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A Guide to Program Planning and Evaluation

Americans care about water. For decades we have invested enormous resources—public and private, financial and educational—in improving its quality, preserving its quantity, and protecting it as a resource. A national survey in 1993 showed that concern is still vital. It found that people strongly support solutions to help ease water problems even after they have considered the associated costs.¹

Surprisingly, however, the same survey shows that individual citizens are taking little action to improve freshwater quality or to conserve the amount of water they use. Even more shocking, young people ages 12-17 neither listed water as an environmental issue they would like to know more about nor knew the basics of water information when given a quiz. The quiz is in the Resources section of this book.

Given this fundamental failure of personal action, it is no wonder there are many national water quality improvement goals that we have not attained. Recognizing this fact, the final report of Water Quality 2000, a cooperative effort of more than 80 public, private, and nonprofit organizations to develop a new national policy for US water quality and resource protection, calls for more personal action.²

“Much work remains,” this report says. “The American people, as individuals and collectively as members of the community, [must take] responsibility for protecting water resources.” The report recommends environmental education and training programs to help meet this personal action goal. It also calls for a new national water resources policy which integrates land and water resource planning and management.

These Water Quality 2000 recommendations reinforce our fundamental principle: a successful water education program is one which results in action that protects or improves water quantity or quality. This guide is based on that principle.

What do we know about youth water education programs?

Water education is not new, and, as the 1993 survey suggests, it has had some success among adults. Its apparent failure among youth is troubling, however. Concern about this lack of youth awareness prompted the Cooperative State Research Education and Extension Service of the US Department of Agriculture to ask leaders from around the country to address the question “how can we make youth water education more effective?” Youth education in nonformal settings (4-H, summer camps, etc.) was a special focus of this project because of the USDA’s long history with such programs.



This project built on work done in 1991 to collect and summarize available curriculum resources. At that time, a team of national experts developed a list of water education topics that should be covered and environmental education goals that should be met by such materials. *Educating Young People About Water: A Guide to Goals and Resources*³ reports which topics and goals are included in each curriculum. Topics and goals are also in the Resources section of this book.

Curriculum and programming gaps

When project staff evaluated the available curriculum materials against the water education topic list and environmental education criteria, they found many materials with interesting and challenging activities and some relatively comprehensive ones, but they consistently found important gaps:

- Information about water is often not integrated into an ecosystems approach.
- The study of ecology and science is usually not connected to a young person's everyday life.
- Materials often do not explain how young people can personally help improve water quality.
- Materials do not clearly show how young people can transfer investigation and evaluation skills from the school setting to personal life decisions.
- When environmental action skills are described, they frequently focus on home and school settings with little attention to the community.
- Hands-on, community action, experiential, and other nontraditional ways of learning are ignored or marginalized to "further activities" sections.
- Important topics—water related careers, home water treatment, risk assessment, and recreational use of water—are generally neglected.

However, **the most critical gap in youth water education** was revealed by a 1993 Louis Harris survey of 10,375 children in grades 4-12:⁴

Without some intervention to focus attention on environmental problems in ways that attract children, many who are interested in the environment will be deflected by other pressing issues.

The survey goes on to say: "There is a strong appetite among American children for learning about and working to improve the environment. Activities should be organized so that the children themselves make the key decisions about which problems to address, specific activities to deal with these problems, and formulation of strategy for carrying out these activities."

Successful program features

The USDA National Review Team also wanted to define success in water education programs. To do this they reviewed research studies about environmental and water education and informally evaluated existing successful water education programs. These programs, and the measures used to identify them, are described in more detail elsewhere.⁵

The research studies (listed in the Resources section of this book) suggest that successful nonformal water education programs include three key components: education, personal motivation, and predictable and rewarding structure.



Education

- the program is grounded in good science education principles
- the activities use investigation and develop scientific thinking skills
- the activities help develop critical thinking skills
- the program (or its partners) provides the knowledge base necessary for effective action

Personal motivation

- youth have the opportunity to learn and practice water management skills and to make a commitment to using those skills
- youth learn something that they can do when they get home
- youth are stimulated to take action about water concerns within their community setting
- youth develop one or more “life skills”

Predictable and rewarding structure

- the program has a reliable sponsor
- the program provides a consistent, predictable offering
- the program challenges youth and their adult leaders
- the program includes a fun/recreation component

Successful programming strategies

Evaluation of successful water education programs revealed several important programming strategies:

- consciously using the best elements of program planning methodology (see Planning Checklist sections 5 and 6)
- clearly defining ways that youth can become involved in the community and its water concerns
- offering activities that youth could do successfully given their resources and abilities
- accepting or validating the environmental management actions which the youth have chosen (even if the adults have different priorities) when proposing any environmental education effort
- evaluating the program and using those evaluations to improve the next program offering
- taking advantage of the unique qualities of water and its easy availability to make learning fun for youth and to keep them involved

Setting up a successful water education program

Using the information collected and advice from the directors of successful programs, the team developed the following list of successful water education program elements. These are designed not only to inform, but to help motivate young people to take action.

