Building Capacity
From Transferring to Transforming

THE US EPA AND USDA Cooperative Extension are building partnerships that support community efforts to protect the environment. Their mutual goals are to help:

- Expand the community's capacity to improve environmental quality.

- Integrate environmental management goals with other community development activities.

- Lead to environmental improvement.

- Increase involvement of more community interests (both groups and points of view) in community environmental management activities.

How can environmental management professionals and educators choose the most effective ways to accomplish these goals? Should they disseminate information, organize conferences, or support grant activities? Is it better to emphasize outreach, technology transfer, or demonstration projects?

Each method can be effective when it is part of a planned effort based on established outreach education theory and practice. It will be most effective when chosen and implemented cooperatively with County based Extension educators and ongoing outreach programs which use these techniques.

This pamphlet briefly introduces these useful theories and techniques.

What is Outreach Education?

A first step is understanding the difference between providing information and engaging in education.

Information is not education, although education can't take place without information. Outreach education relies on the existence of a body of knowledge which is not only transferred to the individual but is instrumental in transforming the individual. In other words, the individual has to actively receive the knowledge and know how to use it.

Two research areas give some general guidance in accomplishing this transformation. Behavior Change research focuses on promoting action through teaching ideal behaviors and environmental practices. An *ideal behavior* is a single, observable action that a person must perform to reduce or help resolve a specific environmental problem. It should be determined by experts. An *environmental practice* is a series of several related behaviors that, together, could affect the environmental problem.

Diffusion of Innovation research looks at the processes involved in how and why people adopt technical innovations. It describes the roles of innovators (a US EPA environmental health researcher for example), diffusers (such as outreach educators or community leaders), and potential adopters (those who could benefit from the innovation). Together they must communicate to understand: 1) the innovation; 2) how and why it works; and 3) its advantages, disadvantages, and consequences in *specific situations*.

Research shows that innovations diffuse faster (are adopted more quickly) if they are perceived as having:

- A relative advantage over other methods in terms of economics, convenience, social prestige, or satisfaction.

- High compatibility with the existing values, past experences, and needs of potential adopters.

- Low complexity.

- High "trial-ability" before commitment is required.

- High visibility to other potential adopters.

Successful outreach programs use this model and adapt their information and methods to meet the needs and perceptions of the potential adopters.

The innovation process includes several levels of commitment and action. Potential adopters may begin at any one and will move among them freely. These are:

- Knowing that the innovation exists and how it functions.

- Forming a favorable or unfavorable attitude toward the innovation.

- Engaging in activities that lead to a choice to adopt or reject the innovation.

- Putting the innovation into use and perhaps adapting it to specific needs.

- Seeking reinforcement of an innovation decision already made or reversing a former decision.

Elements of Effective Education

If it is going to accomplish transformation, an education program must have three elements:

Information and communication This involves delivering general content, information updates, best practices, and results of research to target audiences. Delivery mechanisms vary: fact sheets, web sites, reports, news releases, displays, presentations, etc.

Skill development This covers a broad range of activities. However, successful educators must *first* learn: Who is the target audience? What are their skills, wants, and needs? How does my information build on their skills and meet their needs? How does the audience want to receive information or training? The educator then adapts the education program based on this information.

Clients become proficient in a skill through specialized instruction, modeling, practice, and coaching. Some skills may be specific applications, such as how to operate a piece of equipment or how to test soil pH. Other skills may be processes which enable clients to use information, such as critical thinking, problem-solving, decision-making, and communication.

Application is using new information, a skill, or a process to solve a practical problem. For the client, an important part of the education process is assessing the innovation's benefit, possibly modifying it to meet a specific need, and even rejecting it in favor of another, more effective strategy.

The program's goal determines your choice of education components. For example, the goal to transfer information may be met by mailing a pamphlet with factual information. However, if the goal is adoption of a target behavior, the education program must have all three components.

Environmental Education

Environmental education (EE) focuses this general educational process on natural and socio-cultural environments.

EE has a well developed history and continues to evolve as educators gain experience and refine their theories. Early definitions of environmental education were developed at several international meetings sponsored by the United Nations. The most famous was the 1978 Tbilisi Intergovernmental Conference.

A 1982 UNESCO definition, for example, says: "The purpose of environmental education is to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated citizens who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment." US EPA's definition is similar.

US EPA Environmental Education definition:

Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address these challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible actions.

Recently, environmental education literacy has been described in terms of four themes:

- Knowledge of environmental processes and systems.

- Questioning and analysis skills.

- Skills for understanding and addressing environmental issues.

- Personal and civic responsibility.

Note that environmental education applies to citizens of all ages. It has never been limited to school-age youth. It also encompasses all three educational elements: knowledge, skills, and action.

Education about the environment might address an environmental topic, problem, or issue.

Environmental topics are any subjects that can be taught and learned such as organisms, systems, events, phenomena, and processes.

Environmental problems are related to people, the environment, and their interaction. Education about a problem involves gathering and analyzing information about it then developing target behaviors for solving it.

Environmental issues are environmental problems where two or more parties cannot agree on solutions. Education involves working with stakeholders or a coalition and giving attention to techniques that support group effectiveness. The group works together to gather and analyze information and recommend policy changes.

