

Designing EDUCATION PROJECTS

Evaluation Report of the 2007 Workshops

July 20, 2007



Submitted by:
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EXECUTIVE SUMMARY

Increasing environmental literacy is one of NOAA's crosscutting priorities. To address this priority, NOAA's Office of Education (OEd) began offering professional development opportunities for NOAA employees who have education and outreach responsibilities. The *Designing Education Projects* Workshops were developed to offer NOAA employees with education and outreach responsibilities a common understanding of the terminology, tools, and methods of needs assessment, project design and implementation, and project evaluation. This report describes the results of the most recent workshops held in April 2007 and provides recommendations for future professional development opportunities related to designing education projects.

The goals of the April 2007 Designing Education Projects (DEP) workshops were to:

- Revise the course based on recommendations from the pilot workshop;
- Implement the workshop in Norfolk, VA and Seattle, WA for NOAA employees in the National Weather Service (NWS) and National Marine Fisheries Service (NMFS), and;
- Assess participant learning, confidence change, and course effectiveness.

In addition, the objectives were that each participant at the conclusion of a workshop will be able to:

- Describe key components of the project development cycle;
- Define needs assessment and list the benefits of conducting a needs assessment;
- Identify strategies for conducting needs assessments within the context of NWS and NMFS education projects;
- Describe key steps in the design and implementation of education projects within the context of agency scope, mission, priorities and strategic plans;
- Discuss the application of logic models in the design and evaluation of education projects;
- Identify strategies for conducting evaluations within the context of NWS and NMFS education projects;

- Apply principles of project design, implementation and evaluation to a specific education project of their own; and
- Develop an action plan for the improvement of a specific education project of their own.

In order to accomplish these goals and objectives, a small advisory committee was established in the fall 2006 consisting of representatives from the Office of Education, NWS, NMFS and the contractors from the National Environmental Education and Training Foundation (NEETF) (Appendix A). Course content and materials were revised based on the feedback from the 2005 workshop. NWS and NMFS representatives recruited the attendees for the April 2007 workshops. Pre- and Post-workshop quizzes and attitudinal surveys were administered by the contractors to capture any change in knowledge and/or comfort level with the material covered in these workshops.

The following sections in this executive summary provide the key findings, recommendations, and next steps developed during the evaluation of these workshops. Details of the workshops and evaluation process are described in the remainder of the report.

Key Findings

1. The recommendations made in *Designing Education Projects: Workshop Evaluation Report* of the 2005 pilot workshop were all addressed through revisions to the 2007 workshops.
2. None of the workshop participants commit 100% of their time on the job to education and outreach projects. Additionally, their projects involve a wide variety of audiences and topics.
3. Participants in the workshops left with greater confidence in their ability to design, implement, and evaluate effective education and outreach projects than they had when they arrived.

4. Participants in the workshops left with greater knowledge about designing, implementing, and evaluating effective education and outreach projects than they had when they arrived.
 5. Participants generally viewed the style, organization, facilitation, and content of the workshop to be very beneficial, although they had suggestions for how to shorten the length of the workshop.
 6. Repeatedly, the participants stated that the workshop was tailored to their needs (e.g., the focus on NOAA, NOAA programs and processes, and the focus on applying content to their specific projects).
 7. All workshop participants indicated that they would recommend the workshops to others and that they intend to apply their new skills to current projects.
 8. Participants appreciated the opportunity to network with peers from other offices within NOAA in addition to those from within their own line office.
 9. Overall, participants were very satisfied with the workshops, viewed them as useful for improving their education projects, and left the workshops feeling prepared and motivated to apply what they had learned.
4. In order to create a community of learners and practitioners of the material and methods presented in the workshops, ways to provide attendees with mechanisms to continue as a learning community beyond the days spent in the workshop should be developed.
 5. Mechanisms for supporting and encouraging regional collaborations among participants should be developed and evaluated.
 6. Follow up with workshop participants to determine: if specific workshop objectives were met, and how participants are using the course materials, case studies and the skills they developed in the workshops.

Recommendations

1. Continue to offer workshops in the future to educators¹ across NOAA including additional educators in the NWS and NMFS.
2. Analyze workshop agendas and materials to determine whether workshops would be enhanced by offering information and activities through an online format as advance preparation for in-person workshops or as a way to follow-up with participants.
3. If Recommendation 1 is to be accomplished, existing case studies should be updated and enhanced and additional case studies or examples should be developed to support these additional workshop offerings based on NOAA programs from line offices represented by workshop participants.

¹ “Educators” means NOAA employees and contractors with at least some job responsibilities related to education and outreach.

Next Steps

In order to continue improving NOAA’s education capability, the next step should be to convene a working group charged with developing a long-range plan for continuing *Designing Education Projects* workshops. Areas of consideration for the working group should include:

- Determining level of financial support and human resources needed to continue workshops in FY2008 and beyond;
- Analyzing linkages between content of Designing Education Projects workshop and the NOAA Business Model;
- Updating and printing more copies of the training manual, *Designing Education Projects*;
- Expanding workshops to additional participants and setting up a selection process for identifying participants;
- Reviewing the original plan for the workshops and revising as necessary to include roll-out of workshops to all identified audiences (staff, managers, and administrators) and a realistic time line for rollout activities;
- Devising methods and approaches to assessing behavior change (Level III evaluation) in participants as a result of participating in a workshop; and
- Developing and maintaining mechanisms (probably electronic) to support the workshop attendees as a community of learners.

I. INTRODUCTION

I ncreasing environmental literacy is one of NOAA's crosscutting priorities.^{2,3} To address this priority, NOAA's Office of Education (OEd) began offering professional development opportunities for NOAA employees who have education and outreach responsibilities. The goal of this effort is to assist NOAA staff in building needed skills in educational project design, implementation and evaluation. After conducting a needs assessment in 2004, OEd and the NOAA Education Council made a commitment to providing professional development opportunities to appropriate NOAA employees.

The resulting course, *Designing Education Projects*, was initially offered as a pilot to selected Warning Coordination Meteorologists (WCMs) of the National Weather Service (NWS) in June 2005 in Kansas City, Missouri. At the conclusion of this initial workshop an evaluation report was prepared wherein recommendations were offered. This report describes revisions to the pilot

workshop based on those recommendations, implementation of two additional workshops for NOAA employees with education responsibilities in either the NWS or the National Marine Fisheries Service (NMFS), and an assessment of participant learning, confidence change, and course effectiveness.

During the fall of 2006, NOAA OEd contracted with the National Environmental Education Training Foundation (NEETF) to revise and implement the workshops in the spring of 2007. Interest and financial support from NMFS and NWS were capitalized on and workshops were offered to both of these groups. The workshops were designed and conducted by M. Lynette Fleming, PhD and Janice Easton, MS (sub-contractors for NEETF). A small advisory committee with representation from NEETF, OEd, NWS, and NMFS provided input to the workshops. The workshops were offered in Norfolk, VA April 10-12, 2007 and in Seattle, WA April 24-26, 2007.

² United States Department of Commerce, National Oceanic and Atmospheric Administration (2006): *New Priorities for the 21st Century – NOAA's Strategic Plan: Updated for FY 2006-FY 2011*, http://www.ppi.noaa.gov/pdfs/STRATEGIC%20PLAN/Strategic_Plan_2006_FINAL_04282005.pdf; p. 14.

³ United States Department of Commerce, National Oceanic and Atmospheric Administration (2004): *NOAA Education Plan*, http://www.oesd.noaa.gov/NOAA_Ed_Plan.pdf; 6pp.

II. GOALS AND OBJECTIVES

Designing Education Projects Workshops were developed to offer NOAA employees with education and outreach responsibilities a common understanding of the terminology, tools, and methods of needs assessment, project design and implementation, and project evaluation.

The goals of the April 2007 *Designing Education Projects* (DEP) workshops were to:

- Revise the course based on recommendations from the pilot workshop;
- Implement the workshop in Norfolk, VA and Seattle, WA for NOAA employees in the NWS and NMFS, and;
- Assess participant learning, confidence change, and course effectiveness.

