

Environmental Education Strategies That Support Positive Youth Development



Researchers at Stanford University analyzed 60 articles in the peer-reviewed literature that describe outcomes of environmental education programs that also support young people as they develop and build the attitudes, values, and skills key to becoming successful adults.¹ Known collectively as positive youth development (PYD), the goals of building these attitudes, values, and skills are often the focus of after-school activities, such as clubs and sports teams, that include opportunities for socializing.² One of the most frequently discussed PYD frameworks is known as the 5 Cs, which refers to competence, confidence, connection, caring, and character. The 5 Cs have been examined through several large research studies.³

PYD speaks to the need for educators to assist young people in the transitional phase from childhood to adulthood. Where in the past extended families and neighbors might have taken more responsibility for watching out for young people, some suggest that working parents, distant relatives, single parents, frequent moves, and fewer community ties may now make youth more vulnerable to a range of stressors.⁴ Various after-school and out-of-school programs, including clubs, sports, and youth groups—in addition to in-school activities—now address this gap for some young people, with programs designed to nurture youth as they grow.

The Stanford team asked two questions in their review: 1) What PYD outcomes of EE programs are reported in the literature? 2) What EE strategies appear to support PYD outcomes? Their analysis found the following strategies have been used in EE programs and have been associated with PYD outcomes:

1. Meaningful relevance and place-based approaches
2. Youth-centered or youth-led activities
3. Opportunities for teamwork and collaboration
4. Action strategies
5. Natural, outdoor settings
6. Explicit direct instruction in complex skills
7. Interdisciplinary programs that incorporate culture, art, and life skills with environmental science

In some cases, those programs and activities may focus on the environment. Environmental education (EE) programs can help fill this niche as some goals are explicitly shared by PYD and EE, such as developing confidence in one's abilities, building skills, and contributing to the community.⁵ Some EE programs intentionally address PYD goals, while others may have important objectives that just happen to coincide with those of PYD. Findings from the Stanford review study suggest that EE programs can be designed to help youth develop into responsible, active, and healthy adults—goals that are aligned with those of PYD.

The following strategies and EE programs demonstrate how these aligned goals might be achieved. They provide insights for educators who may wish to assess their EE programs for PYD outcomes, and they offer ideas for funders and policymakers who may be interested in supporting EE offerings designed to make PYD outcomes more likely.

STRATEGY #1

Design programs to make meaningful, relevant connections for young people, such as through place-based approaches.

Environmental educators have long known that the local environment is a key factor in engaging young people. Research on place-based education suggests that immersion in the local landscape and building environmental aspects into academic assignments can increase students' interest and excitement for learning. Such activities can also build pride in the community and enhance connection to the nearby environment.⁶ The local environment is usually more accessible to educators and more familiar to young people. Educators can use these settings to make information more relevant to the lives of learners.

- Elementary school-aged children in Athens, Greece, explored ideas about their urban environment and decided to share possible actions to enhance the city by creating a book for the Municipality of Athens and organizing a performance for students, teachers, parents, and municipality representatives. Researchers found that the project, and the way the program evolved, enhanced students' confidence.⁷
- A two-week, community-based program in Costa Rica was offered to small groups of high school students during their school holidays. Field trips, interactions with mentors, and opportunities to learn about careers in ecology and ecotourism created a learning environment that didn't feel like school.

Survey and interview data suggest that the program increased students' engagement with environmental issues, development of their perceptions of social relationships, and engagement with environmental leadership.⁸



- An international opportunity enabled 30 United States high school students to travel to Dhaka, Bangladesh, to visit residents, learn about the impacts of climate change, tour a mangrove forest, and work with local students on service-learning projects. Through interviews, reflections, and observations, a researcher studying impacts of this program found that living and working with people who directly experienced negative impacts of climate change helped make climate change more tangible for and important to participants. Being in Dhaka helped students make meaningful connections to climate change and to the people experiencing severe impacts. Although the problems and people at the center of this program were on the other side of the planet, students recognized how their actions at home affect people in Bangladesh. These connections helped increase their sense of responsibility for climate change.⁹

STRATEGY #2

Develop programs that are youth-centered, rather than leader-centered or, even better, that allow young people to lead in decision-making.

Positive youth development builds young people's perceptions of themselves and their abilities. Environmental education programs that enable youth to engage, discuss, manage group activities, and make decisions help build youth skills to engage and lead. By sharing authority, learners grow. These skills can be practiced through role playing and cooperative learning exercises. Leader-centered programs and teacher-centered classrooms, in contrast, maintain leader or teacher control. When young people complete a project or activity in which they have had leadership roles, they are often proud of their results and can better reflect on their growth.

- The year-long Mindshift program in Nova Scotia, Canada, uses peer learning to build young people's action competence. The program's goals include systemic, long-term, sustainability actions such as enhancing community engagement, building demonstration areas, and making public presentations rather than undertaking individual pro-environmental behaviors. Sustainability actions require intentional decision-making and, often, teamwork and critical thinking. Researchers evaluating the program considered peer education as a potentially powerful way to shift the social norm toward civic engagement.

