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Environmental Education Practices That Support Civic Engagement

Researchers at Stanford University analyzed 56 peer-reviewed studies to assess whether and how environmental education (EE) programs contribute to civic engagement.[1] Civic engagement programs support work within one's community to improve well-being and are closely related to EE since both rely on the same skills and motivations. For example, this can involve providing opportunities for learners to work with community leaders on improving transportation options or building partnerships with local environmental organizations.

Although some of the reviewed studies involved advocacy-related actions, the majority focused on other ways to engage learners in governance. Civic engagement can include a range of other types of actions such as volunteer stewardship of a local park, speaking at a public hearing, or collecting data on marine organisms for community science.

All 56 studies in the Stanford team's review reported some level of positive findings, with 17 reporting civic engagement-related outcomes at the community level, such as community learning, community resilience, partnership building, and increased social capital. Fifty of the studies reported civic engagement-related outcomes at the individual level, with civic attitudes being the most frequent. Increased civic skills and civic knowledge were also commonly reported. Importantly, most programs involved substantial investments of time, with 24 taking place from a month to a year, and 26 for more than one year. Refer to the *Executive Summary and Key Findings* document for more information on the analysis.

The Stanford team conducted a thematic analysis of the reviewed studies to examine practices that might support the development of civic engagement among program participants. The analysis revealed five key practices (See Figure 1.):

- **focusing on the local community;**
- **engaging learners in participatory and experiential approaches;**
- **including action-taking as a key program component;**
- **supporting the development of lifelong cognitive skills; and**
- **providing opportunities for ongoing meaningful social interactions.**

PRACTICE #1

Focusing on the local community

Most of the programs in the reviewed studies involved educators working to connect program content and topics to the local community by teaching about the local environment and exploring local environmental issues. Some studies also made connections to regional and global communities, increasing the scale of relevance for participants.

- Place-based approaches enabled learners to explore the local environment and relevant issues.[2, 3, 4]
- Many of the programs connected to the local community by developing or strengthening partnerships with local universities, colleges, and schools; local government agencies or local offices of state, regional, and federal government agencies; and local nonprofits and citizen groups, among others.[5]
- In cases where partnerships were not possible, community connections were made by working directly with local decision makers, environmental professionals, community activists, and/or other community members and stakeholders.[6, 7, 8]

For example, a pilot study of the program "Survive and Thrive" was delivered by the local fire brigade to primary school children in Victoria, Australia, through the school curriculum. Results suggest the students valued the knowledge and skills they gained in sensing wildfire risk and knowing which civic organizations would respond.[9]

In Norway, students experienced challenges in exploring a proposed development in an area that might support threatened birds. While they enjoyed conducting interviews with local experts, they believed the decision had already been made and their efforts were in vain. In addition, the messiness of real-world investigation conflicted with their well-honed instinct to find "the right answer."[10]

> **"The use of real-world environmental problems within the local community, the school community, and the family gave students a context in which to immediately practice the course concepts."**
>
> David Ampuero, San Esteban City Department of Education, San Esteban, Chile, et al.[11]

Figure 1. Environmental education practices and foci that support development of civic engagement.

PRACTICE #2

Engaging learners in participatory and experiential approaches

In the reviewed studies, participatory and experiential approaches enabled learners to discover local problems, practice with potential solutions, and engage with local resource people who were involved as stakeholders. Opportunities for reflection, thinking, and action frequently followed experiential learning. Strategies for engaging learners in participatory and experiential approaches included the following:

- using field trips,[12, 13] drama- and art-based activities,[14] writing exercises,[15] and service learning;[16, 17] and
- involving community stakeholders to highlight local issues, communication, and inquiry through specific strategies such as participatory action research[18] and participatory research.[19]

For example, a rural school program in Michigan, USA, blended civic education and environmental stewardship through community work. As a part of the Great Lakes Stewardship Initiative, schools formed partnerships with local organizations and students took part in engaging place-based education such as a beach cleanup and water quality monitoring. Meetings with decision makers to discuss their concerns empowered these sixth graders to consider how policy could protect ecosystem health. The program increased students' environmental sensitivity, environmental behaviors, community attachment, and confidence in capacity for civic action.[20]

PRACTICE #3

Including action-taking as a key program component

Many of the sample studies featured an action project benefiting the broader community as a defining feature or the goal of the program. Because natural resources, such as water, air, and wildlife, are common-pool resources that provide ecosystem services, there are community benefits to most environmental action projects. Working collectively to improve the health of common-pool resources meets one definition of civic engagement. Specific examples of action projects included these:

- an agroforestry project that set up tree nurseries and planted native species;[21]
- a letter-writing campaign that encouraged a water management agency to address water pollution;[22]
- a citizen science project that collected and shared data about marine resources;[23] and
- an education campaign that included designing and implementing efforts to decrease bottled water consumption.[24]

This case study of science teachers engaged in socio-scientific issues revealed that students exhibited a range of commitment to student-led research-informed activism. One of the most active examples involved three students who tested water for trace chemicals and determined that tap water and bottled water were not significantly different. They then launched a campaign to encourage other students in their school to drink tap water from stainless steel bottles.