In addition, the objectives were that each participant at the conclusion of a workshop will be able to:

- Describe key components of the project development cycle;

- Define needs assessment and list the benefits of conducting a needs assessment;
- Identify strategies for conducting needs assessments within the context of NWS and NMFS education projects;
- Describe key steps in the design and implementation of education projects within the context of agency scope, mission, priorities and strategic plans;
- Discuss the application of logic modeling in the design and evaluation of education projects;
- Identify strategies for conducting evaluations within the context of NWS and NMFS education projects;
- Apply principles of project design, implementation and evaluation to a specific education project of their own; and
- Develop an action plan for the improvement of a specific education project of their own.

This evaluation focuses on the extent to which the workshop goals (listed above) were accomplished.

III. METHODS

Course Revisions

Course revisions were based on the recommendations offered in the evaluation of the pilot *Designing Education Projects* workshop conducted in 2005.⁴ A small advisory committee with representation from NEETF (including the course designers and instructors), OEd, NWS, and NMFS (Appendix A) worked together to implement the following recommendations:

1. Keep the course content as currently outlined, but determine the depth of coverage that is needed after each topic has been examined for its specific relevance to the NOAA audience and their potential use of that information in the field.
2. Ensure that NOAA/NWS examples that illustrate course materials are developed and used throughout the course.
3. Represent a field perspective and address how course material might be affected by federal regulations, a WCM should be involved in designing the course and, if at all possible, serve as a member of the instructor team.
4. Provide the course to more WCMs and or/others (e.g., SOOs).
5. Expand the course to 2.5-3 days or less material should be covered.
6. Give participants assignments to complete prior to the course (e.g., read the book in advance, select a project to bring to the course).
7. Offer the course in residence to provide opportunities for participants to share project design successes and failures both formally and informally.
8. Present projects developed by WCMs as a result of participating in the course as case studies to illustrate how course materials can be applied in the field and how perceived barriers (e.g., time) can be alleviated.
9. Reinforce process and terminology outlined in *Designing Education Projects* manual by those in leadership positions in order to ensure that a common language and framework are adopted within education and outreach projects.

Implementation

Designing Education Projects Workshops were offered twice during April, 2007 (in Norfolk April 10-12 and Seattle April 24-26) to NOAA employees in NWS and NMFS with education responsibilities. Participants were selected by the representatives from their line offices who served on the workshop advisory committee. Invitation letters were sent in February 2007 to 19 NMFS and 144 NWS employees; responses were required by OEd in March 2007. Generally, participants from the East Coast were invited to the Norfolk workshop and participants from the West Coast were invited to the Seattle workshop. This approach was taken for two reasons: 1) to foster interactions among participants who were from nearby geographic locations and 2) to conserve travel funds. Each workshop was scheduled for three days beginning on a Tuesday and ending on a Thursday to allow for sufficient travel time (See workshop agendas, Appendix B and Appendix C). NOAA OEd paid for travel, room and board for all invited participants and each session was limited to eight participants from each NOAA line office (NWS, NMFS). There were a total of 15 participants from the NMFS and 14 participants from the NWS. In addition, five members of OEd and three individuals responsible for education and outreach from the line offices' headquarters participated in at least one of the workshops.

Prior to the workshop, each participant was requested to complete and return responses to the Pre-Workshop Participant Survey (Appendix D), prepare a one-minute introduction slide, think of an outreach or education

⁴ The National Environmental Education & Training Foundation (2005), *Workshop Evaluation Report - June 28-29, 2005, Kansas City, Missouri - National Weather Service, Warning Coordination Meteorologists*. Washington, DC; 47 pp.

project they wanted to use as the platform with which to apply the course concepts during the workshop, be prepared to share a project they were currently implementing during a share-fare, and read sections in the course manual, *Designing Education Projects: A Comprehensive Approach to Needs Assessment, Project Planning and Implementation, and Evaluation*.

At the beginning of the workshop, each participant was asked to complete a Pre-workshop Confidence Assessment (Appendix E) and Pre-workshop Quiz (Appendix F). For the most part, the workshops followed the same agenda with few exceptions. The format of the workshop was interactive with much of the focus on assisting each participant develop a comprehensive plan for planning, implementing and assessing an education or outreach project of their choice. Participants listened to short lectures, participated in discussions, and used guiding worksheets to gain the needed knowledge and skills required to develop their program plan. At the end of the workshop, participants were asked to complete the Post-Workshop Confidence Assessment and the Post-workshop Quiz (Appendix G). The Post-workshop Quiz contained an additional section focusing on participants' satisfaction with the course. Between the two workshops, the agenda for the Seattle workshop was amended to reflect necessary changes in the order and time allocated to course content.

Data Analysis

Data related to course revisions, course implementation and course evaluation were analyzed to determine the success of each of these components of the workshops conducted in 2007. Both qualitative and quantitative methods were used for these analyses.

A. Course Revision

Content analysis of 2007 course agendas and workshop materials was conducted to determine whether the revisions were consistent with the recommendations from the pilot workshop. Open-ended responses on the Post-workshop Quiz were also analyzed to compare comments and recommendations from the pilot workshop with the current workshops. Based on comments from the pilot workshop, the following changes were made to the 2007 workshops. Following each stated change is/are the

number, in parentheses (), of the recommendation (from the pilot workshop, listed above) that this change addressed.

1. The course manual *Designing Education Projects: A Comprehensive Approach to Needs Assessment, Project Planning and Implementation, and Evaluation* was used again for these workshops. (1)
2. NOAA OEd staff provided an overview of the role the workshops have in achieving NOAA's strategic plan and how this process fits into NOAA's budgeting process. (1, 2, 3)
3. Case studies of projects currently being implemented by educators in the NWS and the NMFS were prepared as examples for the workshops. In addition, a conscious effort was made by the facilitators and NOAA OEd personnel to offer NOAA-related examples whenever appropriate. (2, 3, 8)
4. Representatives from NWS and NMFS were an active part of the workshop Advisory Committee. (3)
5. The workshops had participants from NWS and NMFS who were invited by representatives in each line office. (4)
6. The workshops were expanded to 3 days in length (Tuesday-Thursday) with a travel day on each end of the workshop (Monday and Friday). (5, 7)
7. Prior to the workshop, each participant was requested to complete a series of tasks:
 - a. Respond to the Pre-Workshop Participant Survey;
 - b. Prepare a slide to introduce oneself in one minute;
 - c. Think of a project they were currently developing that they would like to develop further during the course of the workshop;
 - d. Be prepared to share a project they were currently implementing during a share-fare; and
 - e. Read the course manual *Designing Education Projects: a comprehensive approach to needs assessment, project planning and implementation, and evaluation*. (6, 7)

8. The participants included people from NOAA leadership; NWS, NMFS, NOAA OEd. (9)

Analysis of the agenda and course materials from the 2007 workshops confirm that these recommendations were addressed in those workshops.

B. Course Implementation

Content analysis of the agenda and course materials and participant observations confirm that the workshops were implemented according to the planned agenda with few exceptions. Naturally adjustments to the timing of content occurred based on the flow of the material during the workshops. One activity was dropped from the Norfolk workshop because of logistical constraints. This activity was successfully implemented during the Seattle Workshop. Between the workshops the advisory committee met and some additional adjustments were made to the schedule.

C. Course Evaluation

Three assessments were used to gather data from course participants: Pre-workshop Survey, Pre/Post-workshop Confidence Assessment, and Pre/Post-workshop Quiz.

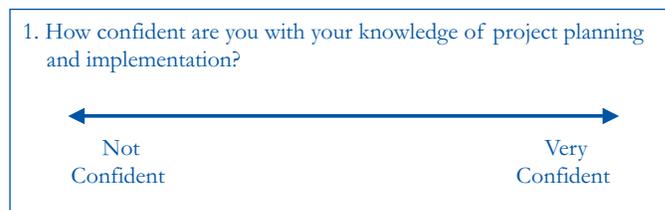
A Pre-workshop Survey (Appendix D) was sent to participants two months before the workshops. Participants were asked to share details about the role of education in their current position, the programs they typically conduct, and their experience designing education projects.

The instructors reviewed the responses to the Pre-workshop Surveys primarily to assess the experience level of the participants coming to each course and to make any necessary changes to the course material. A summary of responses to selected questions is provided in the Results section.