"I learned that I could put myself in a situation that I never thought I would do and I can actually succeed in it. ... I never really took part in something before that really made me ... go out there and do something."

Youth Participant, in the Mindshift program.

In the Mindshift program, older students (16- to 18-year-olds) are trained to deliver a one-hour dramatic presentation to grade 10 students. The older students work together throughout the school year to practice their presentation and conduct other events. They reported significant changes in their own environmental lifestyle habits, such as conserving

resources; a greater sense of empowerment and desire to take collective action; and increased skills, such as leadership, teamwork, and public speaking. For some youth leaders, the experience involved a change in their self-concept and the way they interacted with the world.¹⁰

- An evaluation of the Eco-School program in the Czech Republic suggested that students participating in the school-based problem-solving program developed action competence skills, perhaps because they had more opportunities to practice decision-making or gain self-efficacy, which helped enhance their skills.¹¹



STRATEGY #3

Include opportunities for teamwork and collaboration in programs.

Encouraging and supporting young people to work in teams has several important benefits. It helps them gain group process skills and verbalize what they are learning, which strengthens their understanding. Additionally, depending on the task and how the groups are organized, young people can gain communication and leadership skills. If the task is challenging, they can also develop a sense of collective efficacy from the experience of achieving more together than they could alone.



- The 4-H contest, Wildlife Habitat Evaluation Program, engages teams of young people as they learn about wildlife management. Some contest elements require the teams to develop and present a management plan. As the young people prepare for the contest, team members gain communication, decision-making, and leadership skills, all of which contribute to positive youth development-related outcomes.¹²
- Middle- and high-school students in Singapore participated in an environmental science field study program to understand organic farming and design an eco-village. By working in groups, students gained knowledge, strengthened relationships within the team, and developed respect and care for each other's perspectives.¹³
- In London, England, the Green Talent program brought together unemployed youth to build shelters from fallen branches in an urban forest, which helped them recognize their ability to work in groups. A program evaluation revealed significant improvement in the participants' confidence and understanding.¹⁴

STRATEGY #4



Incorporate action strategies and action-taking into programs.

Environmental education's objectives of skills and participation¹⁵ make clear that engagement in social change requires skills that need to be taught and practiced in the supportive environment of an educational program. Environmental educators have struggled to determine how to most effectively offer such opportunities without advocating, leading, and inculcating learners with their own preferences for solutions. A great number of programs have struck this balance by helping learners explore multiple perspectives on an issue, focusing on a non-controversial community need, and asking learners to develop educational materials that communicate the program and potential solutions to others. The process of action-taking is invaluable. Young people learn skills, become empowered, and often learn how to work with others to solve problems.

- In Colorado, high-school students made a short film on climate change impacts in their community during an informal science education program. Researchers found that participating in this process helped young people develop confidence in their understanding of climate change as well as enhance their sense of responsibility to take action on climate change. The personally meaningful connections made during the place-based exploration of their own community helped inspire and empower students toward action.¹⁶

- A participatory research project in Portugal engaged seventh- through ninth-grade students in discussing and exploring environmental problems as part of a citizenship education program. Classroom sessions helped familiarize the students with water pollution concerns and then directed groups of students to create an Instagram account to share photographs related to water in their community. After learning about environmental research projects, students identified individuals and organizations that might be responsible for addressing local problems. Students then created posters to share their knowledge with others in the community. The program provided young people with many opportunities to chart their own path, including selecting the issue of concern, identifying the responsible actors, and choosing the solutions to suggest in their poster. They recognized the actions that they, as individuals, could take to improve their environment and suggested ways that local officials (school and municipal staff) could lead efforts to make change. Participants increased their self- and collective efficacy for problem solving.¹⁷

“You supported us in the decisions that we took together. When you disagreed you would say, “What if we tried this?” and then in the end we would all agree, but it was not that you had decided everything. You helped us take the right path.”

Youth Participant of the Green Committee in a Montreal elementary school.



- Classroom representatives in a diverse elementary school in Montreal, Canada, formed a Green Committee and met throughout the year to explore, analyze, and act on an environmental issue of concern. Most students in this school have at least one parent born outside Canada, and half of the households in the school district live below the low-income line. The Green Committee sessions were designed to support immigrant youth in sharing their ideas and making decisions. The young people took pictures of problems and solutions on their school grounds and were guided to consider a school-wide survey to ascertain preferences for a project. Their activities earned a \$1,000 grant for landscaping and improving the school's image. The students developed an understanding of the power of their activities as they planted the new landscape together. They gained skills and increased community pride in their school.¹⁸





- Findings from a set of case studies in five schools in Arizona demonstrated that taking part in environmental education activities, such as the development of a school garden, for example, can engage Indigenous youth in learning science, but also can emphasize responsibility and sustainability. Reflection on and attention to their Native American culture was found to contribute to a sense of belonging, as well.¹⁹

“The Native American youth who were given early exposure to place-based and environmental education had a positive impact on environmental sustainability in their community.”

