

ISLAND ART SUSTAINABILITY EDUCATION:

A case study of Osakikamijima, Japan

[Received October 24th 2023; accepted January 30th 2024– DOI: 10.21463/shima.221]

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ABSTRACT: Although both arts education and community sustainability are very important topics for island communities, there is a dearth of academic research on the use of artistic activities to support sustainable island development. In this research, Osakikamijima, a depopulating Japanese island that the Japanese government is trying to rebrand as 'education island', was used as a case study on education on sustainability through the arts. The article employs participatory action research in the form of a 3-day art workshop collaboration between an international middle school, two universities and island residents. Students engaged in sustainability-focused deep mapping exercises, followed by the creation of artist's books and island soundscapes, to explore how the Sustainable Development Goals (SDGs) relate to the island's challenges. The findings reveal that deep mapping enhances students' understanding of the island's interwoven sustainability issues, allowing them to creatively express local knowledge. Despite challenges, these arts-based educational activities foster students' creativity and divergent thinking. Furthermore, the use of an approach combining field studies and art education appears to be more impactful than traditional teaching methods, offering a practical example of how art can strengthen sustainability education on islands and contribute to their revitalisation.

KEYWORDS: Education island, art education, sustainability education, peripheral islands, Sustainable Development Goals

Introduction

The revitalisation of declining peripheral areas, including islands, is a pressing issue for Japan, but also an important challenge for the sustainable development of other emerging and developed economies throughout the world. Japan has been making significant efforts to support island community revitalisation, with an eye toward long-term sustainability and resilience (Qu, 2020; Funck, 2020). Recent studies for example reveal that predominant

strategies now focus on attracting urban migrants and developing cultural tourism activities to breathe new life into peripheral islands facing depopulation and aging (Zollet & Qu, 2023; Qu & Zollet, 2023b, Zollet & Qu, 2024). In addition, understanding sustainable development issues and possible responses to them in small islands in a changing world is also key topic in Island Studies (Wallner et al., 1996; Douglas, 2006). At the same time, since each island and its communities have distinct geographical, historical, cultural, and social features, it is challenging to implement 'one size fits all' sustainable development and revitalisation policies (Qu et al., 2023).

There are many aspects to consider when trying to support island revitalisation from a local sustainability perspective, but this article focuses on education, and specifically on the role of the arts in supporting community-oriented sustainability education. Education is crucial because island depopulation has resulted in many island communities having a disproportionately high percentage of elderly people. Outmigration and aging have resulted in the progressive closure of primary and secondary schools, hospitals, and other infrastructures, further exacerbating the exodus of young people and families, including for educational purposes (Zollet & Qu, 2023). Providing high-quality and locally-relevant education on islands, therefore, is one key aspect of supporting revitalisation by incentivising young people to stay or even move to islands.

The other focus of this study, arts-based education, follows the growing popularity of art-based initiatives in Japanese islands, particularly in the Seto Inland Sea region. The literature recognises the success of major art events but highlights the limited presence of locally embedded strategies that integrate artistic and educational elements. Most of the artistic interventions on islands are typically viewed from the perspective of the art and culture tourism world (Prince et al., 2021; Qu & Cheer, 2021), rather than within the context of the island's social infrastructure, and rarely with a focus on sustainability.

This research focuses on the impact of arts on education for sustainable development (ESD) in the context of Osakikamijima. This island, which has 3 towns, hosts 7 schools, mainly primary and secondary ones, but also a vocational maritime high school. Osakikamijima is a unique case, as it represents the first and only island focusing on education as a means for revitalisation. The local government has been attempting to support long-term resilience and attract new residents through the establishment of international schools providing innovative and sustainability-oriented educational approaches.

This study was conducted as action research during a summer camp, which is part of the international school's summer program. The article explores how art education in peripheral islands can contribute to the development of sustainability education for students and to generate integrated solutions for sustaining the island communities. The term 'community' is used in this article to refer to villages in Japanese islands in general, while the case study and findings refer specifically to the island of Osakikamijima and its inhabitants. By examining the outcomes of art education workshops, this study uncovers the significance of art education in addressing the double challenges of sustainability and depopulation faced by the island. The findings emphasise the need for further research focusing on creative educational approaches to harness the potential of integrating sustainability and art to deliver educational outcomes relevant to sustainable island futures.

Creative Revitalisation in Japanese Islands

The primary drivers of island population decline and change in Japan are a lack of employment opportunities, with family-related factors playing a role as well (Gillies, 2014). Japan's approach to revitalising peripheral islands faced with a declining and aging population has therefore so far predominantly focused on one-size-fits-all industrial restructuring and, more recently, tourism development (Funck, 2020; Hiraoka et al., 2022; Qu et al., 2023). Each island community, however, possesses distinct geographical, historical, cultural, and social resources (Baldacchino, 2018), so focusing solely on a standardised revitalisation model rooted in outdated economic concepts could further harm peripheral communities (Qu & Zollet, 2023a). Most recently these islands, perceived as peripheral to mainland Japan and characterised by distinct lifestyles, have been attracting attention not only as tourist attractions but also as emigration destinations that appeal to those seeking a rural way of life, thanks to the romanticised viewpoint of Japanese mainlanders (Hiraoka et al., 2022; Qu et al., 2023).