The responses from both groups (Norfolk and Seattle) to the Pre/Post-workshop Confidence Assessment (Appendix E) were combined for analysis. For each question, possible scores ranged along a continuum from 0 (not confident) to 40 (extremely confident). Nine questions were printed and posted around the room. Participants were asked to place a green dot on the scale indicating how confident they felt about certain aspects of the workshop (Figure 1). The posted assessment was removed shortly after the exercise was completed and a new scale was posted at the

end of the workshop. Participants used a red dot to indicate how they felt after the workshop. The scoring continuum on each response sheet was divided into increments of five and the dots in each section were counted. Histograms of responses to each question were prepared showing distributions of responses to this visual analog scale.

Figure 1. Sample question from Pre/Post Workshop Confidence Assessment:



The Pre-Workshop Quiz (Appendix F) contained 18 knowledge questions and was used to assess baseline knowledge of course participants. An independent samples t-test was run on pre-test scores between the Norfolk and Seattle workshop participants to determine if there were differences in knowledge between groups. This analysis indicated that there were no significant differences between the Norfolk and Seattle groups on the pre-test ($t(34) = -0.48, p = 0.63$). The non-significant result ($p > .05$) indicates that at the beginning of the workshop, the Norfolk and Seattle participants had similar levels of baseline knowledge. Therefore, the data were combined to assess participant knowledge gain from pre- to post-workshop. A dependent or paired samples t-test was used to compare mean scores on the pre- and post-test scores of the combined workshop participants. The assumptions for conducting independent and dependent samples t-test were met.

The Post-workshop Quiz (Appendix G) also asked participants to comment on their level of satisfaction with the workshop. Means and frequencies are reported for all scale-type questions. Content analysis of the open-ended questions regarding the strength and weakness of the workshop along with suggested improvement is also presented.

IV. RESULTS

The following results are from the three assessments used to gather data from the course participants: Pre-workshop Survey, Pre/Post-workshop Confidence Assessment, and Pre/Post-workshop Quiz.

Pre-workshop Participant Survey

Prior to attending the workshops, participants were asked to complete and return responses to the Pre-workshop Participant Survey. The majority (~2/3) of participants (n=26) committed between 25% and 75% of their work time to education and outreach activities. The remaining 1/3 of participants spent either < 25% or > 75% of their time on these activities.

The types of education projects participants are currently involved varied from education projects where the participant had multiple contacts with target audiences and provided NOAA education materials to one time contacts. Examples of these projects include:

- Non-point Education for Municipal Officials (NEMO)
- WCM Training
- SkyWarn Spotter Training
- Tsunami Hazard Curriculum and Workshops
- Hazardous Weather Awareness Events
- Kids Days
- Coral Reef Reader
- Econauts in the Estuary
- Springer's Journey
- NOAA Science Camp
- One NOAA Exhibit
- NOAA's 200th Anniversary Celebration

The target audiences reached through NOAA education and outreach projects were diverse, however they all had multiple target audiences which included both internal and external audiences. The audiences served by these projects include:

- Students from Elementary and Secondary levels
- Interns

- The General Public
- Industry Representatives
- Non-governmental Organizations (NGOs)
- NOAA Staff
- Print, Broadcast and Online Media
- Emergency Managers
- Boaters
- Fishermen
- Scientific Community

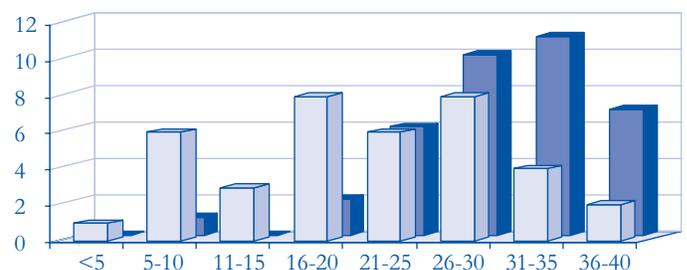
When participants were asked about their expectations for the workshops their responses focused on improving education programs, learning methods for evaluating programs, interacting with and learning from other educators, and gaining support and funding for education and outreach programs.

Pre- and Post-workshop Confidence Assessment

For the most part, participants felt more confident in their ability to plan, implement, and evaluate their programs at the end of the workshop. For each of the nine questions regarding confidence there is a positive increase in their confidence levels. Figures 2, 3, and 4 show the pre- and post-workshop confidence assessment results for the three main foci of the workshop. Possible scores ranged from 0 (not confident) to 40 (extremely confident).

Figure 2.

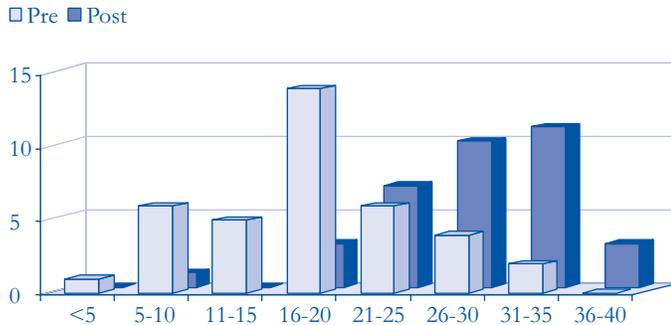
□ Pre ■ Post



1. How confident are you with your knowledge of project planning and implementation? N=38

Figure 2 shows an increase from pre- to post-workshop in participant confidence in their knowledge of project planning and implementation.

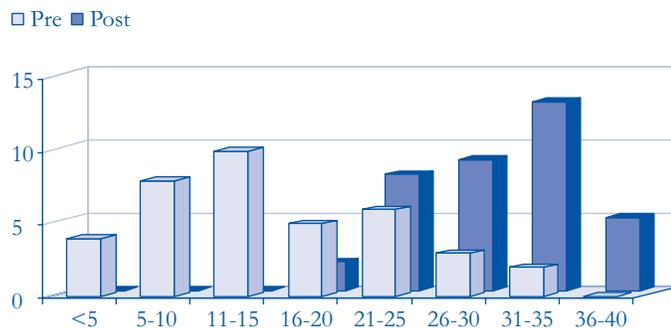
Figure 3.



2. How confident are you with your knowledge of project evaluation? N=38

Figure 3 shows an increase from pre- to post-workshop in participant confidence in their knowledge of project evaluation.

Figure 4.



9. How confident are you in developing an evaluation plan for evaluating a specific educational project? N=38

Figure 4 shows an increase from pre- to post-workshop in participant confidence in their ability to develop an evaluation plan for evaluating a specific educational project.

Results for the other six confidence items are included in Appendix H. These results show similar trends; there is a clear increase in participant confidence on all the measured aspects of course content.

Pre/Post-workshop Quiz

Mean scores for knowledge questions on the pre and post workshop quizzes were 16.26 (SD=2.5) and 19.96 (SD=1.9), respectively. A total of 36 participants completed both quizzes. The results of a dependent samples t-test shows a statistically significant gain in knowledge by the end of the workshop ($t(35)=-9.14, p<.001$) with an average increase of 3.7 points or a 6% increase in scores from pre to post.

On the post-workshop quiz, participants were asked to rate their level of satisfaction with various aspects of the course (Table 1). On a scale of 1 = Strongly Disagree to 5 = Strongly Agree, the table shows that participants agreed that the educational materials and content of the workshops were well presented and aided understanding. While some participants felt that the workshop could be better organized and should include more examples, most agreed the information provided could be used in their work.

Table 1. Participant rating of course content and material

Item 19. Please indicate your level of agreement with the following statements.	Mean Score
The educational materials and content...	
a. met the workshop objectives.	4.36
b. were organized and followed a logical order.	4.11
c. included sufficient examples.	4.17
d. helped me understand project development.	4.46
e. provided information relevant to my work.	4.37
f. was applicable for my educational and outreach projects.	4.49
g. provided information I can use in my work.	4.60

Most participants agreed that the workshop was a good use of their time and that the material was highly applicable to their work. The participants also thought that three days was an appropriate workshop length for the amount of material presented and that the content was presented at a level appropriate for their experience level.

In addition, all of the participants (n=35) indicated that they would recommend the workshop to a co-worker or colleague.

Additionally, all of the participants (n=35) indicated that they intend to apply their new skills to current projects. When asked to how they plan to apply the skills they learned in the workshops (Appendix I), the majority of respondents (21) indicated that they would strengthen existing programs or use their knowledge to develop future projects (15).

