

Syllabus

ESTU 575: Assessment, Evaluation & Research in Environmental Ed.

HUXLEY COLLEGE OF THE ENVIRONMENT
Syllabus for Estu 575 (CRN 11174), 4 cr., Winter 2013

Assessment, Evaluation and Research in Environmental Education

Location: ES 345 Time: Mon & Weds., 10-11:50am
Instructor: Gene Myers, Ph.D.
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Office Hours: Mon. 1:30-3:30; Thurs. 10:30-12:30: use sign up on office door. Or arrange appt.

OVERVIEW AND OBJECTIVES:

This course will focus chiefly on program evaluation, with attention to relevant topics in assessment and env. ed. research. "Evaluation" has many faces and plays many roles; to fulfill these roles, a diverse suite of skills is needed. This course will emphasize understanding the contexts of evaluation, as well as skills and approaches for a representative set of typical evaluation situations. The next generation of environmental education leaders needs to understand the various uses of evaluation & program-relevant research, and what makes for appropriate, useful, efficient, and quality evaluation in order to improve the field and to meet changing funder expectations.

This course combines lecture, discussion, activities, small assignments and an major evaluation planning project to teach basic concepts and applied skills emphasizing program evaluation in environmental education. You should come away from this course with a concrete appreciation of evaluation processes and products. After this course you should be able to bring a utilization-focused, "menu-driven" approach to evaluation wherever you find yourself, to design program evaluations, particularly ones useful in program development, and to find and use additional resources when needed.

We will aim for a balance of depth, breadth and experience. Unless you have considerable previous coursework or experience, a single course cannot prepare you to be a practicing professional evaluator. But you should gain positive attitudes toward evaluation, valuable ability in thinking through the evaluation process (whether done in-house or by an external evaluator), and competencies to conduct small-scale, useful, cost-effective evaluations.

The aims of this course are that the student will:

1. Understand the value of evaluation, and the reality-testing spirit it embodies.
2. Understand how to shape evaluations to make them useful for intended uses, in a versatile context- and user- sensitive manner.
3. Know basic approaches and designs for the evaluation of typical EE situations and program types.
4. Be able to evaluate evaluations according to standards including utility, accuracy, propriety and feasibility.
5. Understand program logic models and their role in program design and evaluation.
6. Become familiar with a variety of tools for generating and analyzing data used in evaluations.
7. Prepare an evaluation plan for a specific actual environmental education or policy program or organization.

REQUIREMENTS:

1. Participate actively in class discussions and activities, demonstrating preparation and thoughtful digestion of readings assigned for the day. Additional out-of-class time will be expected for field experiences and for working with your partner organization and their stakeholders.
2. Complete the NIH Human Subjects Rights training module. **DUE Jan. 14 see that date in schedule for details.**
3. Evaluation of an evaluation (evaluation²). Assess an existing EE evaluation report and provide class via email by Jan 29 with a 1-para outline of the program and 1-para simple description of the evaluation to enable discussion in class Jan 30. Possible reports to evaluate are available on MEERA, on the Informal Science page listed below, on the wild web, and from the instructor (see evaluation reports library.doc on J drive). Not all existing reports are appropriate or complete enough for this assignment, so please check with instructor if you are not sure. The report must have complete methods and results sections, and the instruments used should be either included, available in other publications, or clearly deducible from explicit results (ie questions may be shown together with reported responses). Your assessment should touch on major American Evaluation Association areas (Utility, Feasibility, etc), noting areas that cannot be determined as well as how well other areas were achieved. Pay particular attention to the extent to which the evaluation question(s), methods, results and conclusions are described, aligned and justified (Accuracy issues)—overall: did the methods used allow the evaluators to obtain valid results that logically answer the question(s) they set out to answer? Explain why or why not? Written report should be roughly 4-6 pages. **DUE: Jan 29 email short version to class members; discussion written report due Jan 30.**
4. Your major assignment (5, next) requires thinking through the whole evaluation process for your community partner organization. In formulating your plan, you need to anticipate its final results. To give you a concrete sense (and skills) for this, we will analyze some fresh raw data from start to finish. We will use the pre and post data collected in 2012 for the program conducted for Whatcom Middle School 6th-graders by the Spring Block EE team working at Gordon Carter Env. Ed. Site. The questions will be divided up and groups of class members will construct valid and reliable data coding and reduction methods. Then they will apply these methods to all (200 or so) subjects' pre and post forms. Once an entire data set has been assembled, then teams will work on analyzing the whole dataset and generating syntheses and recommendations from the whole. The final results will be shared briefly with the class. Some in-class time will be used for this assignment, but it may require outside time too. The results will be presented to the Bellingham School District. **DUE Feb. 25.**
5. Work with others to develop an *evaluation plan* for an EE program. See description of assignment below. The plan will be evaluated according to the evaluation plan rubric, however, since some projects might diverge substantially from “typical” “evaluation” questions (ie, marketing research, needs assessments, evaluability assessment, etc.), there will necessarily be some tailoring of expectations. Some time in class will be devoted to work and to sharing progress on projects, but outside time will be needed also. **DUE: A stakeholder report and a draft logic model will be shared FEB 13. Final evaluation plan presentations Mar. 11 and 13; final written report due Mar. 18 to instructor and partner organization.**