Under the general umbrella of revitalisation through cultural tourism, over the past two decades Japan has witnessed a surge in island revitalisation initiatives and art tourism development in the form of socially engaged contemporary art festivals (Funck, 2020; Prince et al., 2021; Qu & Zollet, 2023a). Some of these art festivals feature world-famous artists and attract millions of tourists, such as the Setouchi Triennial in the Seto Inland Sea (Qu, 2020; Simon, 2022). These large-scale, creative island revitalisation projects that attract attention and create high revenues are becoming a sought-after 'model' for many islands. Due to their characteristics, however, islands defy simple developmental paths under art tourism development (Prince et al., 2021). Studies comparing different Japanese island communities under the same arts festival model have shown that while these initiatives emphasise respect for the community's culture, the one-size-fits-all template or model of art festival tourism is not universally applicable (Simon, 2022; Qu & Zollet, 2023a). These initiatives, labelled as 'island development' under the banner of 'island revitalisation' (Qu & Zollet, 2023a), blur the lines between development and regenerative approaches, potentially obscuring the distinct needs of these islands and their communities.

In parallel to large-scale, top-down art island projects, various small islands in the Seto Inland Sea have started bottom-up, small-scale artistic and creative activities. Examples of the latter, such as the Art Bridge on Kasaoka island in Okayama Prefecture, the Shiosai art festival in Hiroshima Prefecture, project Omishima in Ehime Prefecture, and the Goto Silk Road art festival in Nagasaki Prefecture are all community-embedded creative revitalisation efforts that connect more deeply with the community (Qu & Cheer, 2021). The initiators of these projects and their teams usually have strong local embeddedness and diverse social network resources to build upon (Qu & Zollet, 2023c). Although large-scale arts activities as part of tourism development policies have naturally attracted a lot of research attention, in the rural and island context the real take-off comes from revitalisation at the level of entrepreneurial networks (Qu & Zollet, 2023b; Qu & Zollet, 2023c). Successful arts- and creativity-based initiatives tend to follow a neo-endogenous revitalisation model that combines the reintegration of extra-island resources and the cooperation of the island community (Qu & Zollet, 2023a). This process is often facilitated by the growing number of newcomer residents and return migrants (Hiraoka et al., 2022; Zollet & Qu, 2023; Qu & Zollet, 2023c), who act as a bridge between local communities and outside resources and networks and promote socially embedded entrepreneurship. These newcomers are not only contributing to the local development of the tourism industry but also to the sustainability

of the community through the enhancement of local infrastructure and services for islanders (Qu & Zollet, 2023b; Qu & Zollet, 2023c).

In sum, creative island revitalisation is a popular topic in relation to Japanese islands (Simon, 2022; Qu & Zollet, 2023a). Some small-scale arts events partly involve educational activities, but these are usually not the focus of the events. However, island art tourism has been centred mostly in the fields of arts and tourism studies (Funck, 2020; Prince et al., 2021). On the other hand, initiatives focusing on arts- and creativity-based island sustainability education have scarcely been addressed by researchers. A focus on education is also made more challenging by the fact that in most island communities, schools are facing closure. In addition, from a regional revitalisation perspective, the relationship between community and education should be one of mutual learning and collaboration involving the whole community through activities aimed at creating a sustainable future for the community itself (Yamazumi, 2010). This often requires more complex stakeholder networks and management of in-school and out-of-school collaborations (Yamazumi, 2010; Fekih Zguir et al. 2021).

Island Sustainability Through Creative Education

The need to reorient education in response to contemporary environmental challenges has led to the emergence of Education for Sustainable Development (ESD) or Education for Sustainability (EfS) (Fekih Zguir et al., 2021). This approach seeks to establish a global education system promoting knowledge, skills, and attitudes conducive to a more sustainable society and instilling values related to global citizenship, environmental awareness, future thinking, social justice, ethics, and well-being. These principles align with the United Nations' 17 Sustainable Development Goals (SDGs) (UN, n.d.) and the goal of ESD is to foster positive behavioural changes in students (Fekih Zguir et al., 2021). However, although the importance of SDG-based education has been recognised, there are several challenges and gaps in its implementation, and many educational institutions are falling behind in incorporating it into their programs (Fekih Zguir et al., 2021; Kioupi & Voulvoulis, 2019). There are limited empirical studies on the effectiveness of ESD, and students are reported to be increasingly disengaged from sustainability education, feeling overwhelmed by sustainability concepts and having low motivation in engaging with them (Kioupi & Voulvoulis, 2019). At the same time, other studies show that incorporating ESD and Sustainable Development Goals (SDGs) values into primary and secondary education curricula has positive effects on students (Fekih Zguir et al., 2021).

