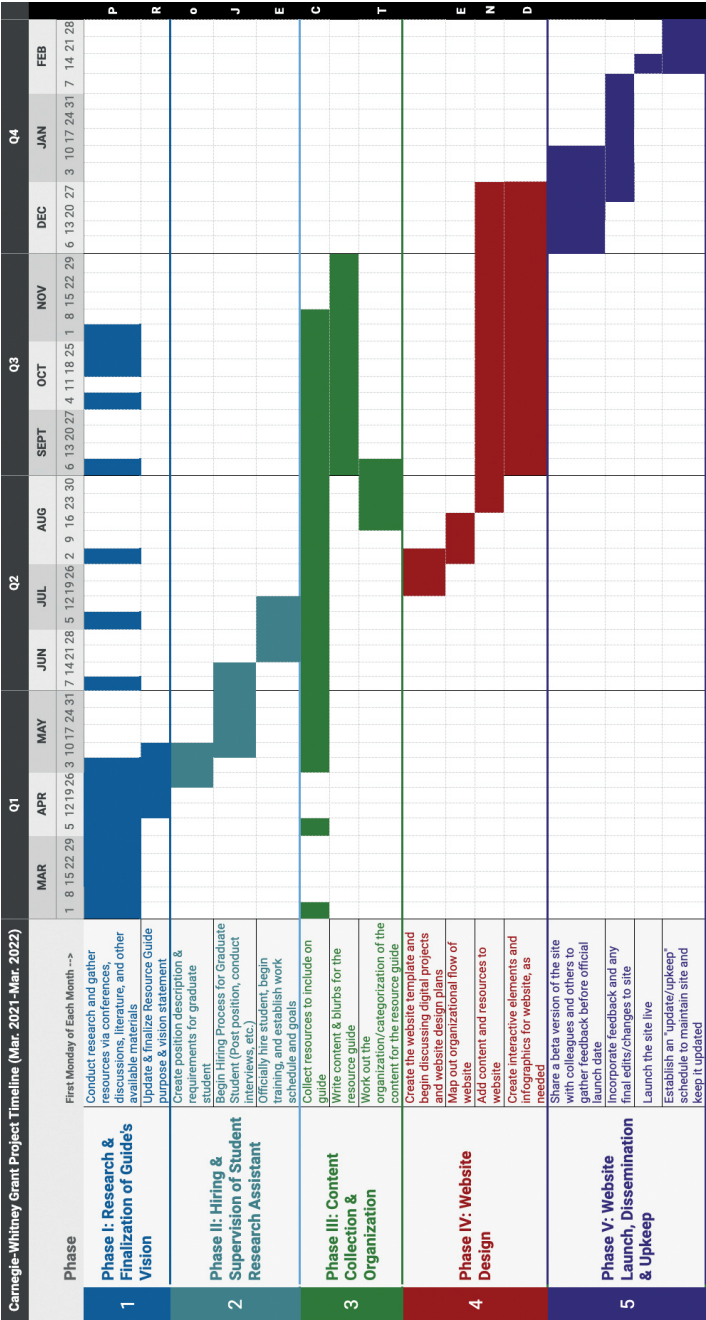
Figure 16.1: ESLG project timeline

More research was conducted to understand and communicate five environmental justice issues: environmental racism, indigenous rights, eco-feminism, climate migration, and food justice. To compile sources for each topic, the Binghamton University Libraries database was searched for scientific articles and books. Book lists and syllabuses from environmental courses were also consulted. Notes on each topic were taken and educational content was drafted. Each issue includes a subpage with an explanation of common themes, two examples of the injustice, and a list of sources.

After researching the environmental justice issues, several sources stood out as the best ones to highlight in the *Resources* section of the guide. This section was originally intended to include two subpages for *Books and Articles*, but *Vocabulary* and *Video* subpages were also added to *Resources*. At this point in the project, the two librarians suggested inviting two other students, whom they had interviewed, to join the team. They each had great ideas for the guide, including the compilation of environmental justice podcasts and debunking common myths. Both students agreed to join the team and began their own research for a *Podcasts* subpage of the *Resources* section, and the creation of a new *Debunking* section.

The research phase of the project took months of work but was essential to create original educational content that would "ensure public access to information" as stated in SDG 16.10 (United Nations n.d.s). The original outline evolved over the course of the project, but provided helpful direction in the early stages of the lengthy research process. Vast amounts of information on each topic were difficult to process but weekly deadlines helped move the project along. The ability to frequently consult both librarians involved in the project for direction and feedback throughout the process was invaluable.