6. Help maintain a strong learning community, an engaged and professional tone with outsider partners, and an attitude and atmosphere of support and challenge for yourself and each other.

*****In all assignments for this course, you should use the American Psychological Association's citation and reference formats, as presented in its Publication Manual, 6th Edition, Second or later printing (the first contained errors). A summary of its features is at: <http://writing.wisc.edu/Handbook/DocAPA.html>*****

EVALUATION:

- 10% Class participation & discussion
- 15% pts Evaluation of an EE evaluation report
- 15% Gordon Carter data analysis & synthesis project
- 60 % Evaluation plan – includes:
 - 10 % (of total) stakeholder report
 - 10 % logic model

Grading breakdown:

A = 100% - 93 %, A - = 92 - 90, B+ = 89 - 87, B = 86 - 83, B- = 82 - 80, C+ = 79 - 77, C = 76 - 73, C- = 72 - 70, D+ = 69 - 67, D = 66 - 63, D- = 62 - 60, F = 59 and below.

ACADEMIC HONESTY:

You should be aware of scholarly ethics, and specifically of WWU's policies on academic dishonesty and plagiarism and understand the potentially severe consequences if you violate them. See <http://www.acadweb.wvu.edu/senate/ACC/accPlagiarism.htm> and the recently revised official policy App. D of the WWU Catalog <http://catalog.wvu.edu/content.php?catoid=7&navoid=1014>

DISABILITY ACCOMMODATION:

Any student with a disability that may affect his or her performance in this course is encouraged to speak to the instructor in the first two weeks, or to the Office of Student Life (360-3083) to arrange for suitable accommodation.

You are responsible for the information in this syllabus. Changes are likely in the syllabus during the term. I will be sure you know about them ahead of time.

TEXTS:

Ernst, J.A., Monroe, M. C. & Simmons, B. (2009). *Evaluating your environmental education programs*. Washington, DC: NAAEE. ("NAAEE" in schedule; out of print, but scanned .pdf copy available on J: Saldata)

Zint, M. *My EE evaluation resource assistant*. At: <http://meera.snre.umich.edu/> ("MEERA")

Other materials linked to MEERA, other links, provided in class, or on J: /saldata/Estu 575 folder. To find the J Drive readings: log onto a university computer, find the drive called: "data1 on 'hux-raptor' (J:)", open it, then open "Saldata" then "ESTU 575" to find the readings and other course material.

Background materials provided on Gordon Carter 2012 6th grade EE program

Owen, J. (2007). *Program evaluation: Forms and approaches* 3rd Ed. New York: Guilford. (optional / recommended)

Supplemental:

- Wiltz, L. K. (2001). *Proceedings of the Teton Summit for program evaluation in*

nonformal environmental education. Jackson Hole, WY: Teton Science School & Ohio State University. Available on saldata (highly recommended)

- W. K. Kellogg Foundation Logic Model Development Guide. Available on saldata.
- Stevens, F., Lawrenz, F. & Sharp, L. (2002). *User-friendly handbook for project evaluation: Science, Mathematics, Engineering and Technology Education*. Washington DC: National Science Foundation. Available free at:
<http://www.nsf.gov/pubs/2002/nsf02057/nsf02057.pdf>
- Frechtling, J. & Sharp, L. (1997). *User-Friendly Handbook for Mixed Method Evaluations*. NSF. <http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf97153>
- Informal Science eval report library: <http://informalscience.org/evaluation>
- Trochim, William M. The Research Methods Knowledge Base, 2nd Edition. Internet WWW page, at URL: <<http://www.socialresearchmethods.net/kb/>> (version current as of 1 Jan. 2013). (See the “Navigating” section to familiarize yourself.)