- “I will definitely be looking closer at programs that we are already doing to see if we can find some good ways to incorporate evaluation. We'll try to design new projects with evaluation tools that can help us know how we're doing and help us continue to improve our programs.”
- “Project design; using evaluation tools; using data collection tools (esp. relevant were discussion of survey and interview techniques).”
- “I have numerous, concurrent programs (both short and long term) which I will move towards this process...hopefully.”

Participants also intend to use their new knowledge and skills from the workshop by sharing with others (3), in grant writing (2), for program justification (2), assisting with the NOAA budgeting (PPBES) and assessment (PART) processes (1), applying to projects other than education (1), and engaging NOAA OEd more frequently (1).

- “Brief education and outreach staff, try incorporating development, design and implementations of projects. Use knowledge in working with collaborators inside and outside the NEFSC [NorthEast Fisheries Science Center] in implementation of education and outreach projects.”
- “[Will] help me write grants, projects and reports and think more strategically about the execution and success of my projects.”
- “PPBES, 'PART' of Tsunami program, strengthening of Tsunami Ready, Grants...”

When asked about the strengths of the workshop (Appendix J), the most frequently stated response was the opportunity for networking with other NOAA professionals (13). In addition, the knowledge and skill of

instructors (11), the quality content and materials (11), the focus on participants' projects (11), the helpful exercises/activities (8), and the opportunities for sharing ideas and information (7) were also stated as strengths of the workshops.

- “Good information about planning and assessment was provided. Good contacts and informal exchanges of ideas and techniques took place. Training greatly helped me to focus my thoughts on programs I am involved in and to plan next steps to assess program value.”
- “Knowledgeable instructors with strong training skills that were presenting useful information. It was clear that significant effort was put into making sure that the information was presented so that it was relevant to the participants work. Trainers were extremely helpful during session where participants were working.”
- “Strength was that we could work on a real project of our own to put the skills we learned into practice. Also having NOAA's OED present was extremely useful. We need their input on what makes a grant proposal and education programs successful!”

Less frequently stated strengths were the use of “real world” and relevant examples (3), having multiple instructors with a variety of perspectives and experiences (3), the hands-on helpfulness of instructors (3), the integration of material (3), the quality of facilities and food (3), the specific connections to NOAA (2), the presence of NOAA OEd (2), the applicability to funding (1), the broad applicability (1), and defining education jargon (1).

- “Nice to have perspectives of Janice, Lyn, Beth and Sarah and others with educational expertise. Having multiple 'teachers' a plus.”
- “End-to-end linkages; NOAA specific resources; Understanding education communication jargon.”
- “Lots of practical examples. Working on an actual project was very useful, and having Lyn, Janice, and Beth to consult with when I was stuck on particular tool was great. I also appreciate having the OEd folks there to give feedback on NOAA related things.”

When asked how to improve the workshop (Appendix K), several participants made suggestions regarding course

logistics; shortened to 2-2.5 days (7), add page numbers to notebook (3), and allow more time for discussion of real project successes and failures (3). Content suggestions included the addition of a more comprehensive example,

one that would follow the course concepts from beginning to end (5). The remaining responses were only mentioned once and can be gleaned from reading the responses in Appendix K.

V. KEY FINDINGS

1. The recommendations made in *Designing Education Projects: Workshop Evaluation Report* of the 2005 pilot workshop were all addressed through revisions to the 2007 workshops.
2. None of the workshop participants commit 100% of their time on the job to education and outreach projects. Additionally, their projects involve a wide variety of audiences and topics.
3. Participants in the workshops left with greater confidence in their ability to design, implement, and evaluate effective education and outreach projects than they had when they arrived.
4. Participants in the workshops left with greater knowledge about designing, implementing, and evaluating effective education and outreach projects than they had when they arrived.
5. Participants generally viewed the style, organization, facilitation, and content of the workshop to be very beneficial, although they had suggestions for how to shorten the length of the workshop.
6. Repeatedly, the participants stated that the workshop was tailored to their needs (e.g., the focus on NOAA, NOAA programs and processes, and the focus on applying content to their specific projects).
7. All of the workshop participants indicated that they would recommend the workshops to others and that they intend to apply their new skills to current projects.
8. Participants appreciated the opportunity to network with peers from other offices within NOAA in addition to those from within their own line office.
9. Overall, participants were very satisfied with the workshops, viewed them as useful for improving their education projects, and left the workshops feeling prepared and motivated to apply what they had learned.

VI. RECOMMENDATIONS

1. Continue to offer workshops in the future to educators⁵ across NOAA including additional educators in the NWS and NMFS.
2. Analyze workshop agendas and materials to determine whether workshops would be enhanced by offering information and activities through an online format as advance preparation for in-person workshops or as a way to follow-up with participants.
3. If Recommendation 1 is to be accomplished, existing case studies should be updated and enhanced and additional case studies or examples should be developed to support these additional workshop offerings based on NOAA programs from line offices represented by workshop participants.
4. In order to create a community of learners and practitioners of the material and methods presented in the workshops, ways to provide attendees with mechanisms to continue as a learning community beyond the days spent in the workshop should be developed.
5. Mechanisms for supporting and encouraging regional collaborations among participants should be developed and evaluated.
6. Follow up with workshop participants to determine: if specific workshop objectives were met, and how participants are using the course materials, case studies and the skills they developed in the workshops.

⁵ “Educators” means NOAA employees and contractors with at least some job responsibilities related to education and outreach.

VII. NEXT STEPS

In order to continue improving NOAA's education capability, the next step should be to convene a working group charged with developing a long-range plan for continuing *Designing Education Projects* workshops. Areas of consideration for the working group should include:

- Determining level of financial support and human resources needed to continue workshops in FY2008 and beyond;
- Analyzing linkages between content of Designing Education Projects Workshop and the NOAA Business Model;
- Updating and printing more copies of the training manual, *Designing Education Projects*;
- Expanding workshops to additional participants and setting up a selection process for identifying participants;
- Reviewing the original plan for the workshops and revising as necessary to include roll-out of workshops to all identified audiences (staff, managers, and administrators) and a realistic time line for rollout activities;
- Devising methods and approaches to assessing behavior change (Level III evaluation) in participants as a result of participating in a workshop; and
- Developing and maintaining mechanisms (probably electronic) to support the workshop attendees as a community of learners.

Appendix A

Advisory Committee for *Designing Education Programs* Workshops

Deborah Sliter, National Environmental Education Training Foundation (NEETF)

Bora Simmons, PhD, Northern Illinois University

M. Lynette Fleming, PhD, Research, Evaluation & Development Services

Janice Easton, MS, University of Florida

Molly Harrison, NOAA, National Marine Fisheries Service

Brian Motta, NOAA, National Weather Service

Chris Maier, NOAA, National Weather Service

Sarah Schoedinger, MS, NOAA Office of Education

Beth Day-Miller, PhD, Bridgewater Education Consulting/NOAA Office of Education

John McLaughlin, MS, NOAA, Office of Education

Appendix B

Designing Education Projects Workshop AGENDA

April 10-12, 2007 Norfolk, VA

Tuesday

- 8:30 **Get Settled – Eat “light” breakfast & do 6 things!**
- 9:00 **Welcome & Introductions**
- Designing Education Projects
 - Participants & Facilitators
 - Objectives
 - Common Vocabulary
- 10:45 **Break**
- 11:00 **Project Development Cycle Overview**
- 12:00 **Lunch**
- 1:00 **Needs Assessment Introduction & Stage 1: Planning**
- Goals & Objectives
 - Case Studies
 - Application
- 3:00 **Break**
- 3:15 **Needs Assessment Stage 2: Data Collection**
- Questionnaires, Surveys, Tests
 - Testwiseness, Problem Questions, Readability
 - Writing Questions
- 5:00 **Adjourn**

Wednesday

- 7:30 **Breakfast**
- 8:00 **Needs Assessment Stage 3: Data Analysis & Reporting**
- Quantitative & Qualitative Analysis
 - Case Studies
 - Application
- 9:45 **Share Fair & Break**

- 10:30 **Project Planning & Implementation**
- Project Goals & Objectives
 - Logic Models
 - Application: A logic model for your project
- 12:00 **Lunch**
- 1:00 **Project Delivery Considerations**
- 2:00 **Data Collection: Observations**
- 3:15 **Break**
- 3:30 **Data Collection: Interviews & Focus Groups**
- 5:00 **Adjourn, Optional tour of facilities**