Phase II: Website Design

The two librarians created a Google Site under a permanent Binghamton University email address. After a couple of months spent researching and drafting the content for the online guide, interesting and interactive ways to convey the information were then researched. The librarians provided many ideas, including the use of TimelineJS, an open source tool for telling stories. This online template helped generate an interactive widget, displaying how each example of injustice developed over time. BioRender and Canva were two other tools used to design infographics that visually explain environmental justice concepts and statistics. Figure 16.2 provides an example of a product created with BioRender.
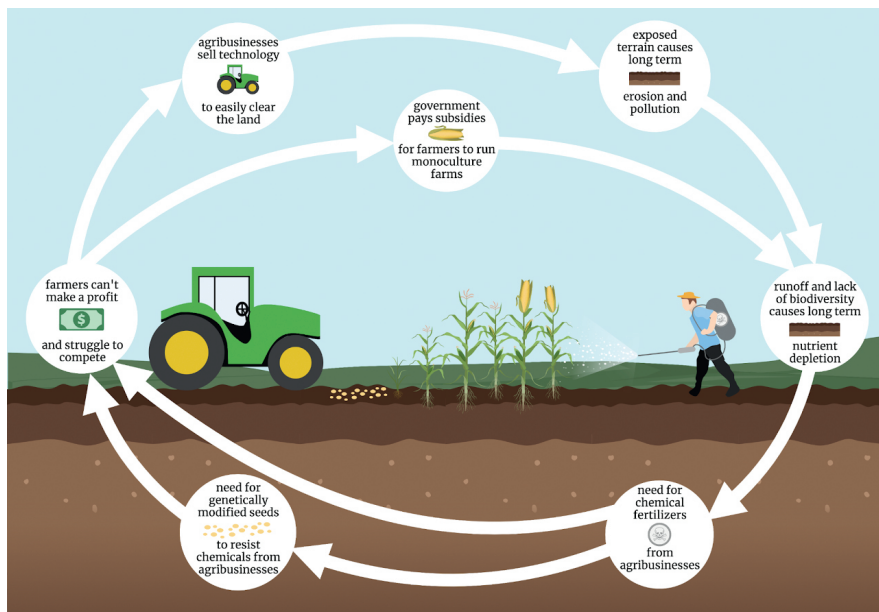
Figure 16.2: Infographic created for the Food Justice page of the ESLG using BioRender

On the Google Site, a color scheme and fonts were chosen for readability and consistency across the guide. A simple logo was created and other graphics for the guide were created to match the logo. Google Site templates were used to organize text, images, and widgets aesthetically for the public. Later, the *Homepage* was created. The librarians provided substantial direction about the details to include concerning the grant, project, and contributors. A *Get Involved* section was eventually added to highlight organizations mentioned in the *Issues* section and beyond. A *News* section was added as a place to include examples of injustices that did not fit in the *Issues* section. Adding a footer finally made the guide look like a real website. A URL was ultimately created and the finer details of the website polished.

Phase III: Publication

Substantial time was set aside for review of the resource created. During the initial research phase, many family and friends were asked to read and check the content to ensure that it was accurate and easy to understand. When the guide was mostly complete, the librarians recruited other Binghamton University staff to review the unpublished Google Site. The team committed to reviewing a few web pages each

week. Dividing up the tasks allowed time to find and correct the typos and grammatical errors before the site was published.

The Equitable Sustainability Literacy Guide was published on March 30, 2021. Soon after the guide went live, it was promoted through flyers and brochures by the Binghamton University Science Library. It was also linked to the Sustainability Hub online Libguide. On April 21, 2021, the three student interns participated on a panel that showcased the ESLG while providing them with experience in talking about their work. In its first year, ESLG reached over 3,000 different users from several different countries. Besides the *Homepage*, the most popular pages visited were *Resource*s, *Environmental Justice*, *Articles*, *Debunking the Myths of Plastic Recycling*, and the *News* subpage called *Former IBM Campus to Lithium-Ion Battery Plant*. The *Articles* subpage had the highest overall views per user, with each user viewing the page about five times.

Reflection

Overall, it was extremely valuable to meet frequently with others involved throughout the development process. Although most work was completed individually, meetings helped maintain motivation and accountability within the team. Collaborating with the two other students worked well. I was nervous at first since both were graduate students, but they were great to work with and brought much to the project that I could not have done on my own. Regular meetings ensured consistency was maintained.