SCHEDULE (subject to change):

Jan 9 Introduction to course and EE evaluation. Project options. Over view of evaluation contexts & processes.

Jan 14 History, philosophy, perspectives on evaluation. Evaluation standards & ethics.
-NAAEE Intro; MEERA, home page: "Learn more about evaluation and its importance"
-*Joint Committee on Standards for Educational Evaluation Standards*:
<http://www.eval.org/EvaluationDocuments/progeval.html>
-*AEA Standards for Evaluators*: <http://www.eval.org/Publications/aea06.GPBrochure.pdf>
-MEERA, on “Plan an EE evaluation” page, lower portion of page, read links on Evaluation Consent & Participatory Evaluation.
-<http://www.wvu.edu/rsp/documents/humanpp.shtml>
-DUE: complete this training module and submit certificate to instructor:
<http://phrp.nihtraining.com/users/login.php>
-*Recommended*: Wiltz, Teton Summit (supplemental list, J. Drive); Owen Ch. 1, 7 & 8

Jan 16 Focusing an evaluation.
Institutional culture. Program stakeholders. Program life cycle. Alternate contexts, purposes & approaches. Evaluation utilization. Evaluator roles.
NAAEE Ch. 1; MEERA Step 1; Eval context analysis.doc; Owen Ch. 2 & 3

Jan 21 MLK Jr. Day - no classes

Jan 23 Describing and clarifying program logic & assumptions. Logic models: why & how.
NAAEE Ch. 1; MEERA Step 2; <http://www.uwex.edu/ces/lmcourse/> ...click "Connect to course content" link, read through and including Section 7; Owen Ch. 10

Jan 28 Leave 8:30am, arrive 10am Woodland Park Zoo, Seattle. 10:30-12:00: “evaluation tour” with host Kathryn Owen, Education Research Supervisor. Then time for lunch & look around, back on road by 2:00, arrive B’ham by 4:00

By Tuesday noon Jan 29 (or before), email summary paragraphs of your evaluation², including a description of the thing (ie program) evaluated, to all others in the class (see assignment.

Jan 30 DUE: evaluation² discussion & comparisons (read others' report summaries before class)

Feb 4 Evaluation goals, questions & study designs
NAAEE Ch. 2; MEERA Step 3; Owen Ch. 4, 5

Feb 6 Data collection & analysis – Psychometric instruments, tests, performance tasks & rubrics
NAAEE Ch. 3, 4 & 5, and MEERA Steps 4 & 6 for this and Feb 14-27: read relevant sections for topic of the day.
Example tests / psychometrics
Data analysis assignment work starts: Gordon Carter pre/ post data

Feb 11 Reporting & using results
NAAEE Ch 6; MEERA Steps 7 & 8; Owen Ch. 6
Data analysis assignment: Gordon Carter pre/ post data

Feb 13 DUE: Project groups present stakeholder reports, draft logic models, possible evaluation questions, discuss.

Feb 18 Presidents Day - no class meeting

Feb 20 Data collection & analysis - Interviews
MEERA resource links; Monroe & other readings
Data analysis assignment: Gordon Carter pre/ post data

Feb 25 Data collection & analysis - Focus Groups
DUE: Gordon Carter data analysis results and synthesis. Share results.

Feb 27 Data collection & analysis - Questionnaires & sample surveys
Examples TBA

Mar 4 Data collection & analysis - Observation
MEERA resource links; Living Coast evaluation example

Mar 6 Managing data collection & evaluation process
NAAEE Ch. 4; MEERA Step 5

Mar 11 Project group evaluation plan presentations (sign-up for times)

Mar 13 Project group evaluation plan presentations (sign up for times)

Mar 18 DUE: final drafts due to instructor and partner organization.

Estu 575 - Evaluation Plan Assignment

Work with a small group to develop an evaluation plan for some environmental education program, or aspect thereof, as appropriate to program life-cycle and other needs.