From a sustainability perspective, islands are some of the most vulnerable places, especially in relation to the effects of global climate change (Walshe & Stancioff, 2018). Islands also represent ideal platforms to test sustainability education, and whether schools can educate about sustainability and at the same time bring revitalisation opportunities to their communities (Yamazumi, 2010). Such initiatives are particularly important in contexts characterised by a declining and aging populations, in which the lack of education and employment opportunities are key factors influencing the out-migration of young individuals from the islands (Gillies, 2014). At the same time, until now initiatives aimed at fostering sustainability through creative education have been scarce and under-researched in the fields of art and education, and even more so within the context of peripheral islands.

It is important to note that the mere establishment of schools on the islands or the continuation of existing traditional educational models does not ensure community sustainability (Gillies, 2014). However, education and employment opportunities are both considered as key factors to sustain communities (Gillies, 2014). In addition to digital and remote education to extend the existing education system and its resources to rural and peripheral communities (Douglas et al., 2020), it is also imperative that island-based education transmits an understanding of the local cultural capital and a strong connection to the community, to help local youths and potential island migrants to understand the local environment and its opportunities (Gillies, 2014). Therefore, a community-based educational approach is crucial for addressing the sustainability challenges that are integral to the development of local island communities (Yamazumi, 2010; Ganiaris, et al., 2018).

Selby and Kagawa (2018) found examples of island-based schools and education emphasising unique pedagogical approaches, including field-based and action-oriented learning; however, due to islands' remoteness and distance from centres of influence, the development of educational activities on peripheral islands remains a challenge. Their study also discusses the lack of educational methods and curricular options through which students on islands can interact and participate in cosmopolitan discussions with their peers from the mainland and other islands.

In conclusion, delivering effecting ESD with an added focus on island sustainability requires a creative and transformative approach with a focus both on community embeddedness and on global perspectives (Yamazumi, 2010). Art education projects also often involve community collaboration and integration, particularly when they centre around themes of community and sustainability (De Lorenzo, 2000). Arts-based education that combines service and learning attributes may also provide a more relevant opportunity and platform for the community compared to adding an educational component to art activities for island sustainability. Therefore, this study aims to explore the possibility of enhancing community engagement through art and sustainability education from an action research perspective.

Methodological Framework, Case Study Island, and Art Workshop Design

Based on the existing literature addressing the deficiencies of traditional education on islands (Corbett, 2009; Selby & Kagawa, 2018), we first identified an island-based case study that used innovative approaches to education. Osakikamijima is a peripheral island in the Seto Inland Sea of Japan (Figures 1 and 2), characterised by a high aging rate (46.0 percent) (Statistics Bureau, Ministry of Internal Affairs and Communications of Japan, 2022). As part of its long-term revitalisation efforts, Osakikamijima is aiming to become Japan's first Education Island (Osakikamijima, 2023). In March 2008, Osakikamijima formulated the 'Basic Concept of Education Island Exchange' to realise the "creation of an island of education to nurture diverse human resources." This is one of the most important policies of the 'Osakikamijima Comprehensive Strategy for Town, People, and Work - Global Strategy from Remote Islands in the Seto Inland Sea', which provided guidelines for promoting education on the island (Osakikamijima Town, 2023). The education island policy aims to facilitate students' ability to independently identify local issues, analyse the current situation, propose solutions, and present their findings within the community. Nurturing these skills is seen as essential to encourage students to contribute to their hometown's future, and to remain in the community (Makise & Yamanaka, 2018). Osakikamijima has identified education as one of the key priorities of the town government

and expects that supporting education will be one of the most effective ways to revitalise the town and its socioeconomic activities. In addition to education, this island is also notable for having Japan's most advanced carbon-neutral power generation facility. As a whole, the island is focusing on education and sustainable energy as the key development directions for island regeneration.



Figure 1 - Map of Osakikamijima and Hiroshima Global Academy (authors' modification of Geospatial Information Authority of Japan, 2016 map).



Figure 2 – The view east from Osakikamijima (authors' photo, 2020).

The reason why Osakikamijima became known as Education Island can be traced back to more than a hundred years ago, when the Hiroshima National College of Maritime Technology was built (1896). A new Prefectural International Middle and High School, also called Hiroshima Global Academy Junior / Senior High School (HiGA) was also established in 2019, in addition to three other elementary schools and a middle school (Figure 3). The establishment of HiGA has laid an important foundation to facilitate exchanges between the island and the rest of the world and to support the internationalisation of traditional secondary education. In this article, we focus on HiGA as a case study, given the significance of Osakikamijima as the only education island in Japan and of HiGA as the most innovative middle/high school on the island. As HiGA was also seeking academic collaborations for their international island SDGs summer camp in 2022, we decided to work with the school on a series of arts-based island education activities to evaluate the potential that arts-based sustainability education brings to the island. With this program, HiGA was also aiming to add more island community-engaged activities for their students outside of their usual on-campus programs.