Although Google Sites can be limiting in terms of web design, they are ideal because of their ease of use. The platform allows use of textboxes, images, and widgets throughout the site. It also allows the content to be continually edited and updated. In retrospect, I would change how the infographics were created. Using both BioRender and Canva may have created inconsistencies across the website. I would recommend that only one digital platform be used for all graphics. Although I wish more time had been available to add to the guide myself, a student group on campus called Binghamton Policy Project (BPP) volunteered to write more articles for ESLG. They worked closely with the librarians to produce two more pages, one for the *Debunking* and the other for *News*. This activity fostered partnerships and supported SDG 17: Partnerships for the goals (United Nations n.d.t). The ESLG also advanced the ESD for 2030 priority action areas of transforming learning environments, empowering and mobilizing youth, and accelerating local level actions (UNESCO 2020, 28, 32, 34). The work by our team was empowering because it allowed us to bring attention to local issues. In addition, the research we did particularly to prepare the news and debunk articles enhanced our learning

experiences on campus. The ESLG itself continues to act as a learning tool for those who interact with it.

Looking back on the project, I am extremely proud of the hard work we all put into creating the guide and I still use it as a resource today. I am grateful to have been trusted with the work and to have received considerable guidance and support. I learned so much from the project about environmental justice and educating the public that has positively affected all the other work I do in the field. The research and collaborative work on the project gave me a broader understanding of the SDGs in general and highlighted how certain issues, such as SDG 5: Gender inequality (United Nations n.d.h), that might not immediately be seen as issues of sustainability, are in fact closely related.

The Sustainability Hub Student Interest Group: The Student Perspective

The Sustainability Hub Student Interest Group commenced in 2021, before I worked at the Science Library at Binghamton. The group was originally begun by representatives from various sustainability student groups on campus who collaborated to reintroduce reusable takeout containers called OZZIs to the University dining halls after the pandemic (Hudson 2019). While only the Binghamton chapter of Intellectual Decisions on Environmental Awareness Solutions, IDEAS for us, and the Binghamton chapter of the campus sector of the New York Public Interest Research Group (NYPIRG), were fully committed to the Interest Group, there was a long list of potential members that could represent different organizations and departments with similar interests at Binghamton University.

Commencing and Growing the Sustainability Hub Student Interest Group

At the beginning of the 2022–2023 academic year, I was encouraged by the two librarians who supervised me in my new role as Sustainability Hub student assistant to revive the Interest Group. The past meeting minutes and project notes were provided as a guide. I contacted each sustainability student group listed to explain the purpose of the group and encourage them to send representatives to meetings. Over the first semester, the Interest Group grew to ten different student groups. At every bi-weekly meeting, each group shared its projects and initiatives and began collaborating on sustainability goals and events which focused primarily on improving accessibility to sustainability groups, composting, and plant-based foods.

In the following spring semester, a goal was set to grow the Interest Group. Outreach and marketing efforts were expanded to recruit Binghamton University students from all programs and groups (Figure 16.3). Although few students outside the original participating organizations attended the bi-weekly meetings, the Interest Group began to develop a larger presence. The meeting notes were posted and guest talks were hosted based on the members' interests.

Figure 16.3: Flyer advertising the Sustainability Hub Student Interest Group for spring 2023

The Interest Group organized an initial Sustainability Fest. It was an exhibition event to connect students with sustainability-focused groups and resources. Twelve on-campus programs, student groups, and local off-campus organizations exhibited

at the event. Through the Interest Group, the Binghamton Food Co-op, Students for Ethical Living and Food (SELF), the Student Culinary Council, Zero Hour Bing, and the Binghamton Policy Project worked with the Binghamton Student Association (SA), and Off-Campus College Transport (OCCT) to charter buses to the local farmers market for three Saturdays in April. Towards the end of the semester, members of the Interest Group visited Big Yield Growers, a local indoor vertical farm. A few weeks later, the Sustainability Hub, Plant Based Bing, the Food Co-op, Zero Hour Bing, and Citizens Climate Lobby (CCL) for a Growing Workshop invited Big Yield Growers to conduct a Growing Workshop on campus. Attendees of the event received free pots, soil, and plants, and plenty of great advice from the growers.

At the beginning of the 2023–2024 academic year, the Interest Group meetings were promoted much more effectively, with about thirty students attending the first meeting. Although the numbers dwindled as the semester progressed, there was a more balanced mix of student group officers and unaffiliated students. In an attempt to maintain the momentum, a second Sustainability Fest was arranged at short notice, within about two weeks. Although it took place outside of classes on a Friday, the event did not have a good turnout. Later in the semester, a student group successfully hosted its own exhibition with sustainability groups. It was hosted in a dining hall during dinnertime with free pizza and activities, which incentivized students to stop by and learn from the exhibiting student groups.