Thursday

- 7:30 **Breakfast**
- 8:00 **Project Evaluation Introduction & Stage 1: Planning**
- Components of an Evaluation Plan
- 9:45 **Break**
- 10:00 **Application: An evaluation plan based on your logic model**
- 11:00 **Stage 2: Data Collection**
- Sampling & Design
- 12:00 **Lunch**
- 1:00 **Stage 3: Data Analysis & Reporting**
- 3:00 **Break**
- 3:15 **Review Implementation of Project Development Cycle**
- Final work on Projects
 - Sharing
- 4:20 **Review of 3 Days**
- 4:30 **Evaluation, wrap up, and close**
- 5:00 **Adjourn**

Appendix C

Designing Education Projects Workshop AGENDA

April 24-26, 2007 Seattle, WA

Tuesday

- 8:30 **Get Settled – Do 6 things!**
- 9:00 **Welcome & Introductions**
- Designing Education Projects
 - Participants & Facilitators
 - Objectives
 - Common Vocabulary
 - Project Development Cycle Overview
- 10:45 **Break**
- 11:00 **Needs Assessment Introduction & Stage 1: Planning**
- Goals & Objectives
 - Case Studies
 - Application
- 12:00 **Lunch**
- 1:00 **Needs Assessment Stage 2: Data Collection**
- Questionnaires, Surveys, Tests
 - Testwiseness, Problem Questions, Readability
 - Writing Questions
- 3:00 **Break**
- 3:15 **Needs Assessment Stage 3: Data Analysis & Reporting**
- Quantitative & Qualitative Analysis
 - Case Studies
 - Application
- 5:00 **Adjourn**

Wednesday

- 8:00 **Project Planning & Implementation**
- Project Goals & Objectives
 - Logic Models
 - Application: A logic model for your project
- 9:45 **Share Fair & Break**

- 10:45 **Project Delivery Considerations**
- Application: Add delivery considerations to worksheet
- 12:00 **Lunch**
- 1:00 **Project Evaluation Introduction**
- #### Components of an Evaluation Plan
- Focusing the evaluation
 - Data collection
 - Analysis and Reporting
- 3:15 **Break**
- 3:30 **Application: An evaluation plan based on your logic model**
- Case study examples
- 4:30 **Adjourn, Optional tour of facilities**

Thursday

- 8:00 **Continue work on evaluation plans [Flex time] Sharing**
- 9:45 **Break**
- 10:00 **Data Collection: Observations (Rubrics)**
- One-minute Museum
- 11:00 **Data Collection: Interviews & Focus Groups**
- #### Active listening
- 12:00 **Lunch**
- 1:00 **Application: Begin development of data collection tool(s)**
- Pilot in small groups
- 3:00 **Break**
- 3:15 **Review Implementation of Project Development Cycle**
- Sharing
- 4:20 **Review of 3 Days**
- 4:30 **Evaluation, wrap up, and close**
- 5:00 **Adjourn**

Appendix D

Pre-workshop Participant Survey

We are excited to hear that you will be joining us at the *Designing Education Projects Workshop*. As we develop the agenda, it will help us know a little more about you and your work. Please complete the following participant survey and return it to John McLaughlin (John.McLaughlin@noaa.gov, fax: 202-482-2663) by March 16, 2007. **Thank you.**

Name: _____ Email: _____

Daytime telephone: _____

Definitions

For the purposes of this survey please use the following definitions.

- Education:** At NOAA, education means a process of engaging external audiences to build knowledge on topics relevant to the world's atmosphere, climate, oceans, and coastal ecosystems in order to achieve greater environmental literacy, personal safety, and an improved economy.
- Formal education** is characterized by learning that takes place within a structured educational system in which children or adults are required to demonstrate proficiency (e.g., through testing and grading, completion of continuing education credits, etc.).
- Informal education** is characterized by learning outside the established formal system and meets clearly defined objectives through organized educational activities. This mode of education may be voluntary, self-directed (e.g., a museum or aquarium exhibit), or systematic and guided (e.g., a field trip).
- Outreach** may be thought of as referring to products or services that involve onetime or short-duration contact with the public – contact that informs, excites interest, and arouses curiosity.
- Program:** A program derives directly from the agency's mission and represents a coordinated and systematic effort to address that mission. Programs support NOAA's Strategic Plan and goals.
- Project:** A set of projects, taken together, reinforce a program. In turn, a series of activities are devised to address project goals and objectives. Projects are focused on specific issues and audiences.

1. Approximately how much of your work time is devoted to education and outreach activities?
(please place an 'X' next to one)

_____ < 25% of my time _____ 25-50% _____ 51-75% _____ Over 75%

2. Of the time you devote to all of your education and outreach activities, what percentage of your time is devoted to:

_____ % Education activities

_____ % Formal education

_____ % Informal education

_____ % Outreach activities

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3. If you controlled your work schedule, how much of your work time would you *want to* devote to education activities?
(please place an 'X' next to one)

_____ None _____ <25% of my time _____ 25-50% _____ 51-75% _____ Over 75%

4. Describe briefly **up to three (3) education projects** you coordinate or are directly involved with.

5. List **up to five (5) audiences** you serve with your education projects. Order from the audience with whom you spend the greatest amount of education time to the least amount of time.

AUDIENCES: 1. _____
2. _____
3. _____
4. _____
5. _____

6. Think about your education projects. What **percentage** of your projects last each of the following amounts of time
(please place an 'X' next to one):

_____ < one hour _____ 1-2 hours _____ half day _____ full day _____ multi-day

7. How do you decide if a new education project should be developed?

8. When you start to design a new education project, how do you decide which audience to target?

9. How do you decide the content and delivery methods of the education project?

10. How do you typically determine if a particular education project should be continued as is, be revised or be dropped?

11. How would you describe your knowledge of (please place an 'X' next to one number in each row):

	No Knowledge				Extensive Knowledge
Needs Assessment	1	2	3	4	5
Education Project Design & Implementation	1	2	3	4	5
Project Evaluation	1	2	3	4	5

12. For each topic, indicate the length of training, if any, you have attended (place an 'X' in each box that applies):

	<½ day workshop or presentation	½ - full day workshop	Multi - day workshop	College or university course for credit	Never attended training on this topic
Needs Assessment					
Education Project Design & Implementation					
Project Evaluation					

13. What three (3) things do you want to get from this workshop?

1.

2.

3.

14. Right now, what questions do you have about determining your audiences' needs, and designing, implementing and evaluating education projects?

15. Comments, questions, or anything else you would like to share with us about you and your education projects?

THANK YOU!

Appendix E

Pre- and Post-workshop Confidence Assessment

1. How confident are you with your knowledge of project planning and implementation?
2. How confident are you with your knowledge of project evaluation?
3. How confident are you with your ability to differentiate among needs assessment, formative, and summative project evaluation?
4. How confident are you in your ability to write specific, measurable objectives to guide project evaluation?
5. How confident are you in your ability to design a survey?
6. How confident are you in your ability to develop an interview guide?
7. How confident are you about selecting appropriate evaluation tools for specific evaluation goals?
8. How confident are you in your ability to analyze data?
9. How confident are you in developing an evaluation plan for evaluating a specific educational project?

Appendix F

Pre-workshop Quiz

Course: Designing Education Projects

Dates:

Location:

Name and Title

First: _____ Last: _____

Title: _____

The purpose of this pre-workshop quiz is to help the instructors gauge your evaluation knowledge prior to the workshop. Your responses will help us determine the range of knowledge among the workshop participants and the depth to cover in each workshop session. Please answer the following questions concisely and to the best of your ability.

- The activities, services, and products that are generated through the investment of resources are the project's _____.
 - Inputs
 - Effects
 - Outputs
 - Outcomes
- What are three learning domains used in writing objectives for an education or outreach project?
 - Effective, Social, Kinesthetic
 - Cognitive, Psychomotor, Affective
 - Kinesthetic, Emotional, Knowledge
 - Effective, Emotional, Progressive
- A logic model is:
 - a tool for linking project development and evaluation
 - shows the project in action
 - used to monitor project process
 - all of the above
- A _____ is defined as any person or group who has an interest in the project being evaluated or in the results of the evaluation.
 - target audience
 - stakeholder
 - board member
 - clientele
- Which teaching method is not an example of exposition?
 - Storytelling
 - Lecture
 - Small group discussion
 - Power point
- Inquiry refers to a teaching approach where information is delivered to the learner in the final form (e.g., slide show, handouts, video).