Figure 3. The campus of Hiroshima Global Academy Junior / Senior High School (HiGA)(authors' photo, 2022).

This project used Exploratory Action Research (Smith & Rebolledo, 2018) to create and execute a seven-day art summer camp. The camp is the result of a partnership between HiGA, Tsukuba University and Hiroshima University. Although HiGA's education program incorporates some community activities, it lacks a systematic approach to fostering student-community interactions and facilitating conversations between community members and students. The action research activities involved the lead author acting as the curator of the Art Island Sustainability summer camp workshop. The authors chose the Sustainable Development Goals (SDGs) in the island context as the thematic framework to support the planning and implementation of the summer camp and decided to incorporate community fieldwork and an art workshop into the activities. The summer camp activities were collectively devised by a consortium which included ten educators and academics, fourteen university guides, three island-based company owners, and a total of thirty middle school students who acted as participants.

During the camp, the students (average age 14 years old) conducted a 3-day sustainability-focused field trip, interviews with community members, and art workshops. These activities focused on four SDGs: SDG 2 - Zero Hunger, SDG 13 - Climate Action, SDG 14 - Life Below Water, and SDG 15 - Life on Land as a framework to think about island sustainability. These four SDGs were chosen through consultations with HiGA teachers and inputs from islanders and experts as the most relevant for the island context, and with the idea that narrowing the scope of the challenge would better suit the ability level of middle school students. The students' goal for the workshop was to think about how the SDGs relate to the current and future challenges of Osakikamijima.

The art workshop integrated narrative audiovisual learning methods, utilising artist's books (Kealy-Morris, 2013) and soundscapes (Dunn, 1999; Sterling, 2014). Deep mapping techniques (Smith, 2015; Roberts, 2016) were also employed to present a more holistic sustainability vision, transcending conventional text limitations. The workshops involved visually deep mapping the island and capturing its soundscape, culminating in an art exhibition as the final presentation for the island SDGs workshop. Embracing creative audio-visual storytelling and a handcrafted approach, these workshops departed from traditional educational methods, while also minimising reliance on electronic devices for communication and information gathering. This aligns with the belief that artistic mapping and storytelling are potent tools for raising awareness about global issues and instigating social change. At the end of the workshop, students presented their artist's books alongside art statements that explained the links of their work to the SDGs on the island.

Data for the study was collected through qualitative methods (Creswell, 2017), as illustrated in Table 1. These included a one-hour documentary film, semi- and un-structured interviews involving 20 participants, as well as a participant observation with the 30 workshop participants. The thirty participants consisted of twenty-two Japanese students, six mixed Japanese and European-American (five of whom live overseas), two foreign students living in Japan, and three students born on the island. During the workshop, students and teaching assistants were evenly divided into nine groups by gender, age, English language proficiency, and school of origin (HiGA and non-HiGA students). All qualitative data (documentaries, interviews, artist's book, and art statements written by each group of students as shown in Table 1) were transcribed and were thematically analysed and categorised by coding into four categories: art, island, sustainability, and education. The findings were analysed and discussed through thematic analysis. It is crucial to note that, given the experimental nature of this study, the results represent a preliminary exploration of art's potential to enrich students' sustainability education in the island context.

Island-based ESD through visual-audio art mapping

Amidst the progressive decline of the region's' social infrastructure, it is highly promising that the aging island community is embracing the establishment of a new international middle and high school. The presence of new schools has strengthened Osakikamijima's image as an education island. However, although the school curriculum offers students several chances to engage with the community and receive on-site education, prior to this research activity it had no organised method to implement both creative and sustainable education in this island. From the community's perspective, it is desirable for students to gain a more in-depth understanding of the island's society, culture, history, and ecology in order to be able to think about the possibilities of a sustainable future for the island. Many of these students are also part of the current residents of the island and might choose to stay

	Type of Data	Sources and Quantity
Film	Documentary film	17 mins short version and 65 mins long version documentary films
	Video recording	240 mins of raw source material (with interview)
Observation	Participatory	3 days of preparatory meetings and 3 days of full workshop
Interview	Semi-structured	15 semi-structured interviews with main participants, facilitators Approx. 15 minutes per interview
	Un-structured	5 un-structured interviews with organisers, workshop assistants, and other HiGA teachers
Art workshops	Island excursions	Field visit to local artisanal soy sauce factory, beach activities and zero carbon power generation facility
	Participants interviews with islanders and academics	A fisherman, an organic farmer, and a sustainable food systems researcher (second author). all 30 students were divided into 3 groups, each group corresponding to one interviewee through three subjects (SDGs 2, 13, 14, and 15) for interactive interviews. Each group was given 30 minutes.
	Visual art and SDGs education	Making 9 groups of deep mapping with the artist's book with 1500 words introductory text of those books
	Sound art and SDGs education	Island soundscape with 25 mins of audio recording

