

SUPPORTING STATEMENT

**PROFESSIONAL DEVELOPMENT WORKSHOPS
AND FORMAL EVALUATION OF NOAA ONLINE EDUCATION RESOURCES**

OMB CONTROL NO.: 0648-xxxx

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g. establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.

Table 5. 2007 Professional Development Participants

Location	Date	Estimated number of teacher participants	Estimated response rate	Estimated number of students reached by teacher participants	Estimated response rate
Audubon Aquarium of the Americas/Zoo; New Orleans, LA	May 19, 2007	20	99%	500	80%
Oregon State University; Corvallis, OR	June 30, 2007	20	99%	500	80%
Shedd Aquarium; Chicago, IL	August 11, 2007	20	99%	500	80%
Total		60	99%	1500	80%

The target population for this study is a census of adult educators (over 18 years of age) who will attend one of three NOAA professional development workshops for educators. Groups will be intact, and the evaluator will not control the group composition. All workshop participants will be aware of the evaluation requirements necessary to receive a stipend. Participation is strictly voluntary. The workshops are to be administered through established organizations known for the frequency and quality of educator workshops.

The evaluator will conduct a census of workshop attendants because the participants are voluntary, self-selected attendants. Given the voluntary nature of workshop attendance, the evaluator is unable to randomly select participants to attend available workshops, nor obtain and randomize a list of potential participants providing a sample size large enough to conduct the study.

The nature of this descriptive research does not require a random sample. Comparisons are made between participating individuals but results are not to be generalized beyond those teachers in this study.

2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

As explained in Question 1, the evaluator will conduct a census of workshop attendants because the participants are voluntary, self-selected attendants. Given the voluntary nature of workshop attendance, the evaluator is unable to randomly select participants to attend available workshops, nor obtain and randomize a list of potential participants providing a sample size large enough to conduct the study.

3. Describe the methods used to maximize response rates and to deal with nonresponse. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses. For collections based on sampling, a special justification must be provided if they will not yield "reliable" data that can be generalized to the universe studied.

Data will be collected via survey to describe workshop participants' beliefs, attitudes, perception of skills/abilities and environmental constraints, intentions, and implementation of any part of the workshop material in their classroom. According to Babbie (1998), survey research is a suitable method of collecting data to measure "attitudes and orientations" (p.256). Questionnaires are a practical and inexpensive means of collecting large amounts of data from many subjects (Krathwohl, 1993).

Data will be collected using five pencil-and-paper self-report questionnaires, administered at different points in time. Four questionnaires will be administered to participants; one at the start of the workshop, two at the completion of the workshop, and one several months following the workshop. Students completing the units developed by their teachers, using the NOAA online education resources, will complete a pre- and post-lesson questionnaire.

The data collection plan is designed to maximize response rates while reducing stress for participants:

1. The flyer inviting participants to the workshop clearly describes the data collection requirements.
2. NOAA has a pre-established good working relationship with the staff at the two aquariums and the university hosting the workshops.
3. All data collection materials and return postage costs will be supplied for the participant through NOAA.
4. Questionnaire items are as simple and brief as possible, in an easy to read and respond format, with clear instructions on how to complete and return them.

5. Respondents will receive personal reminders via email from the data analyst regarding evaluation requirements.
6. Teachers are required to complete data collection requirements in order to receive their full program stipend; thus non-respondents will not receive a stipend.

4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval under the Paperwork Reduction Act.

The instruments and sources of measures which will be used to collect data for answering the research questions were adapted from existing measures. These measures were taken from past, peer-reviewed, published studies to ensure the validity and reliability of the scales used in this evaluation.

5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design, and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Individuals Consulted on Statistical Design

Peg Steffen, M.S., Education Coordinator, NOAA National Ocean Service: 301-713-3060 x143
Bruce Moravchik, M.S., Education Specialist, NOAA National Ocean Service: 301-713-3060 x219
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Individual who Will Conduct Data Collection and Analysis

Elizabeth H. Danter, Ph.D., NOAA Contractor, E. Danter Evaluation, LLC, Vestavia Hills, AL: 205-296-3954

LITERATURE CITED

Babbie, E.R. (1998). *The Practice of Social Research*. Belmont, CA : Wadsworth Pub. Co.

Danter, E.H. (2005). *The intention-behavior gap: To what degree does Fishbein's Integrated Model of Behavioral Prediction predict whether teachers implement material learned in a professional development workshop?* Unpublished dissertation, The Ohio State University, Columbus.