Progress felt much slower than the previous semester as many ideas were discussed without any decisive action towards solutions. However, one committed member applied for and received a grant for the Interest Group over a break to fund bus charters again. At the end of the semester, students suggested that the Interest Group could begin assigning small tasks to volunteers and offer different activities at each meeting to keep members engaged.

Reflection

Working with the Sustainability Hub Student Interest Group for two years has significantly improved my communication and marketing skills. I made many connections with students, faculty, and people off-campus who are all working to improve our planet. Similarly to my involvement with the ESLG, the work with the Interest Group expanded my knowledge of the SDGs and sustainability issues. The Interest Group brought together different people and groups with similar goals and ideas, and facilitated collaboration and action. Members have stated that the most valuable part of the meetings was getting to know other students and learning to become more involved in sustainability. The initiatives themselves have also been successful. The buses to the farmers market were extremely popular with on-cam-

pus residents because there was no direct bus route to the local farmers market and student groups were able to continue providing the bus throughout this semester. About twenty students benefited from using the charter every Saturday. Although I feel really proud of our accomplishments and our growing presence, I am sometimes disappointed that the participation has been limited and progress slow and insufficient. However, there is a learning curve to achieving sustainable change, and it is important to remain passionate, hopeful, and flexible.

Now in my last semester at Binghamton University, I am determined to use everything I have learned to make greater progress and teach the next student assistant to manage the Interest Group effectively. As recommended by SDG 17: Partnerships for the goals (UNESCO n.d.t), we must foster partnerships to build the capacity for sustainable change. Collaboration between students, on-campus groups, faculty, and off-campus stakeholders through the Interest Group has facilitated participation in discussions and projects, and I hope the partnerships will continue and improve our world. I also hope that the Interest Group continues to be available for future students. It supports the Sustainability Hub's contribution to the ESD for 2030 priority action areas, particularly in empowering and mobilizing youth which is a primary goal of the group.

Overall Impact of the Equitable Sustainability Literacy Group and the Sustainability Hub Student Interest Group Projects

From the student assistant's reflections, it is evident that both the ESLG and the Sustainability Hub Student Interest Group have positively impacted not only the student involved personally but also the campus and the broader community as a whole. The ESLG resource has received over 3,700 unique site visitors in the past two years from 39 different countries. The pages with the ESLG have been viewed over 8,000 times. The information within the guide has reached a diverse, global audience. In addition, the guide continues to excite and involve students within the Binghamton student community. A group of students who are members of a policy writing club reached out to the Sustainability Hub in the Spring of 2024 and expressed interest in collaborating on a project that involved environmental policy. The students were shown the ESLG, considered it an amazing resource, and agreed to write two new pieces for the guide: an article on debunking myths about electric vehicles and an article on sustainability-related infrastructure projects on college campuses. Both pages were published on the website in May 2024.

Similarly, the impact of the Sustainability Hub Student Interest Group has been substantial. It has fulfilled its purpose as a place where students interested and active in sustainability on campus can come together to brainstorm and create new

initiatives. As the student assistant shared in her narrative, several of the Interest Group's club representatives came together to fund chartered buses from the campus to the local farmer's market. The local level action allowed the students to receive access to fresh, locally grown produce. It also provided an opportunity to educate the campus community about the importance of eating locally, and to engage in more sustainable practices. The chartered buses ran for three weekends during its first year in spring 2023, and as already noted, the activity continued in the following year. One club involved in chartering buses through the Interest Group was able to secure a grant to continue the service with bus charters to the farmers market for six weekends in spring 2024. At least twenty students used the buses to attend the farmers market every Saturday.

The Interest Group achieved its goal of providing a safe, open forum for students to discuss any concerns, interests, or potential ideas for the campus. During the open discussions, students often shared issues that they faced or brainstormed solutions. Casual conversations often lead to collective action. A student noted that some of the cafes on campus were offering deals to customers who brought their own reusable mugs for coffee, but the policy was not widely advertised. She volunteered to create signage that could be shared with participating coffeeshops to make their environmentally friendly offer more visible and the sign is now used by participating coffeeshops.

On a similar note, during another meeting in the fall of 2023, another student shared a desire to grow food on campus and expressed frustration that there was no opportunity on campus to engage in this practice recreationally. The Chief Sustainability Officer on campus was present and she stated that she would look into the possibility of setting up community gardens for the campus if enough students were committed to helping with the process. Several months later, the university's administration approved the establishment of Binghamton's first community garden in the summer of 2024.

