My Environmental Education Evaluation Resource Assistant or "MEERA"- A Web-Based Resource for Increasing Environmental Educators' Evaluation Capacity

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Outline

➢ **What is environmental education?**

➢ **Why a web-based evaluation "clearinghouse"?**

➢ **How did we develop MEERA?**

➢ **Review of MEERA's features**

➢ **"Successes" to date**

➢ **What's next?**

Question/Answer

What is environmental education?

Outcomes: Knowledge, Attitude, Skills, Behavior

Impacts: Environment, Education, Health

Settings include: In, out /after school

Professional development

Free choice learning

Why MEERA?

Are environmental education (EE) programs making a difference?
What are the characteristics of successful EE programs?

➡ **Environmental educators do not have necessary**
      knowledge/resources

➡ **Many relevant resources are available**
      Google (6/08) search:
      "evaluation"   208 million
      "environmental education evaluation"   5,680
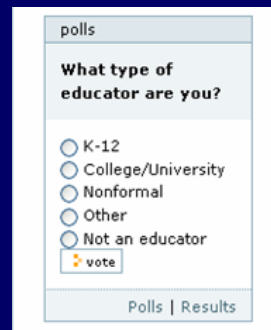
What makes MEERA unique?

Principles

- Build on existing resources

- Be selective rather than comprehensive

- Meet the needs of educators with range of evaluation experience

- Focus on program evaluation with emphasis on measuring outcomes

- Provide enhanced usability

How did we develop MEERA?

➢ **Existing resources and relevant research**

➢ **Project partners**

➢ **Steering committee members**

➢ **MEERA visitor monitoring**

polls

What type of educator are you?

○ K-12
○ College/University
○ Nonformal
○ Other
○ Not an educator
▹ vote

Polls | Results

Type of educator

What type of educator are you?

K-12	▬	12.69% (25 votes)
College/University	▬▬	19.29% (38 votes)
Nonformal	▬▬▬▬▬	46.70% (92 votes)
Other	▪	7.61% (15 votes)
Not an educator	▬	13.71% (27 votes)

Total votes
197 people have voted on this poll.
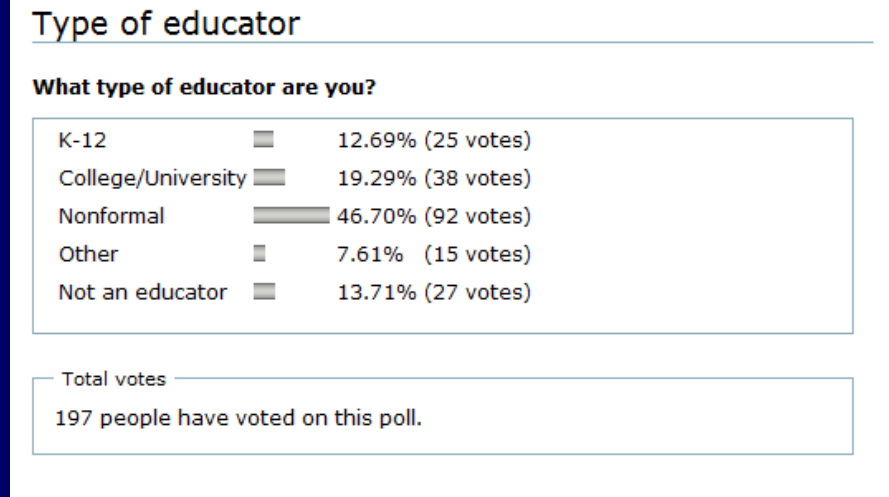
➢ **Formative evaluations with EE professionals**

Sample formative evaluation

Feature: "Plan and implement EE program evaluation"

Convenience sample of 13 reviewers:
- government 46%, university 31%, NGO 15%, other 8%
- 11 years experience with environmental education
- Evaluation experience: none to more than one

Questionnaire with closed and open-ended questions

MEERA's Features
www.meera.snre.umich.edu

- Learn about evaluation and its importance

- Move through the evaluation process step-by-step

- Obtain suggestions on related evaluation topics

- Search through sample EE evaluations

- Review additional evaluation resources

Home Page

Welcome to MEERA!