Making education natural⁶

Cheryl Charles, who coordinated development of Project Learning Tree and Project Wild education materials, encourages education planners to keep in mind seven principles of management drawn from natural systems.

- Cooperation is a natural tendency. Figure out ways to design programs that allow for cooperation to occur.
- In natural systems, energy is expended optimally. Design programs to provide time for nourishment, rest, caring for others, and reflection.
- Change is continuous. Listen to your audience and co-create.
- Organisms self-regulate. Figure out how learners can take responsibility for their learning and whether they are learning what they want to learn.
- Every organism has a niche. Every person involved in a project matters because everyone has a contribution to make.
- Diversity tends to be an indicator of health. Create a setting in which wholeness can incorporate diversity. Make sure that there is diversity in instructional approaches and in how people can share what they have learned.
- Everything is connected to everything else. No matter what you do, it will have ripple effects. Think of ways to stay in touch with other educators.



10 Success Elements

1
Goals

2
Community
water issues

3
Stewardship

4
Youth needs

5
Youth as partners

6
Community
partners

7
Organizational
support

8
Design furthers
goals

9
Effective delivery

10
Evaluation

The Planning Checklist on page 11 will help you integrate these elements into your program.

Key elements of a successful water education program

- 1 It has stated goals about water education for youth. Youth should:
 - understand basic water science and its ecology
 - be able to collect and analyze information about environmental and socio-economic conditions relevant to local water decisions
 - be able to evaluate impacts and alternatives for community decisions about water
 - be able to apply new information in the community
 - have the opportunity to practice personal water management skills and make a personal commitment to using them
- 2 It is connected to community water issues.
- 3 It helps instill a sense of place and a responsibility for stewardship of that place.
- 4 It meets youth educational and personal needs including fun/recreation.
- 5 It involves youth as full and valuable partners and acknowledges their contributions.
- 6 It involves community partners (individuals, schools, agencies, and organizations) to avoid duplication and expand impacts.
- 7 It uses the support of an organization to provide continuity and stability and to ensure high quality.
- 8 It uses program design and activities to further program goals and address community needs.
- 9 It delivers information and skills effectively, including actually using water as part of teaching.
- 10 It is evaluated on several dimensions and incorporates resulting insights into new programs.

A sense of place, stewardship, and community action

It can be a challenge for either community-based or school activities to offer programs which incorporate all of these elements of success. As partners, schools and community-based programs can each contribute their strengths to create a successful program that meets student needs. For example, classroom education can provide the foundation of science or social-science information and skills, while natural resource professionals can contribute specific and detailed information about local water resources and issues. Youth clubs may carry out community investigations which they can bring into the classroom for analysis.

Western author Wallace Stegner, says “...at least to human perception, a place is not a place until people have been born in it, have grown up in it, lived in it, known it, died in it—have experienced and shaped it as individuals, families, neighborhoods, and communities, over more than one generation.”



See inside front cover for information on introductory video: *Planning for Fun and Success!*



Developing a sense of place among youth and adults is a critical goal of water education. By identifying with the qualities of their community, people will be motivated to practice stewardship: caring for *their* natural resources. The Water Quality 2000 final report agrees: water educators must enable “people as individuals and collectively as members of the community to adopt a heightened sense of responsibility for protecting water resources.”²

Grounding water education programs in the local community allows young people to practice and apply the skills they have learned, to take actions that can make a difference to their community, and to produce results they can see themselves.

The future of the nation’s water quality and quantity will, for the most part, be determined locally. Since most communities draw their water resources from the local watershed, the decisions and actions people take related to water will affect them directly and immediately. Furthermore, actions which damage the resource, contaminate the supply, or use it up affect not just individuals but the community as a whole by changing its choices for the future.

Planning and evaluating for success

Many people involved with water education want to teach about water science, or to have fun with water, or to conduct an activity using a water resource. Our earlier publication, *Educating Young People About Water: A Guide to Goals and Resources*, may interest and help them.

This guide is for educators, community leaders, natural resource professionals, and others who want to go farther: to create a water education program which directly relates information and skills to community water issues and inspires personal action to address community needs. We offer here the best advice currently available about how to design and evaluate such programs.