These are just a few instances that demonstrate how the Sustainability Hub Student Interest Group succeeded in giving students a powerful platform to voice their passion for a more sustainable world. They were able to utilize the group space to enact change in their local communities, learn from each other, and move Binghamton University towards more sustainable practices and policies. The group provided the students with opportunities that allowed them to learn more holistically about climate change, develop solidarity amongst their peers, and take action in meaningful and realistic ways and shared the major goals and objectives of the ESD 2030 Roadmap.

Reflections and Recommendations Going Forward

The Sustainability Hub's commitment to empowering and providing personal growth opportunities for students around the broad topic of sustainability has contributed to greater awareness and eventual achievement of the SDGs. Both the ESLG and the Sustainability Hub Student Interest Group provided additional ESD related opportunities for the library and the students on campus. The student involved was able to learn more herself and cultivate her personal leadership, management, and collaboration skills as well as share her knowledge with others. The learning and growing opportunities contributed to various SDGs including 8: Decent work and economic growth, 11: Sustainable cities and communities, 12: Responsible consumption and production, and 13: Climate action. The student is better prepared for the workforce, has learned more about creating sustainable communities and responsible consumption, and actively worked towards climate action. She also used the activities undertaken to provide others with equivalent opportunities.

Students associated with the Sustainability Hub, both employed or engaged in other ways, referred to enhanced skills and knowledge as a result of their experiences. The Group is almost entirely operated by the students themselves and provides a way for all to engage in their own sustainability projects. In under a year, the members leveraged involvement in the network for class projects involving the campus nature preserve, climate anxiety, and creating community gardens on campus. The group was intentionally formatted so that the students doing the work would have opportunities to appreciate how their decisions impacted outcomes. They took on areas of responsibility and gained problem-solving and critical thinking skills and experiences that are essential for sustainability leaders (Steiner and Posch 2006). The connection between these skills and successful sustainability leaders is why the Sustainability Hub prioritizes students and actively works towards providing opportunities for as many students as possible. It is why grant funding was directed toward hiring two additional students for the ESLG project rather than paying for librarian conference fees, why the student assistant has been granted as much independence and influence as possible, and why Interest Group members have been encouraged to share their thoughts and take charge of tasks.

It often takes some trial and error for any new project to succeed and that has also been the case for the Sustainability Hub, particularly the Sustainability Hub Student Interest Group. The exploration phase for the Interest Group is ongoing. While keeping it mostly in the hands of the students and out of campus bureaucracy as much as possible is causing some things to move slowly or fall through the cracks, the benefits are worthwhile. Almost all students who participated in the Sustainability Hub have experienced the challenges associated with sustainability work but remain positive and passionate. They, as well as the librarians overseeing

it all, are proud of the outcomes they helped achieve despite the struggles. Even students whose only interaction with the Sustainability Hub has been through attending events have had the opportunity to learn from experts and become empowered to acquire some sustainable practices, such as growing some of their own food, composting rather than throwing food away, mending or swapping their old clothing, or turning a piece of junk into something worth keeping. Navigating the intricacies has been a learning experience and confidence builder for everyone involved.

While not all libraries have the same flexibility, funding, and/or opportunity to have an official Sustainability Hub with its associated projects, there are still ways for academic libraries to engage students in promoting and contextualizing the understanding of the SDGs and preparing students to be sustainability leaders. Working with existing student groups on co-hosting events or to allow them to use library space for their meetings are two low commitment examples that have benefited the Sustainability Hub and could be used in many libraries. For example, collaborating with the student group Students for Ethical Living and Food (SELF) for several semesters to co-host clothing swaps has not only encouraged more discussion and action on sustainability but also led to the group feeling more invested in outcomes. Heightened engagement inspired the creation of a sustainability officer position dedicated to working with the Sustainability Hub. Casual conversations inviting students, faculty, and staff already interested and engaging in sustainability to participate in library events is a great first step, and was the basis for the Sustainability Hub.

Partnerships for the goals is one of the SDGs and essential to the longevity and effectiveness of sustainable development. Other ideas include hosting mending or upcycling events, climate cafes, or other low-demand events that bring people into the library to discuss and learn from each other. Students are regularly seeking to volunteer for sustainability-related projects, or work with the Sustainability Hub to advance their individual projects. Other academic libraries can have similar successes in locating and developing interested and energetic students. In addition to students expressing interest in using the Sustainability Hub for class projects, the librarians associated with the Hub visit classes to inform students about available resources and opportunities for involvement. It is through interaction and engagement with students, that volunteers for involvement in expanding the ESLG, in particular its debunking section, are being identified. Other academic librarians visiting classes may be able to use those opportunities to recruit students and faculty.