Community-Based Environmental Education

In a three-year project funded by the US EPA, environmental education experts evaluated a wide range of theory and practice. They developed a model for combining environmental education and community education to successfully produce positive actions. This model is called Community-Based Environmental Education (CBEE). They determined that effective CBEE has four critical elements, each of which is essential to the outreach process.

Effective Community-Based Environmental Education is:

Local Addresses a locally identified issue and works toward a positive outcome.

Collaborative Works with a coalition or group, giving attention to techniques that support group effectiveness.

Informed Takes action based on information, within the context of community goals.

Active Engages the broader group by using quality education practices.

Community-Based Environmental Education is discussed more fully in another bulletin in this series: *Building Capacity – Educating for Community Action, No. 6.* The following information gathered as part of the CBEE research offers additional detail regarding the transformation process.

People are more likely to change behavior when:

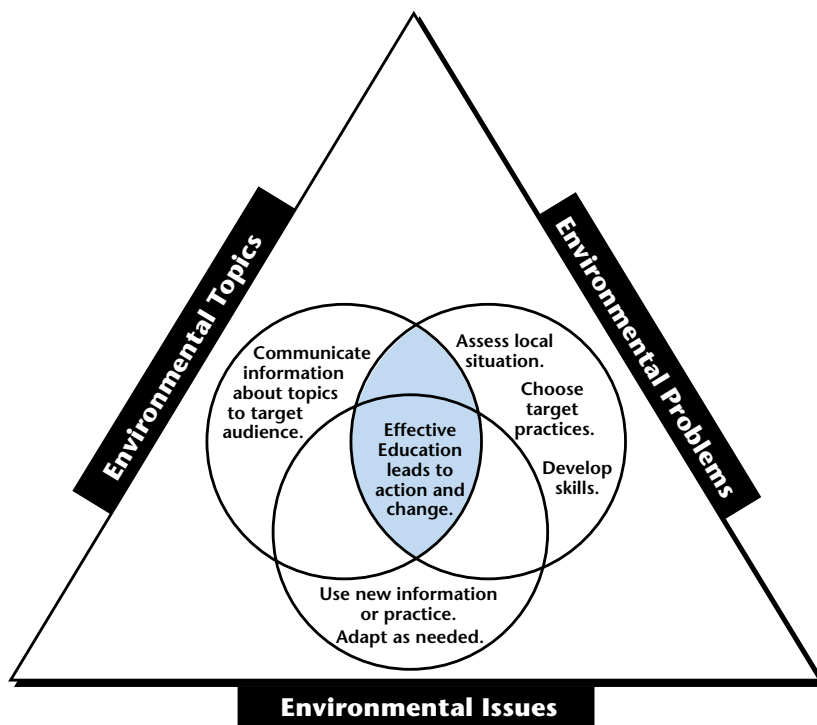They are offered **behavior choices** which:

- Provide immediate, observable consequences.
- Are similar to what people already do.
- Do not require a lot of steps or training.
- Are relatively low cost in terms of time, energy, money, and materials.

They have had a **personal discussion** with someone about the new behavior. For example a neighbor may ask if they plan to wash their car on the lawn instead of the street.

There is **peer pressure**. Others are visibly using the new behavior, such as washing their cars on the lawn.

They get an opportunity to **verbalize** a commitment to change.

They can **practice** the new behavior in the educational setting.

Triangle labeled **Environmental Topics** (left side), **Environmental Problems** (right side), and **Environmental Issues** (base). Inside are overlapping circles: Communicate information about topics to target audience. Assess local situation. Choose target practices. Develop skills. Effective Education leads to action and change. Use new information or practice. Adapt as needed.

Education messages and programs are more likely to succeed if they:

Emphasize the positive; help citizens understand how their **individual action will make a difference** rather than tell them how bad things will be if they don't change.

Take advantage of **existing social structures** to provide an avenue for new information.

Are designed to:

- Take place close to the targeted behavior.
- Relate to a specific product or topic (rather than multiple topics).
- Be eye catching, i.e. bright and humorous.
- Provide details on how to do the exact behavior required to meet objectives.
- Reach people in multiple ways: store posters, store shelf stickers, individual product information pamphlets, press releases, a speaker's bureau.

Transforming Your Program

With practice, environmental management professionals and educators can apply the CBEE educational techniques to their outreach goals. The following chart shows how CBEE would transform selected elements of an education program.

Example – Pond Management Clinic

DIMENSION	AS TAUGHT	TRANSFORMED USING CBEE
Topic choice	Made by expert	Made by group or organization
Education goals	Determined by expert	Determined by group in cooperation with expert
Audience	Pond owners or managers	Pond owners, managers and others interested in the pond or surroundings
Discipline	Pond management	Aquatic ecosystem management
Source of information	Experts	Group gathers and/or analyzes with help of expert
Domains of learning	Knowledge	Knowledge, skills for making choices, practice integrating considerations
Methodology	Lecture	Sharing experiences, inquiry, problem solving, discussion
Location	Standing on the pond bank	Moving around the pond site, stopping at various locations

Courtesy of Eric Norland, Leader, Natural Resources, Ohio State University, School of Natural Resources-Cooperative Extension

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