Sudarat Tuntivivat, Srinakharinwirot University in Bangkok Thailand, et al.

STRATEGY #5

Conduct at least a portion of the program in nature-rich, outdoor settings.

Many environmental education programs occur outdoors. Nature centers, residential camps, and green schoolyards can make it easier for young people to learn about the environment. And being outdoors can provide additional benefits. A review of research of experiences in nature suggests that youth undergo an increase in mental attention that can boost academic success, support personal development, and enhance environmental stewardship.²⁰

- In London, England, the environmental education program Green Spaces, Learning Places (GSLP) creates opportunities for students to learn about and engage with nature-rich areas, such as parks, gardens, and forests, in their communities. Program

evaluators who observed young people engaging with nature in these settings found that they enjoyed the experience, had fun, and felt safe. Moreover, the evaluation demonstrated that the youth improved their confidence, connection to nature, involvement, understanding of the value of green space, and wellbeing.²¹



- Residential, field-based environmental education programs have demonstrated that young people develop social skills as they learn, interact, and explore nature-rich settings with their peers. An evaluation of four- and five-day residential EE programs suggests that a connection to the natural, outdoor space was a key factor in the participants' personal growth. Based in the Golden Gate National Recreation Area, the program participants spent their days hiking, completing science labs and art projects, and visiting historic areas. By asking students to write blog entries before, during, and after their residential environmental education experiences, researchers encouraged participants to reflect on their experiences and the value of what they learned. The participants' blogs described their experiences with nature and some reflected on challenges, such as struggling on hilly hikes or by being away from home for the first time. Their ultimate success built a sense of empowerment, independence, and self-reliance.²²

STRATEGY #6

Provide explicit direct instruction in complex skills such as decision-making, systems thinking, and problem solving.

Some important and essential skills for both environmental literacy and positive youth development—such as decision-making and systems thinking—are not typically addressed in schools or at home. Some environmental education programs have recognized this gap and worked to incorporate those skills into their curricula and activities. These more complex skills tend to be most easily adopted if they are explicitly and purposefully taught.

- A program engaged Mayan women from Guatemala in learning sustainable agroecology practices and developing specific life skills through participating in classes, field trips, workshops, and reflective discussions to, for example, make jam and soap and plant trees. The one-month residential program made an important contribution to the individuals, their families, and the local environment. Participants recognized that, although they had knowledge of some of these skills before, this program helped with learning how to implement them. The act of doing, with peers, was essential.²³
- A study in Cypress explored the development of decision-making strategies among 11- and 12-year-olds. Four 80-minute lessons with web-based elements were presented that taught the young people how to consider and weigh various criteria to make a decision that pitted ecological, social, and economic factors against each other, as is typical of many current environmental issues. The program deepened participants' reasoning about their decisions and tapped values associated with morally right actions.²⁴

“Students have to learn to develop solutions that represent a compromise between economic, ecological, and socioeconomic dimensions, which includes establishing a value hierarchy. The ability to weight decision criteria and to disclose underlying value considerations may be an elaborate way to work with multifaceted socio-scientific issues.”

Demetra Paraskeva-Hadjichambi, Cyprus Centre for Environmental Research and Education, et al.

STRATEGY #7



Create interdisciplinary programs that incorporate culture, art, and life skills with environmental science.

Good educators know that lessons and concepts are learned more easily if they are interesting and meaningful. In every group of children, individuals vary, such that using a range of teaching strategies and approaches will be more likely to succeed in reaching and resonating with each person. Culturally responsive education recognizes the importance of acknowledging and respecting the different foundations and assumptions that young people bring to an educational experience.

- Storytelling, photography, and drama helped 9- to 12-year-olds in Greece analyze and articulate their ideas about their community and, particularly, their hopes for the future. Working together to create a vision for their future community helped enhance the participants' self-confidence.²⁵
- School gardens, visits from elders, and lessons in traditional food preparation were part of a program to build sustainability and life skills among Native American youth. By emphasizing the local culture, the program helped to strengthen community bonding and supported development of Navajo values of respect, responsibility, and service.²⁶



Conclusion

Many of the strategies described, typically used in environmental education programs, have also been demonstrated to support positive youth development-related outcomes. To learn more about developing effective environmental education programs, please see the Guidelines 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.

“For the action model in this study, the emphasis was not on the chosen actions but on the attainment of self-confidence. Through the educational programme, I tried to ensure children’s active participation in the choice of the actions. Action does not have to be huge and spectacular, but something that children can support and participate in. Action in the frame of this action model is only another step in the path of empowerment, a way of gaining self-confidence aiming at emancipation. ”

Irida Tsevreni, University of Thessaly in Greece

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