Planning and Implementing an EE Program Evaluation
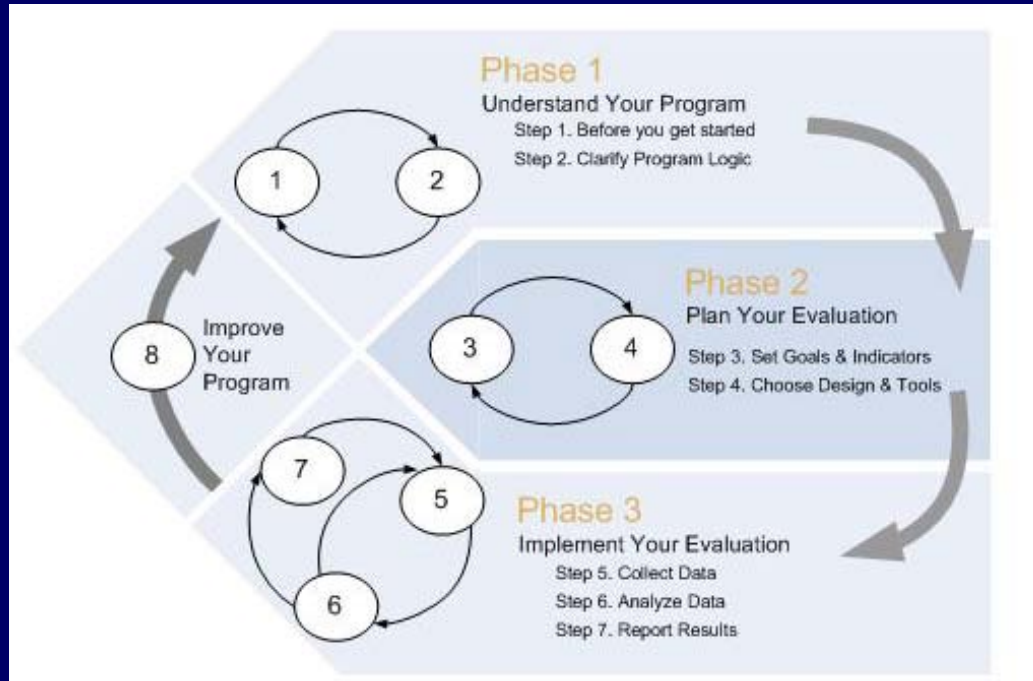
← Move through evaluation process step by step

Learn about related topics:

➤ Finding an external evaluator

➤ Obtaining approval for evaluation

➤ Conducting participatory evaluations

Planning and Implementing an EE Program Evaluation

Overview

Q&A Format

EE Examples

Planning and Implementing an EE Program Evaluation

Links to additional select quality evaluation information and resources for those with different levels of evaluation experience

What does an IRB application include?

A typical IRB application includes:

- Basic information, such as who is involved in the study, dates, and the type and purpose of the research
- Description of the study design
- Description of costs and risks to subjects
- A conflict of interest statement
- Information on how data will be stored
- Confidentiality agreement (which may instead be included in consent forms or on questionnaires)
- Availability of research results
- Informed consent documents, parental consent form, and assent form if minors are involved
- Final drafts of data collection instruments such as questionnaires and interview guides

Unique Resource

Are you working for a federal agency? If so, you are likely to need approval for your evaluation from the Office of Management and Budget (OMB).

Check out these two approved applications to get a sense of what may be required:
Evaluation of NOAA's Bay Watershed Education and Training (B-WET) Programs (.pdf)

Evaluation of the NOAA Coastal Services Center's Coastal Services Magazine and the Coastal Connections Newsletter (.pdf)

Courtesy of Anita Kraemer, eeEvaluations and the U.S. National Oceanic and Atmospheric Administration (NOAA)

While applying for IRB approval may be an inconvenience, remember that it is often required by law and is critical in protecting the rights of both yourself and evaluation participants.

