



Jian-An Eco-school. Photo: Alex Russ

Highlights

- Case studies demonstrate real-life programs and show how theory applies to practice.
- Case studies from around the world can inspire future and current educators to advance environmental education in their schools and communities.
- By exploring case studies that focus on environmental education, educators can analyze and critically reflect on program design, implementation, and assessment.
- Case studies can be used in university courses, educator professional development workshops, and self-guided learning.

Learning Through Case Studies

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Introduction

People are natural storytellers. We tell stories to make sense of the world around us, to better understand events and ideas, and to connect to each other. When we share stories, we are helping each other gain insight into real-life situations. Stories can be one of life's most influential teachers, shaping our values, providing new perspectives, and even shifting social norms.

Telling stories through case studies can be a powerful way to help people learn new concepts. Case studies can take different forms, and the stories embedded in them may be told in a variety of ways—by individuals sharing their professional experiences through narratives, for instance, or as more structured descriptions that highlight a particular program challenge or teaching approach. While some case studies focus on events that unfold chronologically in a particular location,¹ others examine goals and outcomes to help us understand the impacts of specific educational activities. Case studies also show how programs reflect the social, economic, and political factors that influence them.²

A **case study** is a systematic or narrative description of a real-world environmental education activity, event, curricula, program, or organization, which can be used for professional development of environmental educators.

In the field of environmental education, case studies show how abstract concepts can take shape in practice.³ For example, concepts like “place-based” and “learner-centered” become more tangible and understandable when we see them implemented in real life.

This chapter discusses case study learning processes and goals (Figure 1).

