

## What is experience-based learning?

### Background

---

Experiential learning is a well-known model in education. Kolb's Experiential Learning Theory (Kolb, 1984) defines experiential learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience."

**Kolb's Experiential Learning Theory** presents a cycle of four elements

1. Concrete Experience
2. Reflective Observation
3. Abstract Conceptualization
4. Active Experimentation

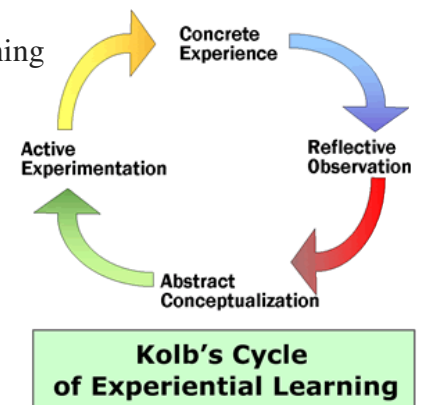


image by Karin Kirk

The cycle begins with an experience that the student has had, followed by an opportunity to reflect on that experience. Then students may conceptualize and draw conclusions about what they experienced and observed, leading to future actions in which the students experiment with different behaviors. This begins the cycle anew as students have new experiences based on their experimentation ([Oxendine, Robinson and Willson, 2004](#)). Although this continuum is presented as a cycle, the steps may occur in nearly any order. This learning cycle involves both concrete components (steps 1 and 4) and conceptual components (steps 2 and 3), which require a variety of cognitive and affective behaviors.

### The Essential Components of Experience-Based Learning

---

[Andresen, Boud and Choen \(2000\)](#) provide a list of criteria for experience-based learning. The authors state that for a project to be truly experiential, the following attributes are necessary in some combination.

- The goal of experience-based learning involves something personally significant or meaningful to the students.
- Students should be personally engaged.
- Reflective thought and opportunities for students to write or discuss their experiences should be ongoing throughout the process.
- The whole person is involved, meaning not just their intellect but also their senses, their feelings and their personalities.
- Students should be recognized for prior learning they bring into the process.
- Teachers need to establish a sense of trust, respect, openness, and concern for the well-being of the students.

### Implications for Environmental Topics and Projects

---

Some examples of experience-based projects include role playing, service learning, internships, studying abroad, open-ended projects (guided discovery), group projects and field study. The more open-ended and non-formulaic an assignment is, the more likely

students will rely on their own experience and reflection and immerse themselves in the topic. Environmental subjects are especially suited to experience-based learning because humans play a role in just about every environmental issue. Thus using an experience-based approach to an environmental topic invites students to examine their own effects on the environment, whether positive or negative. Once students have become concretely aware of the ways in which they impact their environment, they can reflect on that and experiment with different environmentally-conscientious behaviors.

## Why use experience-based projects?

Experiential learning is a **powerful teaching tool**. While classroom lectures primarily address the cognitive domain, experiential learning involves the whole student: their cognitive, affective and physical domains ([Oxendine, Robinson and Willson, 2004](#)). The result is that students can relate to the subject matter in a way that is meaningful to their own lives.

- Experience-based projects offer a **change of pace** from traditional classroom assignments and facilitate learning for students with a variety of learning styles (Millenbah et al, 2004). Students that struggle with writing papers and completing labs may find themselves re-engaged in the course with the help of a project that draws from their own experiences. Even students who are high achievers in traditional assignments often appreciate an original format.
- Projects like this have a **lasting impact**. In a survey given to students 1-3 years after the Lifestyle Project at Skidmore College, 81% of the students reported that they had made permanent changes to their lifestyles as a result of the project [[Kirk and Thomas, 2003](#)].
- Experience-based projects can help **bring the students and the teacher closer together**. Because they are sharing aspects of their own actions and decisions, there is a personal element to this type of learning. This can be a valuable way for instructors to get to know their students, and for students to pull together as a team.

## Links to Service Learning and Campus-Based Learning

Experience-based learning shares many goals, methods and outcomes with service learning and campus-based learning.

- Learn more about using [service learning in the geosciences](#)
- Read about the pedagogy of [campus-based learning](#)

## How to use experience-based environmental projects

### Introducing the project

Because experience-based projects require that students use their own lives as the basis for the assignment, it is important to introduce the activity in such a way that it poses an inspiring challenge, rather than a mandated change in lifestyle.

Helpful strategies include:

- Create classroom discussions, role-playing exercises, debates or case studies that present the environmental topic that the project will address (such as CO<sub>2</sub> output,

energy use, or waste reduction) and look for solutions. Frequently, during the debate or discussion the concept of personal conservation or involvement will be suggested by the students themselves, making it easy to then follow up on that theme. This models the notion of "make it their own idea," which makes student participation more appealing.

- Have students perform calculations on energy use, water consumption, waste output, or greenhouse emissions. Often the calculations themselves are an eye-opener and a motivator.

Examples: [Energy, water and waste data collection worksheet](#) (Microsoft Word 100kB Jan10 06)

[Energy use Excel spreadsheet](#) (Excel 27kB Jan10 06)

[Homework assignment with simple energy calculations](#) (Microsoft Word 43kB Dec23 05)

- Use a self-diagnostic quiz for students to determine their environmental impacts. Again, the results of the quiz can be motivating and can inspire students to take action.

Examples: [Eco-rating quiz](#) (Microsoft Word 39kB Nov2 07)

[Ecological Footprint Quiz](#) ([more info](#))

Because these projects require significant lifestyle changes, it is not recommended that experience-based projects be mandatory for every student. If students feel forced into it, they may resent the assignment as a personal imposition. An easy solution is to create two separate assignments: an experience-based project and a traditional assignment such as writing a research paper. The students that are ready for a challenge and for something different will choose the experience-based option. Students that are not interested or are unable to participate in a lifestyle-based project can choose the traditional assignment.

## General Tips

---

- Keep the topic of the project active in the classroom throughout the duration of the project. Allow time for reflection, discussion and if needed, some guidance and motivation. Keep Kolb's [cycle of experience-based learning](#) in mind. Link lecture and lab topics back to the project so students can draw connections between their personal experiences and the subjects in the classroom.
- Provide generalized feedback to the whole class, along with individual feedback to each student. Because each student's experience is personal, your feedback to them should be on a personal level too.
- Do the project yourself! If you are expecting students to become personally engaged, then it's best if you lead by example. This helps establish a level of teamwork, trust and respect throughout the class.

See detailed [teaching tips](#) for the [Lifestyle Project](#).

## Feedback and Assessment

---

One way to track student progress and also provide a medium for reflective observation is through journaling. Journals are used as a means for assessing each student, as well providing them with specific feedback, guidance and motivation. Students turn in journals at regular intervals throughout the project. They report on their actions, reflect on what they've experienced and answer questions you've provided along the way. Students' journals also provide amazing insight into their lives and can be a very enriching read.

## Example Project: The Lifestyle Project

---

For a specific example of using an experience-based project in your course, see the [Lifestyle Project](#), along with the accompanying [teaching notes](#) and [journals and assessment](#) pages.