Is IRB approval always required?

You may not need IRB approval if your evaluation poses minimal or no risk to participants. By federal law, you may seek exemption status if:

- Your evaluation is conducted in a commonly accepted educational setting and assesses regular educational practices, such as:

1. research on existing or potentially new instructional strategies, or

Only IRB can determine if your evaluation is exempt!
TIP

Even if you suspect your evaluation meets the criteria for an exemption contact your IRB to confirm that your evaluation qualifies.

Unique Resources

Tips and Pitfalls

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MEERA's Searchable Database of EE Program Evaluations

Browse or search evaluations by text –or- advanced <u>program</u> and <u>evaluation</u> search terms

MEERA's Searchable Database of EE Program Evaluations

Summary

Choose relevant evaluation based on an overview

MEERA's Searchable Database of EE Program Evaluations

Profile

Program
- What was evaluated?

Evaluation
- How were results used?
- What did it cost?
- What were evaluation "lessons learned"?

MEERA's Links and Resources

EE Specific Evaluation Guides (4)

- **Evaluating EE in Schools: A Practical Guide for Teachers.**
  Bennett, D.B. (1984). UNESCO-UNEP.
  Beginner   Intermediate
  Available at:
  http://unesdoc.unesco.org/images/0006/000661/066120eo.pdf

  One of the first guides written on EE evaluation, this resource provides timeless advice for planning your evaluation, implementing it, and making the most of your data. Particularly useful are Bennett's "action verbs" for developing measures of knowledge and understanding, thinking skills, and action skills. The guide also provides easy to understand explanations of different evaluation designs (e.g. posttest only vs. pretest and posttest), instrument types, and research methods. Step-by-step instructions for collecting and analyzing data help readers avoid common mistakes.

- **Does your project make a difference? A guide to evaluating environmental education projects and programs.**
  Department of Environment and Conservation, Sydney, Australia. (2004).
  Beginner
  Available at: http://www.epa.nsw.gov.au/community/projecteval.htm
  Information in this guide is laid out in an easy to digest manner, making it very user-friendly for evaluation newcomers. In addition to describing important considerations in each step of evaluation, "Does your project make a difference?" uses hypothetical case studies to help readers think through the logic of their programs, the types of questions they might ask about their program's impact, and how those questions can be measured using indicators. The guide also provides an "Outcomes Hierarchy Framework Template" for planning evaluations, which some readers may find easier to complete than traditional logic models.

- **Designing Evaluation for Education Projects.**
  NOAA Office of Education and Sustainable Development. (2004).
  Beginner
  Available at:
  http://wateroutreach.uwex.edu/use/documents/NOAAEvalmanual

Reviews of How-To Guides

➢ **For EE & other contexts**

➢ **Direct access to guides**

➢ **Recommended for different levels of evaluation expertise**

➢ **Descriptions of unique aspects of each**

MEERA's Links and Resources

Environment Related Resources (3)

⊕ Digital Library for Earth System Education (DLESE)
Tools Guidance
Searchable Database

This site features resources to assist educators and developers in providing quality Earth system science curricula and programs. The Evaluation and Assessment portion of the site features the Evaluation Toolkit, a searchable database of articles, reports, and resources related to planning and implementing Earth system science evaluations.

⊕ EPA Public Involvement – Feedback and Evaluation
Instruments
Searchable Database
Environmental Protection Agency

This section of the EPA's Public Involvement site features questionnaires used in various public participation settings as well as a database of nearly forty evaluations conducted of EPA public involvement activities.

⊕ Place-based Education Evaluation Collaborative
Instruments
Searchable Database

PEEC is a partnership between several nonprofit organizations concerned with place-based education. The Tools section of the site provides actual instruments used by the partners in their evaluations as well as links to resources on other websites. To see examples of actual evaluations, look at the Reports section.