Conclusion

The tie between academic libraries and ESD and the SDGs is multifaceted. Libraries provide information on the SDGs, support related research, engage individuals in acting towards the SDGs, and help educate and prepare the sustainability leaders of tomorrow. Students, who are future leaders, do not always realize the influence they have both on and off campus. Libraries can engage with students, offer a range of opportunities, foster interest and prepare the students for future challenges. The case studies discussed in this chapter present examples of how academic libraries can develop and empower students to become change agents through projects and initiatives that emphasize using quality information and community engagement. Not only are there benefits to the students through collaboration and student-led projects, but libraries also benefit by creating opportunities that allow students to be more thoroughly engaged in working towards the SDGs from a library's perspective. Even when the SDGs are not explicitly stated in an activity or project, they are woven in. The authors hope that sharing their experiences will encourage other librarians and information professionals to explore ways in which they can create sustainability-related student-led projects that create positive, sustainable change within their campus communities.

References

Ahmad, Norita, Maria Toro-Troconis, Mohammed Ibahrine, Rose Armour, Victoria Tait, Katharine Reedy, Romas Malevicius, Vicki Dale, Nathalie Tasler, and Yuma Inzolia. 2023. "CoDesignS Education for Sustainable Development: A Framework for Embedding Education for Sustainable Development in Curriculum Design." *Sustainability* 15, no. 23: 16460. https://doi.org/10.3390/su152316460.

American Library Association (ALA). 2013. "Sustainability Round Table: About SustainRT." September 13, 2013. https://www.ala.org/rt/sustainrt/about-sustainrt.

American Library Association (ALA). 2020a. "ALA Task Force on United Nations 2030 Sustainable Development Goals." https://www.ala.org/aboutala/ala-task-force-united-nations-2030-sustainable-development-goals.

American Library Association (ALA). 2020b. "Resilient Communities: Libraries Respond to Climate Change." February 4, 2020. https://www.ala.org/tools/programming/climatechange.

Antonelli, Monika. 2008. "The Green Library Movement: An Overview and Beyond." *Electronic Green Journal* no. 27. https://doi.org/10.5070/G312710757.

Bangani, Siviwe, and Luyanda Dube. 2023. "Academic Libraries and the Actualisation of Sustainable Development Goals Two, Three and Thirteen." *Journal of Librarianship and Information Science* 56, no. 3: 773–784. https://doi.org/10.1177/09610006231174650.

Chankseliani, Maia, and Tristan McCowan. 2021. "Higher Education and the Sustainable Development Goals." *Higher Education* 81, no. 1: 1–8. https://link.springer.com/article/10.1007/s10734-020-00652-w.

Charney, Madeleine K. 2014. "Academic Librarians and the Sustainability Curriculum: Building Alliances to Support a Paradigm Shift." *Collaborative Librarianship* 6, no. 1: Article 3, 20–35. https://digitalcommons.du.edu/cgi/viewcontent.cgi?article=1110&context=collaborativelibrarianship.

Fedorowicz-Kruszewska, Małgorzata. 2020. "Environmental Education in Libraries – Theoretical Foundations and Practical Implementation." *Library Management* 41, no. 4/5: 279–293. https://doi.org/10.1108/LM-12-2019-0087.

Field, Bryan. 2022. "Sustainability Hub Takes Root and Blooms in the Science Library." *Binghamton University Libraries. Library News,* April 22, 2022. https://libnews.binghamton.edu/news/2022/04/22/sustainability-hub-takes-root-and-blooms-in-the-science-library/.

Filho, Walter Leal, João Henrique Paulino Pires Eustachio, Adriana Cristina Ferreira Caldana, Markus Will, Amanda Lange Salvia, Izabela S. Rampasso, Rosley Anholon, Johannes Platje, and Marina Kovaleva. 2020. "Sustainability Leadership in Higher Education Institutions: An Overview of Challenges." *Sustainability* 12, no. 9: 3761. https://doi.org/10.3390/su12093761.

Garcia, Jéssica, Sthefanie Aguiar da Silva, Andréia Simas Carvalho, and José Baltazar Salgueirinho Osório de Andrade Guerra. 2017. "Education for Sustainable Development and its Role in the Promotion of the Sustainable Development Goals." In *Curricula for Sustainability in Higher Education,* edited by J. Paula Davim, 1–18. Cham: Springer. https://link.springer.com/chapter/10.1007/978-3-319-56505-7_1.