Table 1 - Research methods and data.

in the future. Furthermore, sustainability issues will have a tremendous relevance in the students' future. Therefore, the essence of this action research lay in immersing students in the island community, facilitating interviews with residents, and promoting sustainability-oriented learning. Much importance was given to highlighting the connections between the island's environment and community and broader sustainability challenges, as these quotes illustrate:

[on the topic of island agriculture] *When pesticides are used for agriculture, the run-off eventually causes water pollution. This shows the close relationship between the land (SDGs 14) and the sea (SDGs 15) Meanwhile, global warming leads to changes in ocean temperatures, which directly affects the decline of some types of fish. When harvesting fish, we need to understand how much we can take out from the ocean compared with how much the ocean can provide to us.* (Academic Consultant A)

While sailing around Osakikamijima, over the past decade, I've observed a noticeable decrease in various aspects. For example, due to the effects of global warming, have you ever thought about which types of seafood are currently

experiencing a decline? Not just the decline in large fish, but also crabs, octopus, and shrimp have also become significantly scarcer compared to previous years. (Fisherman A)

At the beginning of the workshop, field excursions on the islands and face-to-face interviews with islanders and experts provided the students with considerable background information (Figure 4). Through these explanations, abstract knowledge of the SDGs could be more easily understood and digested by students through hands-on experience on the island. The information derived from practical investigative experience was then translated into a deeper and locally rooted understanding of the SDGs in the island context. In the final presentation students tried to provide solution-oriented proposals for community sustainability, and islanders gave feedback to them. Simply put, the design of the summer camp not only required students to undergo social practice-based learning but also required the island community to provide a source of material and a stage to accomplish this purpose. This corroborates Yamazumi's (2010) point about the development of community education, especially as it requires interaction between community members and schools.



Figure 4 - Participants interviewing a local farmer (authors' photo, 2022).

We asked student teams to combine different arts to explore the island's past, present, and future, and to encourage them to present their findings creatively. In practice, this involved a deep mapping process represented through artist's books, together with the capture of the island soundscape. The output goes beyond traditional maps and narratives to provide a rich, multi-layered, and artistic visual-audio representation of the island's essence. Since creative activities require a certain level of freedom, we did not set any requirements for the style or volume of the artist's book other than setting the theme of SDGs in the island context. The examination of the responses to the use of artist's books reveals that the participants generally expressed feelings of creativity and social engagement, and that they found this method an enjoyable way to understand the community and representing its experiences and challenges. Many of the findings of this study derive from the content analysis of the artist's books, which encompass the workshop's outcomes and the investigation of sustainability conducted by each group of students through interviews with island residents (Table 2 and Figure 5).

Group	Content and Design Style	Proposal Highlights and Call for Action
1	<ul style="list-style-type: none"> • Describes the current SDG situation on Osakikamijima. • Explores how actions can shape the future. 	<ul style="list-style-type: none"> • Encourages readers to reflect on the desired sustainable future. • Prompts consideration of personal actions.
2	<ul style="list-style-type: none"> • Viewable from sides, showcasing past and present simultaneously. • Enables easy comparison of historical and current Osakikamijima. • Designed to be seen from front, back, right, and left. • Aims to present various regional and global issues from diverse viewpoints. 	<ul style="list-style-type: none"> • Encourages readers to contemplate actions for the island's future. • Connects past and present to inspire ideas for positive change.
3	<ul style="list-style-type: none"> • Each picture color corresponds to a specific aspect of Osakikamijima's learning. • Light blue: Fisherman Nakamura-san's stories on fishing, pink: Farmer Okamoto-san's agricultural tales, brown: Soy sauce factory Okamoto-san's traditional arts, yellow: Osaki Coolgen's power generator, orange: Photos of visited places, green: Globally relevant sustainable content. • Content linked like a Mind Map, creating connections. • Offers a visual representation of diverse aspects learned during activities. 	<ul style="list-style-type: none"> • Recognition of SDGs on Osakikamijima, including global issues. • Realisation that global challenges, like ocean plastic and global warming, are present even on a small island. • Acknowledges unique problems in Osakikamijima, Japan, and globally. • Encourages individuals to relate SDGs to their own regions and foster a closer connection to these global issues.
4	<ul style="list-style-type: none"> • Utilised real beach trash from Okushi to highlight pollution's severity. • Aims to evoke understanding and inspire action for environmental protection. 	<ul style="list-style-type: none"> • Noted weather and temperature variations in daily life globally. • Advocates collective action and encourages a joint effort in addressing environmental challenges.
5	<ul style="list-style-type: none"> • Recognised the interconnected relationship between humans and the world. 	<ul style="list-style-type: none"> • Aims to raise awareness about this relationship. • Encourages small actions, such as reducing daily plastic usage.
6	<ul style="list-style-type: none"> • Grew understanding of SDGs and global issues on Osakikamijima. 	<ul style="list-style-type: none"> • Recognised challenges like plastic pollution and climate change. • Found solutions through communication and collaboration.
7	<ul style="list-style-type: none"> • Rising ocean temperature and decreasing fish population are contemporary concerns. • Ocean plastic is a significant environmental problem. • Plastic found on Okushi beach, impacting local fishermen. • Interview with fishermen revealed declining fish catches and plastic pollution issues. 	<ul style="list-style-type: none"> • Provides not only facts but also proposes solutions.