Data Analysis Tools (3)

⊕ Using Excel for Analyzing Survey Questionnaires
Guidance
University of Wisconsin-Extension

This guide, provided by University of Wisconsin-Extension, is helpful for those unfamiliar with data analysis. It provides step-by-step instructions for using Microsoft Excel to: Create a database of responses, Code data, Display frequencies and percentages, Calculate average(mean), range, standard deviation, etc., and Create crosstabulations/pivot tables.

⊕ Open Stat
Tools

Open Stat is a free software package for performing statistical analyses. It is relatively simple to use and you can paste in data from Microsoft Excel. There are some quirks in the functionality, but it supports a variety of simple to complex analysis procedures (Frequencies, T-Test, ANOVA, Multiple Regression, Factor Analysis, etc).

Reviews of Additional Evaluation Resources

➤ **Evaluation tools**

➤ **Data collection instruments**

➤ **Evaluation guidance**

➤ **Searchable databases of evaluation resources**

MEERA's Home Page

Tips for navigating and using MEERA →

Firefox browser works best
←

MEERA's "Successes" so far: Visitors

MEERA Monthly History Visit Summary
(May '06 - May '08)
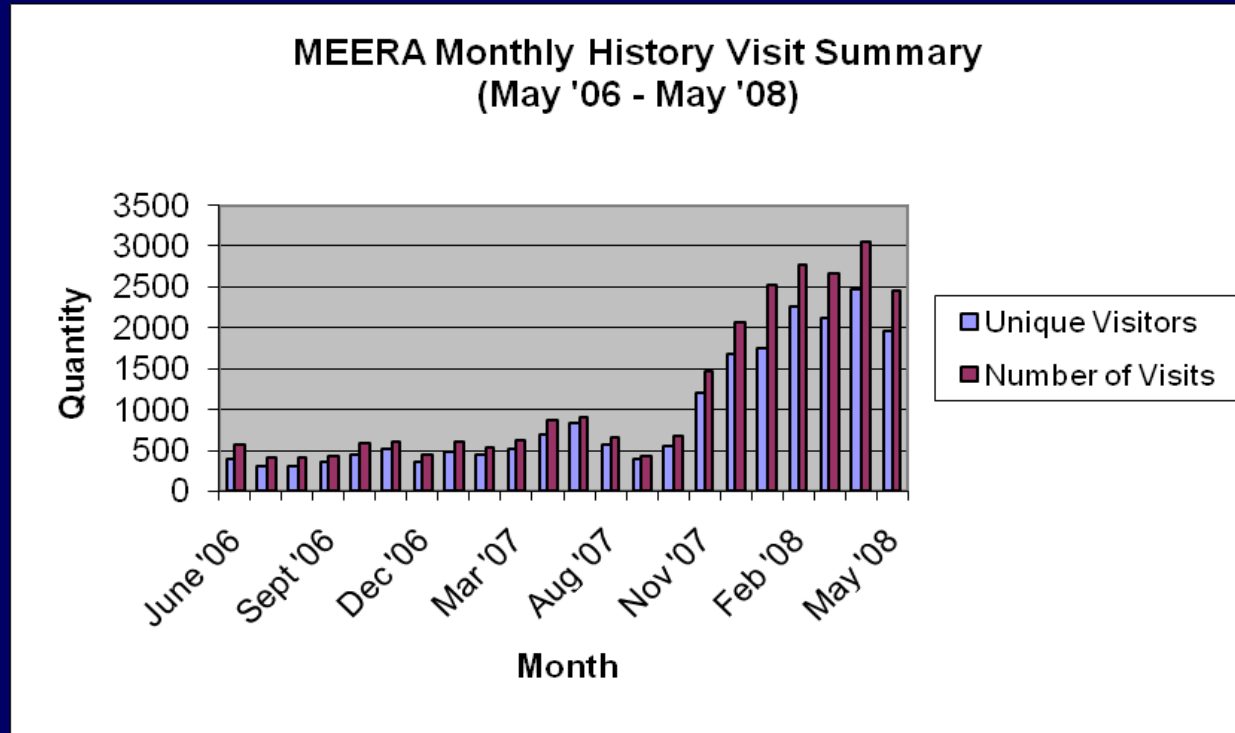
➤ **Number of visitors:**
   Initial "word of mouth" ~   300-800/month
   After U.S. EPA RFP   ~ 1,700-2,500/month