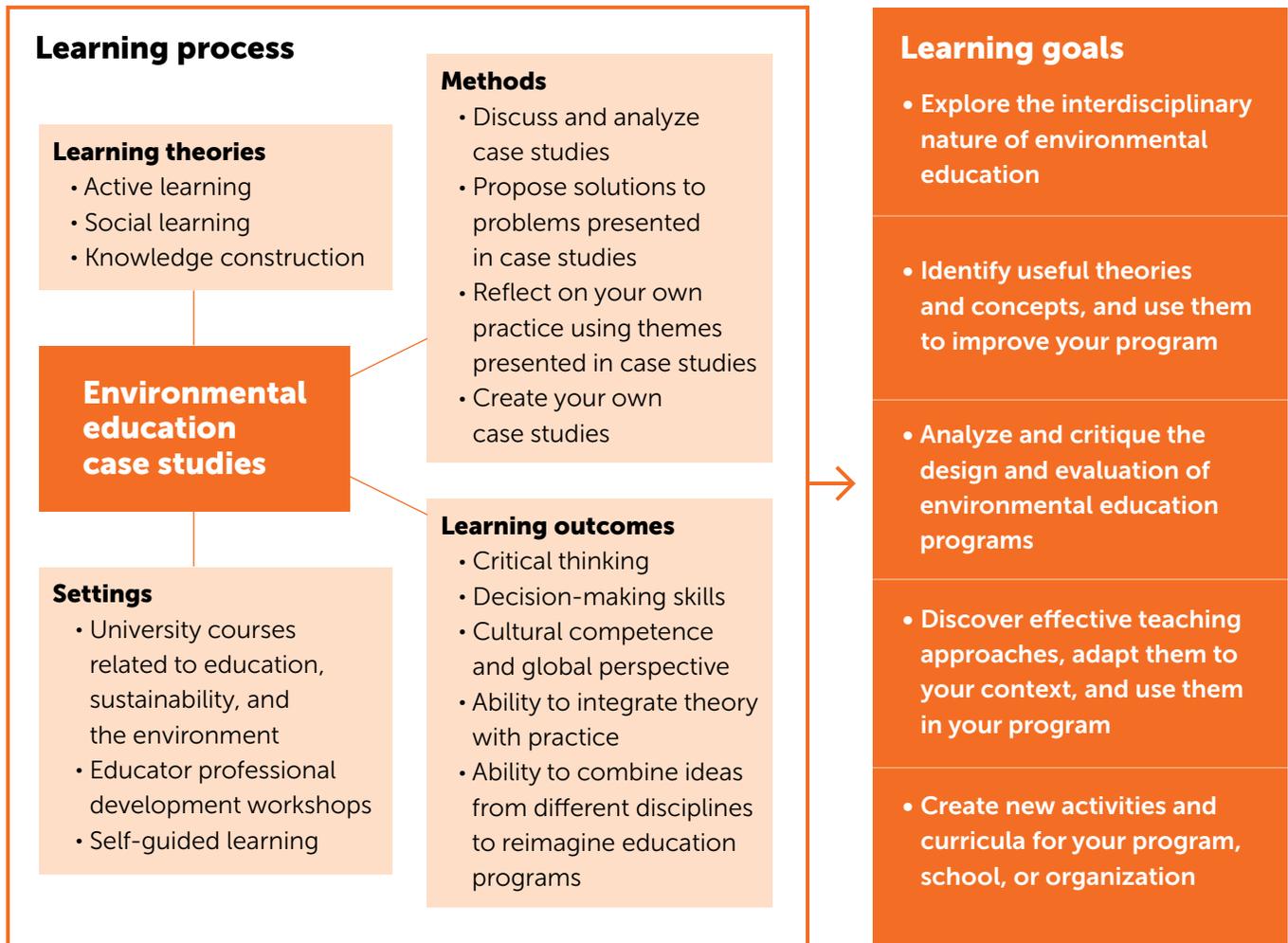


Figure 1. Case study learning processes and goals

Find inspiration around the world

Environmental education happens in many places—inside and outside of school, in the home and community, online and in person—and case studies reflect this diversity. Case studies can take us to Australia, where a world-renowned zoo improved their programming to **better address conservation issues**, to India, where an NGO partnered with several agencies to **develop an interactive climate education train exhibit that traveled across the country**, or to the United States, where **learners collected air quality data and used it to suggest improvements in their city**. Although the geography, culture, and curricula influencing each of these case studies is unique, by studying these stories, we can identify the shared concepts that shape the programs they present.

As the field of environmental education evolves, case studies can help us keep pace by reflecting changes in our environment, in societies throughout the world, and in educational theory and approaches. They allow us to examine different facets of the field and adapt existing pedagogical ideas to strengthen our own practice, and explore educational approaches that address the needs of specific student populations. Below we discuss case study learning goals (see Figure 1) in more detail.

First, case studies can help us explore the **interdisciplinary nature** of environmental education. Programs in the field can creatively integrate multiple disciplines, drawing on elements of environmental psychology, conservation, systems thinking, equity, art, public health, and of many other disciplines. [NatureWise: Dutch Children’s Learning In, About, For, and By Nature](#) is a dynamic example of this integrative approach.

Case studies can also help environmental educators **identify useful theories and concepts** that they can use to improve their programs. Many programs described in environmental education case studies illustrate various behavioral and other social theories. This case study, [Building Capacity for Sustainable Action Through Inquiry, Experiential Learning, and Collaboration](#), offers an example of how theoretical concepts are implemented in real life.



Student project as part of the Student Action for a Sustainable Future program.
Photo: Shannon Dyck

By exploring case studies, we can also learn more about program **design, implementation, and evaluation**. Case studies can demonstrate how programs may:

- Support short-term learning outcomes, such as promoting pro-environmental behavior or creating better social norms (see [Popularizing an Environmental Education Program: A case study of the eco-picture diary in Yokohama city, Japan](#))
- Promote equity and inclusion (see [This is Indigenous Land: An Indigenous land-based approach to climate change education](#))
- Build partnerships with organizations from multiple sectors of society (see [Spreading Climate Change Literacy on Wheels: Science Express Climate Action Special](#))
- Support ongoing educator professional development (see [Students and Teachers Restoring a Watershed](#))
- Use different evaluation techniques (see [Eco-Schools Northern Ireland: Empowering young people through an environmental education framework](#)), which can be adapted to other contexts

Case studies can also help us discover **effective teaching approaches** that have a positive impact on participants of environmental education programs and communities. For example, educators who want to incorporate Indigenous or traditional ecological knowledge into their curriculum might draw from the [Land and Water program](#) case study, which examines a land-based education program in Manitoba, Canada. Similarly, we can explore a case study describing how environmental education became a key component of [Taiwan’s formal education system](#) as we work to incorporate environmental education in formal education settings in our own communities.