	<ul style="list-style-type: none"> • Window motif symbolises open-mindedness and a new beginning in SDG learning. • Book illustrates changes in fish abundance due to water temperature. • Utilised beach plastic to demonstrate real environmental damage. 	
8	<ul style="list-style-type: none"> • Showcased through pictures, paintings, and concise sentences for clarity. 	<ul style="list-style-type: none"> • Contemplated "What can we do?" for environmental protection in the future. • Encourages finding solutions collectively for the betterment of the Earth.
9	<ul style="list-style-type: none"> • Earth origami symbolises rising temperatures. • Clay fish sculptures depict the impact of warmer waters on ocean life. • Fisherman's struggle due to decreased fish population illustrated on the fifth page. 	<ul style="list-style-type: none"> • Illustrates interconnectivity of SDGs, portraying a domino effect. • Encourages a fresh perspective on SDGs and urges action. • Aims to influence and prompt thoughtful consideration. • Calls for proactive measures to prevent harm to animals and future life.

Table 2 – Authors’ summary of content of artist’s books.

Students freely chose the SDG they wanted to work on, with many groups choosing more than one, resulting in 87.0% of groups covering SDGs 14, 63.0% for SDGs 13, 57% for SDGs 15, and 47% for SDGs 2 (Figure 5). The island landscape and the culture of the community of Osakikamijima had a great impact on students’ choices too: most group prioritised marine environmental issues, fisheries, and agricultural sustainability (Table 2). A few of the artist’s books even included physical trash collected from the beach.



Figure 5 - SDGs content design during the workshop (authors' photo, 2022).

The results also help to compare between traditional non-island educational experiences and socially interactive education on the island. Most of the students said that they had never expressed their feelings about sustainability through visual and auditory means. Traditional education often requires them to read in the city and then give feedback on their understanding of sustainability through reports and writing assignments. In contrast, art SDGs mapping sparked their creativity in new ways (Figures 6, 7 & 8).



Figure 6. The final outcome of the artist's book project by all nine groups. (Authors' photo, 2022).



Figure 7 - Beach activities (top left), students interviewing the local artisanal soy sauce brewery owner (bottom left) and SDGs artist's bookmaking (right). (Authors' photo, 2022).



Figure 8 - The artist's book-making processes by each group. (Authors' photo, 2022).

The following are some quotes that illustrate the feedback of students about the deep-mapping and making of the artist's books:

It's absolutely a good idea because we are creating a map and imagining whatever we want. And it really links to the SDGs. (participant A)

[From this book] you can see where we went and what we learned visually. Like this beach, a clean place with no trash. (participant B)

The most difficult part is trying to find what we want to say and how we gonna show it. (participant C)

It's an environment that students are freely and wondering around to look for something that they want to know about. (workshop facilitator, university graduate student A)

Through the textual analysis of each group's art statement (Appendix A), we can identify two main themes raised during this workshop. One is the current state of Osakikamijima regarding the SDGs and the potential for individual and collective action to shape a better future. The artist's books are designed to be viewed from multiple perspectives, emphasising the importance of considering various viewpoints when addressing local and global issues. The use of different materials and graphics to represent different aspects of Osakikamijima's culture and challenges, such as fishing, agriculture, traditional arts, power generation, and sustainability, is a creative way to highlight these elements and their interconnections (Figure 9). The artist's books created by students convey a strong message of environmental consciousness, the interconnectivity of global issues, and the need for collective action to address the challenges faced by Osakikamijima and the world. Each group of students' proposals also included action plans and community initiatives (Table 2).



Figure 9 -The details of the final version of each group's artist's book. (Authors' photo, 2022).

Through the sound samples collected during the visits, there is also an added element of sustainability on the island that cannot be experienced through visual arts. Soundscapes play a crucial role in fostering a sense of connection with nature by making us aware of the vitality of natural elements, reinforcing the importance of being alive, and promoting

sustainability education. They also draw attention to the impact of climate change on ecosystems, highlighting the significance of environmental sustainability through the loss of natural sounds, like declining bird populations and their calls. Students were instructed to record soundscapes of the island, which included the sounds of the waves by the pier, the mechanical sounds in the local manufacturing plant, the sounds of vehicles on the road, birdsong and other animal calls, and the rustling sounds of plants and trees. The most commonly recorded sound was the sound of the sea. No artificial sounds were added during the editing process.