➤ **Many visit site more than once per month: mean=1.3**

MEERA's "Successes" so far: Visitors

➢ **Many bookmark MEERA:**
   28% before, 50% after RFP

➢ **Many international visitors:**
   mean=46/month between June '06 and May '08

Google (6/08):
   "evaluation of environmental education"= #1
   "MEERA"= #2

MEERA's "Successes" so far: Formative Evaluation Results

Of 13 recent reviewers of the planning and implementing pages:
- ➢ all will recommend MEERA to other educators
- ➢ most rated MEERA as very helpful with mean=6.23 on 7 point scale

"MEERA is an exceptional resource. You have created an excellent primer for planning and implementing environmental education evaluations with the value added of links to relevant, reviewed, summarized, easily accessible resources to provide the appropriate level of additional information needed for a given step and the expertise of the user. It is an incredible undertaking to provide useful and digestible information without resorting to an exhaustive laundry list of anything tangentially relevant. You also avoided the impulse to rely heavily on the same suite of comprehensive references. I expect to use MEERA and recommend it often."

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What's Next: More Evaluation

Objectives:

➢ Determine MEERA's ability to enhance evaluation capacity

➢ Improve MEERA

➢ (Assess MEERA's potential value as a model)

➢ 5 FS environmental educators will use MEERA to evaluate one their programs by following MEERA's evaluation "steps"

➢ Each will develop a series of evaluation outputs and respond to questions related to developing /completing this output/step

➢ If needed, each will be provided with additional assistance

What you can do …

➢ **Visit MEERA at <u>www.meera.snre.umich.edu</u>**

➢ **Let others know about MEERA, link to site**

➢ **Share evaluations of EE programs for database, other evaluation resources (see** **)**

➢ **Share your ideas on:**
   - how MEERA can be improved
   - MEERA' next evaluation

European Approach to Building Environmental Evaluation Capacity

Thank You!

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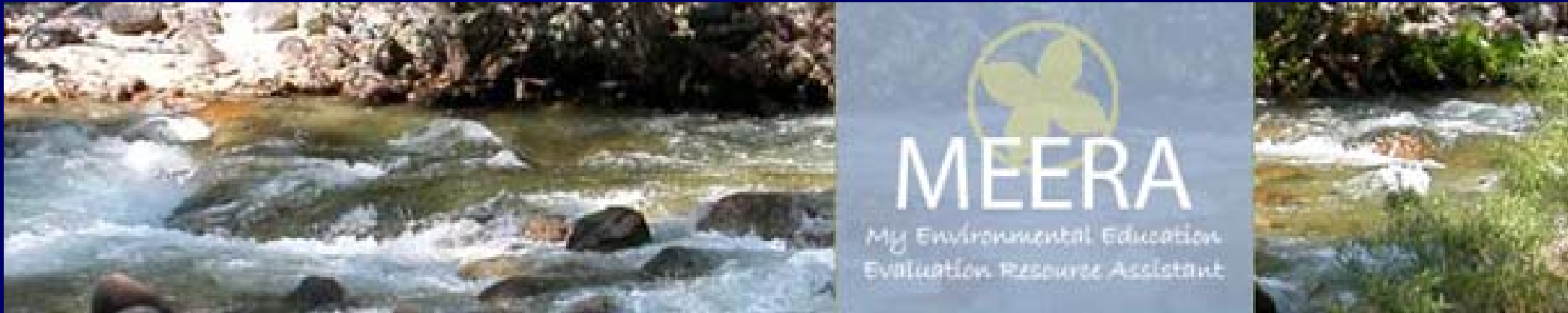
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Questions & Discussion

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