To help you plan and evaluate a water education program in your community, this guide provides two detailed checklists: The Water Program Planning Checklist and The Water Program Evaluation Checklist. These offer step-by-step, expert advice to help ensure your program’s success.

Planning

Taking an organized and thorough approach to planning a program has many benefits. It helps ensure that you have thought about what you are trying to do and how you will get there. It also provides an opportunity to look at what resources your community already has available, what it needs, and what the youth want and need.

The planning process suggested here allows you to include in the decision-making other people who have an interest in the area. It can help empower and invigorate community leaders, resource managers, young people, and others who are concerned but do not know how to proceed. Planning also helps ensure that you use human and financial resources wisely and efficiently.

Evaluating

How will you know if your program is a success? Evaluating helps you know what you are doing and helps you make decisions that will improve your program. It tells whether program and financial resources are being used effectively. It also reassures your audience and cooperators that they have invested their time, enthusiasm and confidence wisely.



“If you don’t know where you are, you don’t know who you are.”

—Wendell Berry
Kentucky farmer and author

Planning Checklist
starts on page 11

Evaluation Checklist
starts on page 32



While the *Planning Checklist* helps you organize a program to include the elements of success, the *Evaluation Checklist* helps you determine whether your programs met those expectations and whether your program had an impact on the participants and the community. It also addresses performance of leaders and teachers.

Since we have defined success in a water education program so broadly (as “action which protects or improves water quantity or quality”), your evaluation may not immediately demonstrate the program’s success. However, the collective effect of community youth programs about water over several years may improve the resource enough to be measured.

Meanwhile, other parts of the evaluation process will tell you whether you have helped young people understand water and its ecology better, whether they can identify local water issues and related attitudes and values, and other elements of success.

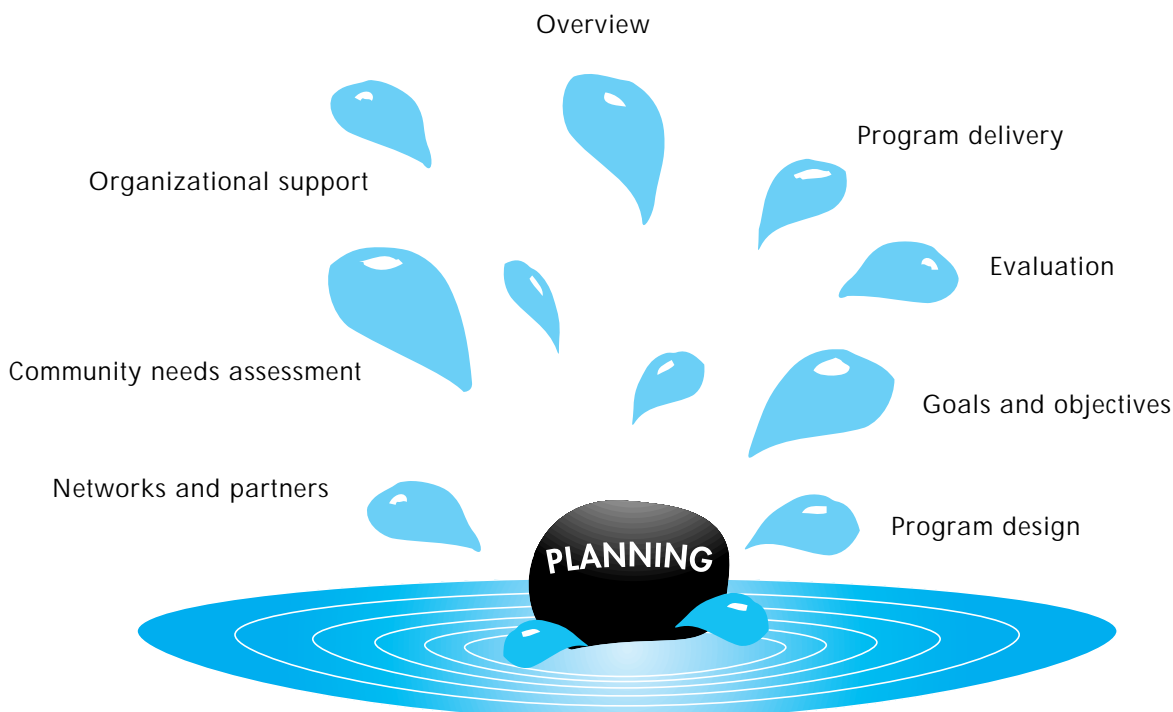
Using the checklists

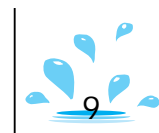
While checklists are linear—step B follows step A, creating and developing a program is often multi-faceted and simultaneous. You may have any of a number of starting points when you begin a program, and sometimes several. The process probably looks more like a map than an outline.