Students learning through the Science Express program.
Photo: VACSC Ahmedabad

Finally, by analyzing case studies, we can be inspired to create **new activities and curricula** for our own environmental education programs. The Global Environmental Education Partnership (GEEP) [website](#) features environmental education case studies from numerous countries—studies that present a broad spectrum of programs and examine their goals, contexts, and audiences. These environmental education case studies can be used in university courses, in professional development workshops, and in self-guided learning.

Learning theories

Case studies can be an effective teaching tool for us as we work with current and future environmental educators.⁴ Case studies can be an effective tool for professional development of current and future environmental educators.



Active learning refers to instructional approaches that actively engage participants in the learning process; one is not simply passively absorbing information.⁵ Active learning can strengthen problem-solving skills, promote an interest in lifelong professional development, and enhance an individual's ability to grapple with messy situations in real-life settings.⁶ Some examples of active learning approaches include problem-solving exercises, group discussions, and role playing.⁷



Social learning is the process of learning, along with peers and instructors, through discussions and other shared experiences.⁸ By exploring environmental education case studies with others, we can help each other uncover and challenge our assumptions, identify and understand our knowledge gaps, and challenge the values and norms that shape environmental education.⁹ Social learning can help individuals become productive and contributing members of the larger community of environmental educators.



Knowledge construction refers to building one's own system of knowledge beyond what is explicitly taught by instructors.¹⁰ By comparing multiple case studies, we can deepen our understanding of the interdisciplinary nature of environmental education. By gaining the broad exposure offered by various case studies, an individual can create their own mental map of how environmental education is connected to behavioral science, environmental psychology, social justice, and other fields. By exploring case studies through teamwork, we can build our own systems of knowledge¹¹ and enhance our understanding of environmental education theory and practice. As we investigate case studies together, we can add to our individual insights and deepen each other's understanding.

Photo: GEEP professional development session



Teaching methods

Instructors can use a number of specific methods to help current or future educators explore case studies. These methods include **discussion and analysis**, **problem solving**, and **reflection on your own practice** (see Figure 1). These methods can be effectively used in many professional development settings and university courses.

Discussion and analysis actively engages groups, led by an instructor, in case study exploration. To facilitate discussion and analysis, instructors can ask individuals to identify key characteristics of a story, event, or organization, and determine central environmental and social issues or dilemmas presented in a case study.¹² Instructors can also ask participants to examine the overarching concepts that shape a program, including underlying theories, policies, outcomes, and goals. Through guided discussions and analysis, groups can discover which general principles and concepts of environmental education are reflected in (or missing from) a case study.¹³ Groups can also investigate how environmental education programs may support core goals of environmental education: building environmental knowledge, understanding the complexity of social-ecological systems, making informed decision-making, and ultimately, contributing to a healthier environment.¹⁴ Workshop or course participants can also hypothesize how an existing environmental education program might be adapted for different settings, or propose how a new program could be developed in the future,¹⁵ and determine the strengths and weaknesses of these scenarios. Instructors can guide discussion and analysis using a variety of techniques including, for example, the **flipped classroom**, **jigsaw**, or **interrupted case method** approaches.



Flipped classrooms. Individuals prepare for a discussion on their own by reading a case study, as well as any related materials such as interviews, program evaluations, or recorded lectures. Later, they discuss and analyze this case study together in the classroom.¹⁶ By asking students to read materials at home, instructors reserve in-class time for active learning.



Jigsaw. In class, students receive different parts of a case study,¹⁷ such as a program description, curriculum, list of expected outcomes, or evaluation results, as if each part is a piece of a larger puzzle. After studying their individual pieces, they get together to discuss and combine all the pieces. This approach encourages students to collaborate with each other as they learn about how all of the elements of a case study interrelate to form a cohesive narrative about a program.