Elements of an Evaluation Plan in the abstract:

The elements of an evaluation plan *in general* include some variation on the following, depending on your guiding evaluation question(s) (consult with the instructor as you go, especially if you have a non-‘typical’ evaluation / research situation:

- 1) A careful, balanced, thorough but succinct description of the program to be evaluated, including its goals, audience(s), and institutional and community context. The developmental stage of the program (early conceptualization / design / early or late improvement / well established / morphing / continuation decision, etc), how many years it has been running, what kinds of evaluation have been used already, etc.) should be discussed so that you can explain the appropriateness of the type of evaluation you propose. Discuss the evaluation resources and culture of the organization.
- 2) A characterization of the *type* of evaluation or research planned, and a statement of the question(s) to be answered. The question should exhibit the qualities of a good evaluation question (empirical, useful, address unknowns, significant, feasible, answers actionable). It should address specific intended *users* and *uses*, and describe how you determined these (i.e., document stakeholder interviews, negotiations with primary stakeholders, and how these eventuated in the question(s) to be answered); it might well make reference to AEA Utility standards.
- 3) Succinct review of research on similar *or analogous* programs and/or questions, so as to avoid ‘reinventing the wheel’ and identify methodological tools and pitfalls.
- 4) A logic model appropriate to the program stage and the evaluation plan.
- 5) Evaluation design. This part of the plan lays out the methods by which data will be obtained such that they that *will be capable of answering* the evaluation question(s). In general the elements, for each evaluation question, may include the following, although it is expected that design and methods will necessarily be tailored to the specific project:
 - a) Unit(s) of analysis (agencies, students, classes, teachers, seminars, conflicts, group relations, etc.).
 - b) Focal concerns (in the case of qualitative evaluation questions) and/or dependent and independent variables (ie, in more quantitative studies): Concepts (i.e., abstract representations of things in the real world) that you will gather data on. While “dependent/independent” variables suggests looking at program impacts, please note that front end, needs assessment, evaluability and other types of non-summative evaluations are fully legitimate, depending on the context, and the evaluation concerns should be tailored accordingly.
 - c) Study design. For example, what critical comparisons (i.e., pre/ post; ‘control’ groups) will be used to test the question, and how do you propose to control for possible confounds or threats to validity.
 - d) Sampling plan (type of ‘units’ sampled; who, where, how many, how accessed, permissions, Human Subjects Rights procedures). Include plans for dealing with possible response biases.

- e) Data gathering tools (question paths, interviews, surveys, tests, observations, other instruments), including description of how data will be physically recorded. A draft of each instrument, ideally refined by some piloting, should be included. Ideally, information on the reliability and validity of these tools for the questions and populations they're to be used for.
- f) Times of measurement or data gathering for each technique.
- g) Anticipated analyses, including rating, scoring or other reduction procedures and specific comparisons or other patterns of findings. While you can't know what you'll find in specific, you should be able to imagine possible findings that answer the research/evaluation questions. If you can't do that go back and find which links are missing in your plan.

The above list will require modification depending on your questions. For example an evaluation question that is best answered by qualitative methods may require a different set of considerations than those above. Some theories of evaluation dictate a different approach too (i.e., appreciative evaluation or cost-effectiveness). The bottom line is: *The description of the design elements should make it clear how the data you propose to gather will answer the evaluation questions.* In other words, if you can trace from the anticipated form of the final presentation of results back to the guiding question and uses and defend each step based on *accuracy* standards, you have a good plan.

- 4) A brief description of the proposed write-up including the anticipated scope of conclusions and recommendations (what kinds of statements you will and will not be able to make based on your data), and how they will be presented so as to facilitate the intended uses.
- 5) A proposed time line that fits the client's actual timeline and is also realistic. Completing this step serves as an important *feasibility* check on the plan.
- 6) An estimated budget, broken-down by person-hour time (not money) estimates for each work step in the plan. Hours should be categorized by staff, contracted-out, or in-kind, depending on skill level required and their availability.
- 7) Citations of literature where used throughout and a References list at end. Such literature may include theory, relevant analogs, previous similar studies, and methodological authorities upon which your design draws. Use APA citation style.

You will present your plan to your partner organization, and to the class. If possible invite key stakeholders to the class meeting; otherwise arrange presentation and discussion of it with such people off campus. Use effective presentation techniques.

Grading

Your work will be graded based on the merits of your overall plan and design, with emphasis on how adequately your methods will address the question, how well you have foreseen and addressed possible pitfalls, within the scope of material covered in the class, and completeness and quality of the plan. The final product should reflect a professional level of writing competence. The evaluation plan rubric will guide assessment of your plan, with modifications to match your type of plan as agreed upon.