You can make the checklists help you by jumping into whichever section fits your needs right now. Then turn to another section as it becomes useful. Make the questions work for you. Skip, expand, or combine them as you need to.

Using the resources

This book and others in this series are full of ideas, checklists, references, partner lists, and community action education materials. We invite you to take advantage of them.





To find and select water education activities —

See *Educating Young People About Water: A Guide to Goals and Resources*. This guide introduces over 100 youth water curricula. It also lists education topics and goals, and other unique resources useful in creating a water education opportunity or event.

To develop a program strategy appropriate to your situation —

See *Educating Young People About Water: A Guide To Unique Program Strategies*. This guide provides brief case studies of 30 unique water education programs taking place around the country in a variety of settings—after-school clubs, summer programs, museums, nature centers, festivals, and campaigns.

For a sample community action guide —

See *Give Water a Hand*. These books walk youth through the process of identifying local water resource needs and creating an action project in cooperation with local resource managers.

To link water education to community action —

See the list of organizations in the Resources section of this book. These government agencies and private groups actively support youth water education and helped develop *Give Water a Hand*.

To link school programs to community water concerns —

Find or become an “instigator” (see below) who forges links to community partners and identifies community or school-ground natural settings where students can practice and reinforce skills taught in the classroom. Natural resource professionals and youth club leaders can bring the results of community investigations to the class for analysis.

Managing for success: the role of the “instigator”

A great idea is not enough to ensure a great program. Enthusiasm and concern must be accompanied by leadership and legwork. Someone must be the “instigator”—the one who makes things happen. If that person is you, here are some key things you must do to get the program going and keep it going:

- Find out who is doing what and using which resources in educating about your topic. Make sure you don’t compete or repeat.
- Thoroughly evaluate and understand your community’s water education needs and concerns. Use experts. Don’t rely on just your personal understanding or local popular impressions.
- Collect information. Find experts, locate and enlist partners.
- Create or link with a network of partners who have the same community-based water education goals.
- Forge a connection to a stable organization active in the community.
- Organize planning sessions with partners and keep them going until you agree on goals and objectives.
- Provide educational materials. Make sure they fit the audience and the goals.
- Keep the network or partners on task so the project accomplishes its goals



See inside front cover for information on introductory video: *Planning for Fun and Success!*



- Set up systems to:
 - Evaluate the program
 - Celebrate its strengths
 - Fix its weaknesses
 - Continue it in the future

Here is an example of how one person became an instigator.

In Florida, where salt-free water may be in short supply, a County 4-H Extension agent made this issue part of her youth outreach program. As part of the University Cooperative Extension county system she has many years of experience in designing programs and has established credibility with other community groups.

She researched water conservation needs and potential solutions by contacting the local water utility and university experts. Then she contacted a summer youth day camp which was willing to incorporate her program as a theme program if she provided the instructors.

Choosing education activities based on the community goal of reducing water use through conservation, she hired and trained her summer staff using a small grant from the utility.

After the program ended, she and her staff contacted the families of selected youth participants. They found that a substantial number of youth had shared conservation tips with their families. Many families had installed a water conservation device (provided by the day camp) on the kitchen faucet and had tried other ideas for saving water while bathing, cleaning teeth, or using the toilet.

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1. *Water: A National Priority, Americans' Attitudes Toward Water Quality and Availability*, conducted from the National Geographic Society by The Roper Organization, Inc., November 1993.
 2. *A National Water Agenda for the 21st Century*, final report, Water Quality 2000, 601 Wythe Street, Alexandria, Virginia, 22314. (See Resources at the end of this book for excerpts.)
 3. *Educating young people about water: a guide to goals and resources with an emphasis on nonformal and school enrichment settings*, Elaine Andrews and the Cooperative Extension National Review Team, USDA, Cooperative Extension, December 1992, University of Wisconsin-Madison, Environmental Resources Center, 216 Agriculture Hall, 1450 Linden Dr., Madison, WI 53706.
 4. *Children and the Environment*, a survey conducted for the Pew Charitable Trusts by Louis Harris and Associates, 1993.
 5. *Educating Young People About Water: A Guide to Unique Program Strategies*, Kelly Jo Warren, 1995, and *Educating Young People About Water, Thinking About Program Strategies That Work!* A Symposium Summary, Columbus, Ohio, December 1993. Both are available from the ERIC Clearinghouse for Sciences, Mathematics, and Environmental Education.
 6. Presented as part of a key note speech during the symposium, "Educating Young People About Water. Thinking About Program Strategies that Work! Emphasis on the nonformal setting." Columbus, Ohio, 1993.