When trying to incorporate action-taking into project activities, educators need to be aware of the following difficulties, which were mentioned in one study:[25]

- conflict with principles of conventional education where the learning content and curricula are predetermined, and/or educators have little autonomy or flexibility;
- issues of power and empowerment, with potential tension between what the educators wish the participants to do and what participants view as their preferred course of action; and
- lack of time and resources, resulting in a truncated program of learning about action and developing a plan but not carrying out any action.[26]

PRACTICE #4

Supporting the development of lifelong cognitive skills

Most studies focused on developing cognitive skills because of their roles in supporting environmental action. Examples of cognitive skills developed in the sample studies included critical thinking, problem solving, systems thinking, and decision-making. The sample studies used a variety of activities and processes to develop cognitive skills. Some of the activities and processes described included the following:

- One study in Scotland developed 12-year-old students' critical thinking and social skills through educational drama activities when the teachers worked directly to guide students in reflection and articulation of ideas.[27]
- Another study used guided controversies and writing prompts to help non-major undergraduate students develop problem-solving skills.[28]

University instructors in Brussels, Belgium, added real-world experiences to an undergraduate business course to increase competencies needed to contribute to sustainable development. Students worked in interdisciplinary teams to generate solutions to challenges experienced by businesses in the region or worked with stakeholders to address poverty and a lack of social interaction in an urban neighborhood. In a reflective survey, students reported that they improved their abilities in interpersonal, systems-thinking, anticipatory, and normative competencies.[29]

> **"Through analysis of environmental dilemmas that concern them, the students gained practical experience in environmental citizenship."**
>
> Noa Avriel-Avni, Ben Gurion University et al.[30]

PRACTICE #5

Providing opportunities for ongoing meaningful social interactions

Civic engagement can be relatively straightforward, developed through a process such as bringing adults together and providing ways for them to interact and develop shared values and understanding around issues important to them. They can practice democratic skills such as discussion and organization. Some studies intentionally brought together participants from different communities to increase awareness and respect, or to leverage social and collaborative learning.

Programs in classrooms created opportunities for meaningful social interaction and knowledge co-production using a range of processes and structures such as debates, group work, peer-based learning, communities of practice, and learning communities.

- Adult volunteers in Portland, Oregon, benefited from opportunities to interact with each other and work collectively on trail building or establishing native plants in the local parks.[31]
- Interactions among people who hold different perspectives and worldviews provide an important set of benefits. Public dialogue sessions about climate change were designed to bring people together who would normally not have a chance to listen to each other. Feeling respected, learning about climate science, and learning about different perspectives contributed to the event being a productive and comfortable experience.[32]

- Debates, group work,[33] and peer-based learning[34] were also strategies that programs used to increase participant interaction and engage in collaborative learning.
- Learning about the environment brought Jewish and Arab students together in a joint exploration of the outdoors and environmental action. Students discussed a conflict between development and conservation in local natural areas, spoke to various stakeholders involved in the conflicts, participated in debates, and engaged in community action. In the process they also learned about each other's community. By the end of the project, students demonstrated a better understanding of local environmental issues and changed their initial perceptions of their counterparts, which reduced prejudice.[35]

"The changes in the students' beliefs about their project counterparts' knowledge, awareness and behaviour could underscore the potential of multicultural socioenvironmental projects in reducing prejudices in culturally diverse groups."

Iris Alkaher, Oranim College of Education, et al.[36]

Conclusion

In recent years, researchers have used simple measures—such as voter turnout—to document the steady decline of civic engagement across the United States. This decline is unfortunate since the benefits of improved civic engagement are well known. This juxtaposition creates a highly compelling case for developing programs that enhance civic engagement. Concurrently, environmental education practitioners and researchers increasingly note the co-benefits and shared interests between environmental and civic education because both focus on positive avenues to addressing today's sustainability challenges. Through the Stanford team's systematic and thematic review of environmental education and civic engagement outcomes, our hope is that the five described themes will assist educators, policymakers, funders, and others in better designing and supporting new or improving existing programs to meet these dual goals. Purposefully addressing civic engagement can strengthen democracy, build social cohesion, and enhance equity and sustainability in our communities. For additional guidance on environmental education program development and management, see the resources available through NAAEE's National Project for Excellence in Environmental Education. For more information about program evaluation, please visit NAAEE's online database of evaluation strategies, the research and evaluation learning module, and the environmental education workbook for practitioners.

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