True or False

7. Why is it important to assess the needs of your project participants?
 - a. It gives your clients a chance to voice their satisfaction with your current services.
 - b. Clients expect to be asked about their wants and needs.
 - c. To determine what services and projects to provide clientele.
 - d. All of the above
8. What type of evaluation would you conduct if you wanted to provide staff with information for improving their project?
 - a. Formative evaluation
 - b. Needs assessment
 - c. Summative evaluation
 - d. Cumulative evaluation
9. Observable evidence of project accomplishments, changes made, or progress achieved are known as _____?
 - a. Inputs
 - b. Indicators
 - c. Standards
 - d. Benchmarks
10. To get an in-depth picture of your project, what type of data would you collect?
 - a. Numeric
 - b. Demographic
 - c. Qualitative
 - d. Quantitative
11. What type of evaluation would you conduct if you wanted to provide funders with information on the long term impacts of your project?
 - a. Formative evaluation
 - b. Needs assessment
 - c. Summative evaluation
 - d. Cumulative evaluation
12. Which data collection method is dependent on the interactions among project participants?
 - a. Focus group
 - b. Interview
 - c. Observations
 - d. Questionnaires
13. List two ways you can increase your response rate when conducting a survey?
 - 1.
 - 2.
14. What type of sampling takes place when individuals are selected on the basis of their availability to be surveyed?
 - a. Cluster
 - b. Convenience
 - c. Random
 - d. Haphazard
15. If you were interested in determining whether teachers are using workshop materials in their classrooms which indicator would you use to collect this information?
 - a. Pre-post test
 - b. Number of activities used
 - c. Increase in student knowledge
 - d. Not sure
16. List one advantage and one disadvantage of using observations to collect data.

Advantage –

Disadvantage -

17. _____ is the extent to which a study, test, or any measuring procedure yields consistent results.
- a. Correlation
 - b. Validity
 - c. Reliability
 - d. None of the above

18. In the table below, choose the most appropriate data gathering tool for each evaluation scenario in the column on the left. Select only one tool per scenario.

Evaluation Scenario	Data Gathering Tools				
You are interested in...	Observation	Interview	Focus Group	Pre-post Test	Questionnaire
a. ...determining if middle school students have learned how to use the equipment at a weather station.					
b. ...assessing knowledge of youth before and after a water quality project.					
c. ...knowing the current level of knowledge about hazardous weather events of local residents.					
d. ...surveying teachers that have participated in your workshops, but you are not sure what questions to ask.					

Appendix G

Post-workshop Quiz

Course: Designing Education Projects

Dates:

Location:

Name and Title

First: _____ Last: _____

Title: _____

The purposes of this post-workshop quiz are twofold. The first aim is to assess your knowledge of program planning, implementation and evaluation after the workshop. The second aim is to ascertain your level of satisfaction with the workshop content and materials, and the extent to which you intend to use the material presented.

- The activities, services, and products that are generated through the investment of resources are the project's _____.
 - Inputs
 - Effects
 - Outputs
 - Outcomes
- What are three learning domains used in writing objectives for an education or outreach project?
 - Effective, Social, Kinesthetic
 - Cognitive, Psychomotor, Affective
 - Kinesthetic, Emotional, Knowledge
 - Effective, Emotional, Progressive
- A logic model is:
 - a tool for linking project development and evaluation
 - shows the project in action
 - used to monitor project process
 - all of the above
- A _____ is defined as any person or group who has an interest in the project being evaluated or in the results of the evaluation.
 - target audience
 - stakeholder
 - board member
 - clientele
- Which teaching method is not an example of exposition?
 - Storytelling
 - Lecture
 - Small group discussion
 - Power point
- Inquiry refers to a teaching approach where information is delivered to the learner in the final form (e.g., slide show, handouts, video).

True or False

7. Why is it important to assess the needs of your project participants?
 - a. It gives your clients a chance to voice their satisfaction with your current services.
 - b. Clients expect to be asked about their wants and needs.
 - c. To determine what services and projects to provide clientele.
 - d. All of the above
8. What type of evaluation would you conduct if you wanted to provide staff with information for improving their project?
 - a. Formative evaluation
 - b. Needs assessment
 - c. Summative evaluation
 - d. Cumulative evaluation
9. Observable evidence of project accomplishments, changes made, or progress achieved are known as _____?
 - a. Inputs
 - b. Indicators
 - c. Standards
 - d. Benchmarks
10. To get an in-depth picture of your project, what type of data would you collect?
 - a. Numeric
 - b. Demographic
 - c. Qualitative
 - d. Quantitative
11. What type of evaluation would you conduct if you wanted to provide funders with information on the long term impacts of your project?
 - a. Formative evaluation
 - b. Needs assessment
 - c. Summative evaluation
 - d. Cumulative evaluation
12. Which data collection method is dependent on the interactions among project participants?
 - a. Focus group
 - b. Interview
 - c. Observations
 - d. Questionnaires
13. List two ways you can increase your response rate when conducting a survey?
 - 1.
 - 2.
14. What type of sampling takes place when individuals are selected on the basis of their availability to be surveyed?
 - a. Cluster
 - b. Convenience
 - c. Random
 - d. Haphazard
15. If you were interested in determining whether teachers are using workshop materials in their classrooms which indicator would you use to collect this information?
 - a. Pre-post test
 - b. Number of activities used
 - c. Increase in student knowledge
 - d. Not sure
16. List one advantage and one disadvantage of using observations to collect data.

Advantage –

Disadvantage -

17. _____ is the extent to which a study, test, or any measuring procedure yields consistent results.
- a. Correlation
 - b. Validity
 - c. Reliability
 - d. None of the above
18. In the table below, choose the most appropriate data gathering tool for each evaluation scenario in the column on the left. Select only one tool per scenario.

Evaluation Scenario	Data Gathering Tools				
You are interested in...	Observation	Interview	Focus Group	Pre-post Test	Questionnaire
a. ...determining if middle school students have learned how to use the equipment at a weather station.					
b. ...assessing knowledge of youth before and after a water quality project.					
c. ...knowing the current level of knowledge about hazardous weather events of local residents.					
d. ...surveying teachers that have participated in your workshops, but you are not sure what questions to ask.					

Satisfaction

This next section asks about your level of satisfaction with the workshop content and the extent to which you will use the information in the future.

19. Please indicate your level of agreement with the following statements.

The educational materials and content...	Observation	Interview	Focus Group	Pre-post Test	Questionnaire
a. met the workshop objectives.	1	2	3	4	5
b. were organized and followed a logical order.	1	2	3	4	5
c. included sufficient examples.	1	2	3	4	5
d. helped me understand project development.	1	2	3	4	5
e. provided information relevant to my work	1	2	3	4	5
f. was applicable for my educational and outreach projects.	1	2	3	4	5
g. provided information I can use in my work.	1	2	3	4	5

For questions 20 through 23, place an X on the line that best represents how you feel about the workshop.

20. Attending the workshop was a:

Poor use of my time (1) _____ (3) _____ (5) Good use of my time

21. Length of the workshop in relationship to the materials present was:

Too long (1) _____ (3) _____ (5) Too short

22. For my experience level the workshop was:

Too basic (1) _____ (3) _____ (5) Too advanced

23. To what extent can you apply the information presented to your work?

Not at all (1) _____ (3) _____ (5) A great deal

24. Would you recommend this workshop to a co-work or colleague?

Yes No

25. Do you intend to apply the skills learned at the workshop to your current education and outreach projects?

Yes No

If yes, describe how you intend to apply these skills:

26. What were the strengths of the training?

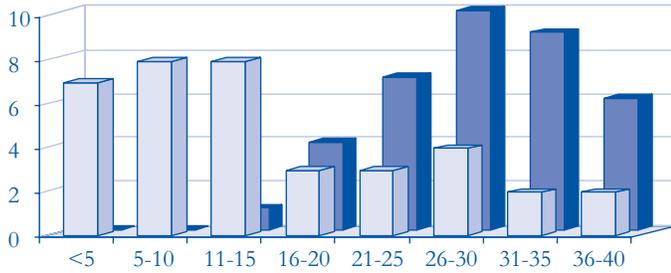
27. What changes would you recommend to make this a more useful training for future participants?

Thank you!