These are some quotes that illustrate the feelings of students through the soundscape collection and making:

Ocean waves [sound], because we can know ocean wave is alive! (participant E)

If climate change is getting worse, the birds cannot live on this island. I will not hear the sound of the birds. So, its related with the sustainability. (participant F)

Sound is actually telling you what is happening around you. It tells you the environment is breaking. (participant B)

The sounds of car reversing. Because we use transportation such as buses and cars, but we don't necessarily understand how bad it could affect our climate in general. (participant G)

The sounds of waves. Because it's continuing on and on and on. It has a theme of sustainability too. (workshop facilitator, university graduate student A)

Furthermore, soundscapes serve as indicators of environmental sustainability by revealing the health and integrity of the environment through the recognition of specific sounds. Comparing urban and natural sounds can raise awareness of the environmental impact of transportation and help us understand the broader climate implications of everyday sounds in the context of sustainability.

The results of the interviews conducted during the workshop indicated that the students generally felt that the workshop approach was more liberal and relevant to social issues than traditional education. More diverse interactions are also occurring between students with different nationalities and backgrounds. Furthermore, the workshop introduced island life and island issues to students from urban backgrounds with no previous experience of living on an island. These students were more strongly attracted to the society and environment of the islands, as illustrated by the following quotes:

I was born in the city and always surrounded by concrete. It's really refreshing to see these mountains and ocean. (participant C)

[This island] is quite different from place where I live, I really like the beach, it's a really quiet place of nature. (participant F)

Through the thematic analysis of the word "island", it was concluded that "quietness" and "relaxation" were the unique feelings that the island school brought to them, unlike their living environment in urban areas.

The final session of the workshop consisted of an art exhibition and community exchange session. In this session, the students not only talked about their artist's book, but also received comments from community members who were invited to participate. All groups

also gave feedback to each other, and through this interaction learned from each other about the different creative expressions of other groups and their different perspectives on the same topic (Figure 10). The final art exhibition combining the artist's books and the island soundscape encourages but students and community members to see the SDGs and sustainable development from a new perspective, potentially inspiring them to take local action to prevent issues that hinder sustainability.

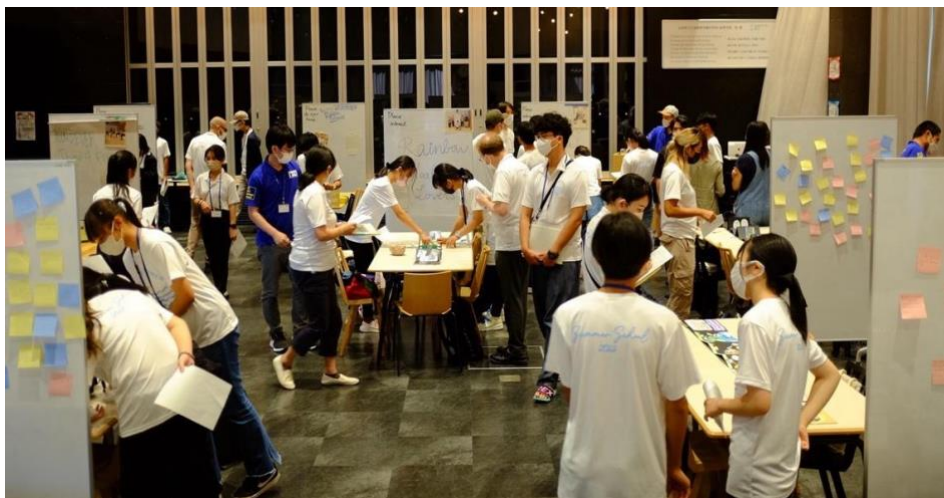


Figure 10 - The final presentation with the artist's books and co-evaluation. (Authors' photo, 2022).

From the perspective of the HiGA organisers, this sustainability education summer camp through art not only honed the students' creativity and English communication skills, but also promoted the connection between the international school and the island community. HiGA also hopes to establish deeper interaction with the community through the medium of art.

Local people were similarly enthusiastic and eager for students to learn more about local life as well as the island's sustainability challenges and ongoing community efforts. As one of the invited local people commented,

It was great to be invited as a local guest by HiGA. We hope that the students will be able to reach out more to the community to experience life on the island and that education on the island will continue to energise our community.
(farmer A and B)

Feedback from community members who came to the exhibition and the presentation of results also indicates that presenting the results of sustainable island education through art is a very visual and effective way to communicate. The islanders were also inspired by the young students about the future of Osakikamijima, and students had many ideas that made islanders reconsider their established ways of life and of thinking. Although this kind of feedback cannot directly be transformed into practical community action, it opens a window of dialogue between islanders and students. Islanders can benefit from a fresher understanding of sustainability from the perspective of a younger generation that has grown

up learning about sustainability. For students, especially those from outside of Osakikamijima, the island provides a platform for critical reflection on urban lifestyles, globalisation, and climate change. In the end we encouraged all participants and organisers to summarise the event in one word. Some of the most common answers we received were engaging, sensibilities, stunning, spirit, experience, infinity, happy, fun, remarkable, inspiring, self-reflective, creativity, and action (from the documentary film).