Hauke, Petra, Marten Grunwald, and Anika Wilde. 2014. "Green Libraries Coming up! National and International Initiatives Fostering Environmental Sustainable Libraries and Library Services." *BOBCATSSS 2014 Proceedings*, 65–72. https://www.ibi.hu-berlin.de/de/studium/studprojekte/buchidee/bi12/bob14_fulltext_hauke_grunwald_wilde.pdf.

Hudson, Andrew. 2019. "Binghamton to Use OZZI Reusable Containers Campus Wide." *Binghamton University. Campus ID News*, October 18, 2019. https://www.campusidnews.com/binghamton-use-ozzi-reusable-containers-campus-wide/.

International Federation of Library Associations and Institutions (IFLA). n.d.a. "Library Map of the World: SDG Stories." https://librarymap.ifla.org/stories.

International Federation of Library Associations and Institutions (IFLA). n.d.b. "Powering Sustainable Development: How do Libraries Further Development?" https://www.ifla.org/how-do-libraries-further-development/.

International Federation of Library Associations and Institutions (IFLA). [2018]. "Global Vision: Report Summary: Top 10 Highlights and Opportunities." https://www.ifla.org/wp-content/uploads/2019/05/assets/GVMultimedia/publications/04-global-vision-report-summary-english.pdf.

International Federation of Library Associations and Institutions (IFLA). 2019. "Tracking Progress, Underlining Potential: Launch of the 2019 Development and Access to Information Report." *IFLA News,* May 23, 2019. https://www.ifla.org/news/tracking-progress-underlining-potential-launch-of-the-2019-development-and-access-to-information-report/.

Lee, Bernice, Katherine Liu, Tyler Samuel Warnock, Minji Olivia Kim, and Sarah Skett. 2022. "Students Leading Students: A Qualitative Study Exploring a Student-led Model for Engagement with the Sustainable Development Goals." *International Journal of Sustainability in Higher Education* 24, no. 3: 535–552. https://doi.org/10.1108/ijshe-02-2022-0037.

Mashroofa, Mohamed Majeed. 2022. "Contribution of Academic Libraries towards Sustainable Development Goals." *Annals of Library & Information Studies* 69, no. 1: 51–58. http://ir.lib.seu.ac.lk/handle/123456789/6033.

Missingham, Roxanne. 2021. "A New Lens for Evaluation – Assessing Academic Libraries Using the UN Sustainable Development Goals." *Journal of Library Administration* 61, no. 3: 386–401. https://www.tandfonline.com/doi/abs/10.1080/01930826.2021.1883376; https://doi.org/10.1080/01930826.2021.1883376.

Mohamad, Zeeda Fatimah, Mohd Zufri Mamat, and Muhamad Faisal Muhamad Noor. 2021. "Students as Change Agents for Campus Sustainability in Malaysian Universities." *International Journal of Sustainability in Higher Education* 22, no. 1: 404–422. https://doi.org/10.1108/IJSHE-06-2020-0224.

Murray, Jaylene. 2018. "Student-led Action for Sustainability in Higher Education: A Literature Review." *International Journal of Sustainability in Higher Education* 19, no. 6: 1095–1110. https://doi.org/10.1108/IJSHE-09-2017-0164.

OCLC. 2021. "Rise Beyond: OCLC Annual Report 2020–2021." https://www.oclc.org/en/annual-report/2021/home.html.

OCLC. Global Council. 2021. "United Nations Sustainable Development Goals Study 2021: Findings from the 2020 OCLC Global Council Survey." https://www.oclc.org/content/dam/research/publications/2021/216896-WWAE-A4_SDG-Summary-Report-Global-Council.pdf.

Robinson, Mary, and Caitríona Palmer. 2019. *Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future*. New York: Bloomsbury Publishing.

Shriberg, Michael, and Kathryn Harris. 2012. "Building Sustainability Change Management and Leadership Skills in Students: Lessons Learned from 'Sustainability and the Campus' at the University of Michigan." *Journal of Environmental Studies and Sciences* 2: 154–164. https://doi.org/10.1007/s13412-012-0073-0.

Steiner, Gerald, and Alfred Posch. 2006. "Higher Education for Sustainability by Means of Transdisciplinary Case Studies: An Innovative Approach for Solving Complex, Real-world Problems." *Journal of Cleaner Production* 14, no. 9–11: 877–890. https://doi.org/10.1016/j.jclepro.2005.11.054.