Fortner, R.W., & Corney, J. (2002). Great Lakes Educational Needs Assessment: Teachers' Priorities for Topics, Materials, and Training. *International Association for Great Lakes Research, The Journal of Great Lakes Research, 28 (1): 3-14.*

Guskey, T.R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press, Inc.

Krathwohl, D.R. (1993). *Methods of educational and social science research : An integrated approach*. New York ; London : Longman.

Mayer, V.J., & Fortner, R.W. (1987). Relative effectiveness of four modes of curriculum dissemination. *Journal of Environmental Education*, 19 (1) 25-30.

U.S. Commission on Ocean Policy (2004). *An Ocean Blueprint for the 20th Century*.

List of instruments and related documents¹

1. Letter of Evaluation Requirements
2. Pre-Workshop Questionnaire
3. NOS Post-Workshop Questionnaire
4. OE Post-Workshop Questionnaire
5. Overall Post-Workshop Questionnaire
6. Instructions for Administration of Student Questionnaires
7. Student Pre-Lesson Questionnaire
8. Student Post-Lesson Questionnaire
9. Follow-Up Questionnaire

Summary of information sought and representative instrument item number

Every item from each questionnaire is presented in Table 6 (*see below*) to show how all information collected will be used for a practical and necessary program purpose.

¹ Instruments will be imported into Microsoft Publisher and will be printed in booklet form.

Table 6. Relationship between individual instrument items and information sought from workshop participants

<i>Evaluation Guiding Question</i>	<i>Questionnaire Item numbers</i>					
	<i>PRE</i>	<i>POST</i>		<i>F/U</i>	<i>Student Pre</i>	<i>Student Post</i>
		<i>NOS</i>	<i>OE/ Overall</i>			
<i>Teacher Professional Development</i>						
(Inputs) What are the characteristics of the teachers and classroom environments that correlate with measures of participants' reactions, skills, intentions, and behavior?	All (Q1-Q11)					
(Inputs) Do participants perceive the overall workshop as useful in accordance with specific needs of teachers?			Q5a-e, Q7, Q8	Q8a-d		
(Reactions) Do the teachers have a positive attitude toward using the NOAA online education resources?		Q1, Q2a, Q2b, Q2f	Q1, Q2a, Q2b, Q2e, Q3a-e, Q4c, Q4d,	Q24d, Q24h,		
(Reactions) Does the professional development workshop have the effect of increasing teachers' awareness or interest in incorporating ocean related materials and/or activities into their curriculum?		Q2h, Q2i, Q2j, Q2l, Q2m	Q2g, Q2h, Q2j, Q2k Q2l, Q4b, Q4e, Q4f,	Q24m, Q29a, Q29d, Q30, Q31, Q32,		
(Skills) Does the professional development workshop enhance teachers' perceived ability to utilize the NOAA online education resources?		Q2g, Q2k	Q2f, Q2k, Q2i, Q4a	Q24i, Q24l, Q29b,		
(Intention to Behave) Does the professional development workshop increase teachers' intentions to utilize the NOAA online education resources?		Q2c, Q2d, Q2e	Q2c, Q2d, Q2m, Q4g, Q6a-g	Q24a, Q24d, Q24e, Q24f, Q24g, Q25, Q29f, Q29g		
(Behavior) Do the teacher attending the professional development workshop utilize the NOAA online education resources? What is their experience?				Q1, Q2, Q3, Q4, Q6, Q9, Q10, Q11a-b, Q12a-e, Q13a-b, Q14a-f, Q15a-b, Q16, Q17, Q18, Q19, Q20, Q21, Q22a-e, Q23a-g, Q24b, Q24c, Q29e, Q33, Q34		
(Behavior) What contextual factors impact teacher utilization of the NOAA online education resources in the classroom?				Q5a-c, Q7, Q24j,		
<i>Student Academic Development</i>						
(Reactions) Do the students have a positive attitude toward using the NOAA online education resources?				Q24k, Q26a	Q1a-g	Q1a-g
(Reactions) Does utilization of the NOAA online education resources increase students' characteristics associated with academic achievement (e.g., engaged in learning)?				Q26b-c, Q28, Q29c,	Q1k,	Q1k, Q2, Q5, Q6, Q7
(Skills) Does utilization of the NOAA online education resources increase students' academic achievement as measured by a pre-post knowledge test?						
(Intention to Behave) Does utilization of the NOAA online education resources increase students' characteristics associated with environmental stewardship (e.g., knowledge of ocean science issues, intention to participate in ocean science related volunteer opportunities or work)?				Q26d-e	Q1h, Q1i, Q1j	Q1h, Q1i, Q1j, Q4,