Arts-based SDGs Education and Implications for Island Sustainability

This article is an attempt to answer the extent to which arts-based sustainability education in peripheral islands can facilitate deeper community understanding and social engagement. The article has explored the potential of incorporating more arts education into island-based education practice, thereby calling for more future studies on community-engaged and creative sustainability education. The action research angle was also an attempt to fill the gap between sustainability education, arts education, and the community on the islands. The results of this study also suggest that the use of artistic approaches can effectively facilitate creative and community-engaged Education for Sustainable Development (ESD), and make it more approachable (Kioupi & Voulvoulis, 2019). Community-based collaborative approaches to teaching and learning do require significant partnership and preparation (Yamazumi, 2010; Fekih Zguir et al. 2021), but have a great potential for socially based collaboration between communities and schools.

In this study, sustainability education was successfully implemented on the island through the arts. The combination of art, soundscapes, and deep mapping methods played a significant role in sustainability education. The use of these methods allowed students to connect with the environment on a deeper level through visual-auditory experiences, fostering a holistic understanding of the intricate relationship between the island's narrative, ecosystems, and island communities. In addition, this educational activity also enhanced communication and interaction between community members and the younger generation on the island. Island education, while physically limited, also promotes closer island-based, community-oriented learning, and stakeholder collaboration (Gillies, 2014; Selby & Kagawa, 2018). This hands-on learning approach therefore contributes to the broader objectives of sustainability education, encouraging a sense of responsibility, empathy, and stewardship toward the island's ecological and cultural heritage. It also fostered creativity, community engagement, and sustainability awareness among students (De Lorenzo, 2000). The result was a rich, multi-layered artistic representation of the island's essence. Students were given the freedom to choose their own topics, enhancing their engagement with island communities. The workshop led to unique self-reflection learning experiences and a shift in participants' perceptions of sustainability (Ganiaris, et al., 2018). It also prompted a strong sense of connection with the Osakikamijima environment and community.

As an attempt at sustainability education 'on' an island but also 'for' the island, this experiment represents a platform to test creative sustainability education. The findings suggest that both students who are and are not residents in Japan show a range of interests in the island. Island education is therefore not simply the opening of a school on an island; the real essence is cooperation and exchanges between urban and rural areas and between islands and outside. From a community and cultural attraction perspective, students raised in non-island environments appear to have a higher interest in activities related to local culture, such as visiting the handmade soy sauce brewery and enjoying beach activities.

These findings indicate that these students are becoming more engaged with and appreciative of the local culture, and this can be valuable for designing island-embedded educational and cultural exchange programs. Such activities also allow local students to interact and discuss with other students in an international context, breaking the physical barrier of educational resources and student interactions that tend to characterise islands and peripheral areas (Selby & Kagawa, 2018). The findings of this study can therefore help to design service learning-based education and academic research and programs that enhance both the quality of education and the quality of life in the community (Felten & Clayton, 2011; Bringle & Hatcher, 2015). In the context of island decline, community interaction has become the core of island education, as opposed to simply building a school on an island. While these activities are promising, understanding whether arts education can be a neo-endogenous mechanism for island revitalisation still requires much research and practice (Qu & Zollet, 2023a). This study discovered new possibilities and opened up further questions of how islands can embrace creative (non-tourism) approaches in the context of the decline of traditional industries. This study aims to provide benchmarks for more island and rural education research and community service-oriented cases in the future.

What makes an island an education island? This question is perhaps as difficult as defining an art island (Qu, 2020). Through the action research described in this article, we have learned that an education island is distinguished by its comprehensive and community-oriented approach to education, which incorporates sustainability, cultural enhancement, and new educational techniques specifically designed to suit the circumstances of the island and its community. An 'Education Island' should therefore prioritise the development of close relationships between educational institutions and the local community, with a focus on practical and active learning, interactive experiences, and local-global linkages. Education islands aim to cultivate individuals who possess both strong local global skills and a profound connection to their island, while also equipping them with a sustainability mindset.

We hope you will read this art book and think about what kind of future you want and what kind of action you should take. (Art Statement from group 1 participants)

ACKNOWLEDGEMENTS AND FUNDING

This research was assisted by Hiroshima Global Academy (HiGA) at Osakikamijima. Special thanks Robb J.Y. Lee, Pornphan Wajjwalku, Miriam Ilsa Arfani, all HiGA summer school organisers for their invaluable assistance. Part of this study was financially supported by the JSPS KAKENHI [Grants-in-Aid for Scientific Research] No. 22K13251, 21K20068, 23H03639, 23H03644, and by the National Natural Science Foundation of China No. 42271207.

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