Thorpe, Clare, and Lyndelle Gunton. 2022. "Assessing the United Nation's Sustainable Development Goals in Academic Libraries." *Journal of Librarianship and Information Science* 54, no. 2: 208–215. https://doi.org/10.1177/09610006211005528. Available at https://research.usq.edu.au/download/db6419a0e463508d1b41ed9298ffa8fc47ff6f8febed88ab3f35e7dd03b60d80/484500/LAC%20UN%20SDGs%20final%20copy.pdf.

UNESCO. n.d. "Education for Sustainable Development." https://www.unesco.org/en/sustainable-developmen/education.

UNESCO. 2017. *Education for Sustainable Development Goals: Learning Objectives*. Paris. https://unesdoc.unesco.org/ark:/48223/pf0000247444.

UNESCO. 2020. *Education for Sustainable Development: A Roadmap*. Paris. https://doi.org/10.54675/YFRE1448.

United Nations. n.d.a. "The 17 Goals." https://sdgs.un.org/goals.

United Nations. n.d.b. "Climate Action: 17 Goals to Transform Our World." https://www.un.org/en/climatechange/17-goals-to-transform-our-world.

United Nations. n.d.c. "We Can End Poverty: Millennium Development Goals and Beyond 2015." https://www.un.org/millenniumgoals/.

United Nations. n.d.d. "Goals: 1: End Poverty in All Its Forms Everywhere." https://sdgs.un.org/goals/goal1.

United Nations. n.d.e. "Goals: 2: End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture." https://sdgs.un.org/goals/goal2.

United Nations. n.d.f. "Goals: 3: Ensure Healthy Lives and Promote Well-being for All at All Ages." https://sdgs.un.org/goals/goal3.

United Nations. n.d.g. "Goals: 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All." https://sdgs.un.org/goals/goal4.

United Nations n.d.h. "Goals: 5: Achieve Gender Equality and Empower All Women and Girls." https://sdgs.un.org/goals/goal5.

United Nations. n.d.i. "Goals: 6: Ensure Availability and Sustainable Management of Water and Sanitation for All." https://sdgs.un.org/goals/goal6.

United Nations. n.d.j. "Goals: 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All." https://sdgs.un.org/goals/goal7.

United Nations. n.d.k. "Goals: 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All." https://sdgs.un.org/goals/goal8.

United Nations. n.d.l. "Goals: 9: Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation." https://sdgs.un.org/goals/goal9.

United Nations. n.d.m. "Goals: 10: Reduce Inequality Within and Among Countries." https://sdgs.un.org/goals/goal10.

United Nations. n.d.n. "Goals: 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable." https://sdgs.un.org/goals/goal11.

United Nations. n.d.o. "Goals: 12: Ensure Sustainable Consumption and Production Patterns." https://sdgs.un.org/goals/goal12.

United Nations. n.d.p. "Goals: 13: Take Urgent Action to Combat Climate Change and Its Impacts." https://sdgs.un.org/goals/goal13.

United Nations. n.d.q. "Goals: 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development." https://sdgs.un.org/goals/goal14.

United Nations. n.d.r. "Goals: 15: Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss." https://sdgs.un.org/goals/goal15.

United Nations. n.d.s. "Sustainable Development Goals: Goal 16: Promote Just, Peaceful and Inclusive Societies." https://www.un.org/sustainabledevelopment/peace-justice/. Also available at "Goals: 16: Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels: Targets and Indicators." https://sdgs.un.org/goals/goal16#targets_and_indicators.

United Nations. n.d.t. "Goals: 17: Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development." https://sdgs.un.org/goals/goal17.

United Nations. [2015]. "Transforming our World: The 2030 Agenda for Sustainable Development." A/RES/70/1. https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

United Nations Development Programme. 2024. "Sustainable Development Goals: Background on the Goals." SDG Accelerator. https://www.undp.org/sdg-accelerator/background-goals.

Vladimirova, Katia, and David Le Blanc. 2016. "Exploring Links Between Education and Sustainable Development Goals Through the Lens of UN Flagship Reports." *Sustainable Development* 24, no. 4: 254–271. https://doi.org/10.1002/SD.1626.

World Health Organization. 2018. "Millennium Development Goals (MDGs)." https://www.who.int/news-room/fact-sheets/detail/millennium-development-goals-(mdgs).

Xypaki, Maria. 2014. "An Innovative Model of Student-Led Sustainability in Higher Education: Green Dragons, City University London Students' Union." In *Integrating Sustainability Thinking in Science and Engineering Curricula: Innovative Approaches, Methods and Tools,* edited by Walter Leal Filho, Ulisses M. Azeiteiro, Sandra Caeiro, and Fátima Alves, 473–495. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-09474-8_34.