Interrupted case method. Instructors reveal a case study piece by piece, and students work in groups as detectives to identify and solve problems in an evolving story.¹⁸ Instructors can reveal sections of a case study in two or three steps, with discussions and problem-solving sessions between these steps. This approach is particularly effective for case studies that depict a linear progression of events.

Solving real-life problems described in case studies encourages students—both current and future environmental educators—to deeply engage with ideas put forth in a program.¹⁹ They can analyze factors that shape the described program and influence stakeholders, and then formulate potential solutions to problems the case study presents.²⁰ Students can work individually or together to generate alternative solutions²¹ and discuss the benefits, risks, and obstacles inherent in each solution. Instructors can assist by introducing educational theories that could inform problem solutions.²²

Case studies can also motivate us to **reflect on our own practice**. By reflecting on real-life issues presented in case studies, we build our capacity to articulate problems and improve our environmental education programs.²³ This is true for current educators and for students striving to become educators alike.

Finally, drawing on knowledge they gain by exploring case studies, students and professionals who are already active in the field can **create their own case studies** that document their programs. By creating case studies describing their own practice, educators may uncover their programs' strengths and weaknesses, and they can share the richness of their programs with collaborators, peers, and funders.

Case studies for skill building

Learning through case studies helps us enhance measurable skills, including critical thinking and decision-making. These learning outcomes are important assets for all environmental educators who want to build effective programs (see Figure 1).

Critical thinking in case study learning is systematic, self-correcting, and purposeful thinking.²⁴ An important component of critical thinking is skepticism,²⁵ which prompts one to question whether presented information is fact or fiction, to think of alternative explanations, and to assess the credibility of sources and examine biases. Students can develop healthy, useful skepticism as they analyze and interpret case studies, participate in structured discussions, and define and solve problems presented in the examples they are examining.²⁶ Through case study discussions, students can practice any of the six dimensions of critical thinking.²⁷

Six Dimensions of Critical Thinking

- **Interpretation** (categorizing, decoding significance, clarifying meaning): Describe experiences, judgments, beliefs, rules, or procedures demonstrated in case studies.
- **Analysis** (examining ideas, identifying arguments, analyzing arguments): Explore and analyze the relationships among concepts, descriptions, statements, questions, evidence, and unstated assumptions.
- **Evaluation** (assessing claims and arguments): Assess the credibility of statements, descriptions, representations, and judgements.
- **Inference** (querying evidence, considering alternatives, drawing conclusions): Consider information in a case study and articulate consequences (conclusions or hypotheses) that follow from it.
- **Explanation** (stating results, justifying procedures, presenting arguments): Clearly and convincingly justify the reasoning you applied to reach your conclusions about a case study.
- **Self-regulation** (self-examination, self-correction): Develop a habit to monitor your own thinking, challenge your assumptions, self-correct your biases, and reconsider your judgement.



Photo: GEEP professional development session.

Case study learning can also enhance **decision-making**, which is an important skill for anyone who wants to create, implement, and improve environmental education programs. Case studies support the development of decision-making skills by demonstrating how other educators make decisions in ambiguous situations, interpret and use evaluation results, and refine program activities and goals according to changing needs.²⁸

Through learning with case studies, we can gain additional skills and competencies that benefit our work as environmental educators,²⁹ including:

- **Cultural competence:** Understanding and respecting various cultures and the relationship between cultural diversity and environmental education
- **Global perspective:** Understanding an environmental education program within a larger context of global educational and environmental efforts
- **Ability to apply theory to practice:** Recognizing applicable social and environmental theories and using them to develop learning activities and measure outcomes
- **Using interdisciplinary ideas:** Combining ideas from different disciplines and frameworks to create new environmental education curricula and new teaching approaches

Conclusion

Case studies are a powerful learning tool for current and aspiring environmental educators who take university courses, participate in professional development programs, or engage in self-guided learning. Through case studies available on the GEEP website or offered by other educational organizations, you can explore environmental education programs from around the world and reflect on your own practice. Environmental education case studies can show us different perspectives on familiar concepts, facilitate active learning, strengthen our critical thinking skills, and help us create effective and engaging programs.

Endnotes

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