Appendix H

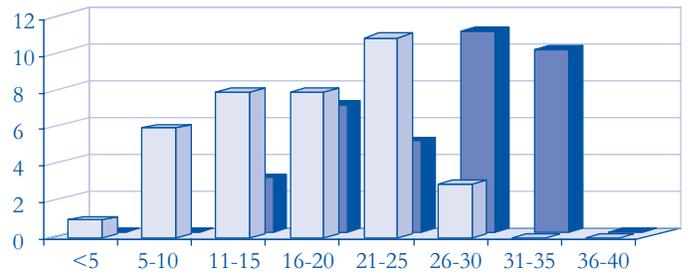
Pre- and Post-workshop Confidence Assessment Results (Questions 3-8)

□ Pre ■ Post



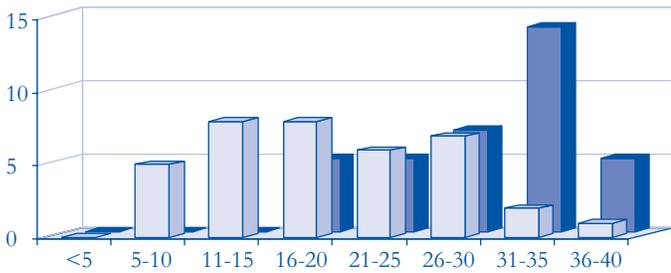
3. How confident are you with your ability to differentiate among needs assessment, formative and summative project evaluation? N=38

□ Pre ■ Post



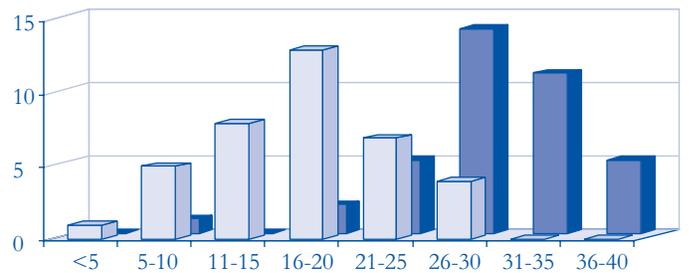
6. How confident are you in your ability to develop an interview guide? N=38

□ Pre ■ Post



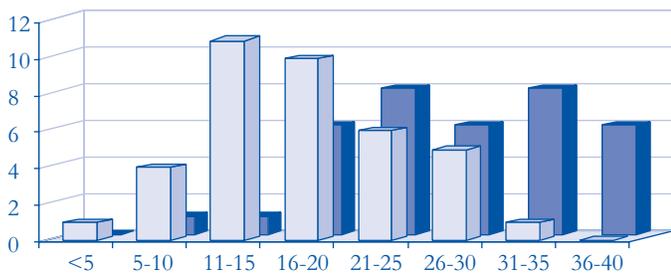
4. How confident are you in your ability to write specific, measurable objectives to guide project evaluation? N=38

□ Pre ■ Post



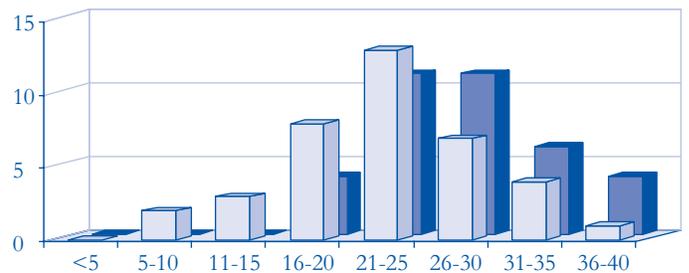
7. How confident are you about selecting appropriate evaluation tools for specific evaluation goals? N=38

□ Pre ■ Post



5. How confident are you in your ability to design a survey? N=38

□ Pre ■ Post



8. How confident are you in your ability to analyze data? N=38

Appendix I

This list contains the open-ended responses to: “If yes (to “Do you intend to apply these skills to you work”), describe how you intend to apply these skills.”

- PPBES, 'PART' of Tsunami program, strengthening of Tsunami Ready, Grants.
- I have numerous, concurrent programs (both short and long term) which I will move towards this process...hopefully.
- Use of at least a portion of the tools toward future workshop planning; better understand, anticipate and support education project development by my field offices.
- Will encourage more formal planning and assessment of projects, including but not limited to education projects. Will engage NOAA Office of Education more in my office's educational outreach planning.
- Add/refine project manual aspects.
- Need to further enhance structure and evaluation methods for my program.
- Create a project for NOAA - Spherical Visualization project.
- Brief education and outreach staff, try incorporating development, design and implementations of projects. Use knowledge in working with collaborators inside and outside the NEFSC in implementation of education and outreach projects.
- To have logic model, etc for future projects. To be better prepared in putting together 'whole' project packet with all the nuts and bolts.
- Help me write grants, projects and reports and think more strategically about the execution and success of my projects - probably will not get into great detail of these concepts and practices because of the small scale nature of my projects, time and less rigorous reporting requirements.
- Use the info to see if I can be more effective.
- I will attempt to apply the skills to my major outreach projects including the one I worked on I class. I hope to reinforce these skills over the next year.
- More work on evaluation of projects and then re-designing.
- Have developed 30 day and 8 month goals.
- To be able to design an event based on needs of audience.
- Utilize needs assessments. Utilize pre- and post test to evaluate effectiveness.
- In developing and polishing the project I came with and also in my teacher training seminar later this summer.
- Ultimately, validate the importance of my program.
- To conduct logic model for a reoccurring program. To improve evaluations of previous projects and ongoing projects.
- To current, ongoing and future projects.
- Better use of evaluation techniques to guide the effectiveness of projects.
- Apply them through several of our outreach projects.
- Evaluation of outreach activities; Develop questionnaire and pre-post surveys; Develop questions for focus groups
- I will follow the logic model, especially needs assessment as the beginning steps.
- Project design; using evaluation tools; using data collection tools (esp. relevant were discussion of survey and interview techniques)
- Implementing tools developed at the workshop and testing them before the 2007-08 school year.
- To assess where we need to go to prepare NOAA to report in a consistent fashion on program performance. That is a question that I am interested in exploring.
- Conducting needs assessments; developing evaluation components for all our current programs; Applying for funding for new projects!
- All I do is program planning/development and implementation.
- Put why and how aspects of projects into this formalism (logic plans, needs assessment, etc.). Can help organize things.

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- Data collection. Training staff before an event.
- I will definitely be looking closer at programs that we are already doing to see if we can find some good ways to incorporate evaluation. We'll try to design new projects with evaluation tools that can help us know how we're doing and help us continue to improve our programs.
- I plan to apply the entire process (planning, design, implementation, and evaluation) to each project I begin.
- Formalize plan for internship program - re-evaluate program needs. Try to formalize project design for current and future projects.
- Develop logic models for outreach projects.

Appendix J

This list provides the open-ended responses to: “What were the strengths of the program?”

- Applicability of funding; real world examples; instructors.
- Multiple workshop leaders with multiple points of view ...that greatly helped in integrating projects.
- Excellent interaction, sharing of ideas and experiences, and outline of basic concepts and tools.
- Good information about planning and assessment was provided. Good contacts and informal exchanges of ideas and techniques took place. Training greatly helped me to focus my thoughts on programs I am involved in and to plan next steps to assess program value.
- End-to-end linkages; NOAA specific resources; Understanding education communication jargon.
- Great job! Interactions with other NOAA folks. The cartoon activity was a great demonstration of qualitative data analysis. Provides grounding and references in how to design/evaluate education projects.
- Knowledgeable instructors with strong training skills that were presenting useful information. It was clear that significant effort was put into making sure that the information was presented so that it's relevance to the participants work. Trainers were extremely helpful during session where participants were working.
- Knowledge of teachers/facilitators. Quality of the environment, and toys. Opportunity for interactions with participants and quality of teaching materials.
- Toys, locations, catering, attendees, the real life interaction and sharing from others their ideas and projects.
- Hands-on activities, case studies, excellent take home resources, networking with colleagues.
- The facility and the food. Material was presented in an understandable format.
- I think one of the strengths was having us work on our projects as we went through the class to reinforce skills.
- Networking with others in line offices in NOAA.
- Apply what we learn to our projects. This makes it likely we will use what we learned.
- Hands on applying concepts to a project of mine.
- Interaction; group scenarios; hand out materials
- Keeping it applied to NOAA and the jobs we do.
- The facilitators and the exercises.
- Strength was that we could work on a real project of our own to put the skills we learned into practice. Also having NOAA's OED present was extremely useful. We need their input on what makes a grant proposal and education programs successful!
- Proving materials and discussion on those materials for use or practice.
- This provided a good overview of all the stages of a project. Evaluation of projects may be the topic of most utility to me.
- Developing your personal project through the course at the class.
- Hands-on examples; networking
- Needs assessment and evaluation.
- Strong, knowledgeable presenters; lots of opportunity for participation and discussion; share fair was great, good to see what others are doing.
- Lots of practical examples. Working on an actual project was very useful, and having Lyn, Janice, and Beth to consult with when I was stuck on particular tool was great. I also appreciate having the OEd folks there to give feedback on NOAA related things.
- Confident, adaptable and competent trainers.
- Time to work on our own projects; Leaders had great experiences and could help with each steps of the process; Good to share with other NOAA folks how things work (i.e., hearing from OEd folks).
- Applicable to any assignment (maybe not data entry).
- Nice to have perspectives of Janice, Lyn, Beth and Sarah and others with educational expertise. Having multiple 'teachers' a plus.

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- Strong base of knowledge from facilitators.
- Instructors and other participates. The content was very useful but it is rare that NOAA education and outreach people are given work time to interact and network - so that was also extremely valuable. Also liked being given time to work on tools for my own project as I went along.
- Logical approach -sequential presentation. Time to work on independent projects and ask specific questions pertaining to the projects. Interact with peers from out line offices and from NWS.
- Having instructors who are experts in this filed teaching the class and sharing their experiences.
- Group interaction and sharing of projects.

Appendix K

This list provides all of the open-ended responses to: “What changes would you recommend to make this a more useful training for future participants?”

- Work through cycle with one strong example then let us apply to our project. Live internet on presentation computer to show important links.
- Better pre-workshop prep, on what I should be bringing for the project.
- Provide more in-depth discussion and analysis of real world examples (how this process has been employed - both successes and failures) and why they succeeded or failed!
- I think the concept of project planning should be expanded beyond educational programs. All NOAA staff who plan projects would benefit from the same source of disciplined approach to assessing needs and evaluating effectiveness of projects.
- A fully developed example; better PowerPoint slides; fewer handouts.
- Page numbers. More activities like the cartoon to demonstrate concepts.
- Would have been helpful to explicitly define objectives for the workshop and leave a copy of these in sight throughout the workshop. Also would have been helpful to more clearly present directions for the sessions which involved participants working, maybe even give directions on a ppt slide. Would have been helpful if order of materials in manual had a stronger match to the order in which they were presented. Also, may want to refine font sizes and colors to make them easier to read. Lastly, be careful not have questions structures that indicate correct answers on the pre/post above. Questions 3 and 7 as well as the table of question 18 which had the before/ after matched with pre and post in the column. Also more space for comment on the survey.
- I would vote for even more examples with hands on activities and discussion.
- Better numbering of pages or use of color. Two days. Stick with one main model at a time (confused on the different models and how they relate and overlap). List of assumptions as to audience knowledge of data collection, etc.
- I'm desperately still confused about why specific columns don't carry over from one phase of Project Design and Implementation to another. For example, why aren't objectives basically the same as our outcomes or outcomes explicitly tied to evaluation questions?
- Would help to say where the material being covered can be found in the book. Give everyone a purple folder to take instead of sharing.
- Clearer instructions about what the share-fair would be and what to bring for it. Would have liked a more 'formal' share-fair to see a bit of everyone's project. While SkyWarn example provided was a big help, I think it was an 'easy out' for many of the WCMs. Perhaps give it out at the end of the workshop. WCMs are very talented individuals and while SkyWarn is important, sometimes we need to be forced to use our creative side and develop new outreach projects. I will definitely use the example in my SkyWarn program, but I think I got more out of the workshop by working on a separate project. Finally to be honest, I had misconceptions about what the workshop would be about. I was very pleased with what it turned out to be however and know it will be very useful in not only 'education' projects but in any outreach we do.
- Already useful. Logic model and evaluation plan for my project.
- In the presentation, esp. with evaluation plan but with all plans use an example project. That way we can have an idea of how we could complete the boxes.
- Require some background prerequisite materials (online course). I would have benefited by reading more about some of the key concepts, which are very new. I did read a few articles but now realize I needed to become better prepared.
- Nothing, but keep it focused on NOAA's mission and projects we are involved in and it will be great.
- 3 days (8 hours/day) is quite a bit long for any workshop. Is there a way to have there be 'homework' in filling in the needs assessment, etc. before class and using time in workshop to share, discuss and come up with best practices?

- I thought it could be more concise.
- I think that due to budget constraints this may need to be adapted to an e-learning /teleconference class. If it was offered again, two days should be sufficient to cover the most pertinent material. Remember that most of the NWS WCM's must implement projects on extremely tight schedules and much of the needs assessment is done very quickly.
- Seemed like a good level of training, we just need to take time to get used to the process.
- A little too long; Tighten up last day, could be done in 2.5 days
- The more examples the better.
- Shorter, 2-2.5 days; more exchange of information like share fair; learning from real participants' examples; types of successful partnerships, etc.
- More rep from different line offices, though it was useful to get perspectives from within our own line offices as well.
- Review materials as we go to help us remember.
- Having it before grant writing season (late February-May) is tough timing and the information best used before possibly Jan.
- Maybe more discussion of what can and cannot be done in terms of PRA and how to go about getting approval. (Someone from OMB)
- 2 days vs. 3 days
- No, not really. There was a lot to take in and I think some folks were overloaded on day 1.
- 8 hours a day are long and I found that after lunch I was not retaining information and was fidgety. But I don't have a recommendation on what to do differently.
- Follow-up survey!

Appendix L

Designing Education Projects Workshop Participants, Norfolk, VA

National Marine Fisheries Service:

First Name	Last Name	City	State	Email
Kevin	Chu	Gloucester	MA	Kevin.Chu@noaa.gov
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National Weather Service:

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Other Attendees:

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Instructors:

First Name	Last Name	City	State	Email
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Lyn	Fleming	Tucson	AZ	fleming@cox.net

Appendix M

Designing Education Projects Workshop Participants, Seattle, WA

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Instructors:

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Appendix N

Instructor Biographies

Lynette Fleming, PhD, has spent more than 30 years designing, facilitating, and evaluating programs and materials for educators.

Two of those programs, Project WILD and The Green Scene, received Gold Medals for Education and Communications from the first President George Bush's Environment and Conservation Challenge Award program.

An active life member of NAAEE, she has also served on executive boards for the Pennsylvania Alliance for Environmental Education and the Arizona Association for Environmental Education (AAEE). Lyn recently received the Hernbrode Lifetime Achievement Award from the Arizona Association for Environmental Education.

Operating her consulting business, from Tucson, AZ, Lyn currently is teaching an online evaluation course for the University of Wisconsin – Stevens Point, conducting evaluations of several educational programs, advising the development of MEERA (My Environmental Education Evaluation Resource Assistant), and guiding the states of Kentucky, Texas and Utah, and the North American Association for EE (NAAEE) on assessment tools for certification of environmental educators.

Janice Easton is a PhD candidate in the Department of Agricultural Education and Communication at the University of Florida. She is conducting a constructivist grounded theory study aimed at determining what a "successful" Extension education program looks like from varying organizational perspectives.

Janice is also the lead developer and an instructor for Applied Environmental Education Program Evaluation (AEEPE). This online course is designed to help environmental educators and natural resource professionals evaluate their education programs. The course provides participants with an overview of evaluation and an opportunity to practice skills designing and using evaluation tools for environmental education and outreach programs.

Ms. Easton has conducted program evaluation workshops for U.S. Fish and Wildlife Service, U.S. Forest Service and various state environmental organizations. In addition, there are several program development and evaluation projects that she has had the pleasure to be a part of. These include the development of the service-learning curriculum, *Give Forests a Hand*, 4-H Plant Connections and a vocational Environmental Horticulture curriculum. Evaluations of state and federal Cooperative Extension programs, Project FIRST at Archbold Biological Station, and Florida Project Learning Tree are just a few of the evaluation projects she has had the opportunity to conduct.

