



Challenges for environmental education evaluation

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ABSTRACT

The articles in this special issue cover a range of practices in environmental education evaluation, from program evaluations to training and organizational impact. This article reflects on this collection and offers six recommendations on three broad themes that the issue's authors identify as shortcomings or opportunities for change: capacity building, program theory, and learning organizations.

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1. More on capacity building

The papers in this special issue of *Evaluation and Program Planning* collectively offer many important insights into the challenges and opportunities for the evaluation of environmental education programs. Using the literature, case studies, and their professional experiences, these authors separately discuss barriers and suggest solutions, but taken together they raise several difficult quandaries that the field faces.

The first and most commonly addressed concerns the capacity of educators to evaluate, the second reflects the unbridled optimism of environmental educators as they save the world, and the third considers the role of evaluation in organizational change. Two recommendations are offered for each of these three challenges.

The goal and purpose for most environmental education evaluation is to make judgments about the value and worth of the program to decide how to improve, market, expand, or change it. This context does not include personnel performance reviews, but rather focuses on the outputs, outcomes, and impacts of the program on the audience and environment. As noted by Heimlich (2010) and others, environmental education encompasses such a broad span of programs and goals that the diversity of outcomes and impacts is enormous. As a result, there are few cookie-cutter evaluations. Most programs require unique evaluation efforts to ascertain changes in awareness, knowledge, attitudes, skills, intention, and behavior. This diversity would suggest that environmental educators need to be able to evaluate their own programs; Fleming and Easton (2010), and Zint (2010) provide examples of tools that are available to build capacity in this area.

Carleton-Hug and Hug (2010), however, report that not only have many EE programs failed to include an evaluation, but that the evaluations that have been converted to journal articles may

not have been of high quality. Programs lack clear objectives, rely on limited research approaches, and do not articulate a program theory. Of course, many evaluation reports never become journal articles, but one would not expect a literature review to reveal poor examples!

These two calls for improved capacity are perhaps requesting two different things. Of course educators should know more about evaluation. Through an on-line training, Applied Environmental Education Program Evaluation (AEEPE), and a helpful Web site, MEERA, Fleming, Easton, and Zint demonstrate that environmental education program providers can gain skills in evaluation and improve their own programs. They learn how to write better objectives, how to develop survey instruments, and when to trust a sample of the audience. From my experience as an instructor for a 4-day residential training workshop offered by the U.S. Fish and Wildlife Service, participants most often return home to tackle formative evaluations and use their new insights to improve the program itself. I suggest that these and similar professional development activities create better *educators*.

From their literature review, however, Carleton-Hug and Hug suggest that the field needs more professional evaluations. The authors of journal articles are probably not the same people who recently attended the AEEPE course or consulted MEERA. They are probably graduate students, researchers, academics, and well-trained professionals. If so, capacity building courses for practitioners may not improve these evaluations. We need a set of different strategies to professionalize the publishable evaluations in environmental education. We need better *evaluators*.

It is easy to see how we came to this quandary. To address the increased accountability demands from funders, schools, and government agencies we have helped reduce the fear factor and make evaluation skills accessible to all. We have created programs and tools that help practitioners meet these demands. But we may have unwittingly lowered the bar on evaluation and led to a passive acceptance of the concerns noted by Carleton-Hug and Hug. To a professional evaluator, some EE evaluations might be too simplistic. Bush, Mullis, and Mullis (1995) complain that evalua-

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tions are missing the point if they only report that programs are meeting their objectives. Evaluations, they suggest, should answer the harder questions—why is the program successful, and what factors account for the success?

Perhaps these questions belong more comfortably in the realm of research, not evaluation. And perhaps this distinction opens an escape hatch from our quandary. We need to teach evaluation skills to build a cadre of better educators, *and* we need to improve the opportunities to blend environmental education research and professional evaluation.

Recommendation 1: Continue the courses, Web sites, and publications that build evaluation skills for formative evaluations and better program design. Enable practitioners to share their evaluation results to improve program design and implementation through MEERA, conferences, course blogs, and professional exchanges. Reduce the fear of evaluation by building their skills.

Recommendation 2: Encourage the academic community and professional evaluators to collect evaluation data to answer research questions and write articles about their work. Raise the bar on published evaluations. Encourage more researchers to conduct evaluations because they can answer generalizable research questions. Encourage journals to publish evaluation reports.

2. More on program theory

Of great surprise to many environmental education practitioners in the evaluation courses I have taught is the realization that their program may not be saving the world. An inherent belief that awareness and knowledge will lead to conservation behavior, even when the program does not teach about the behavior, pervades the environmental education community (see Carleton-Hug and Hug, 2010; Fleming and Easton, 2010; Heimlich, 2010; Monroe et al., 2005).

Whether it be personality flaws in the ever-optimistic environmental educators or overly ambitious expectations from administrators as Fleming and Easton offer, the process of developing a program logic model often forces educators to explain how a trip to the zoo for third-graders increases their willingness to embark on a conservation career. When they cannot, they begin to change their program objectives, their outcomes, and/or their program. In my experience, however, many educators who may be willing to concede that *one* trip to the zoo for *third*-graders may not change a career path still stubbornly cling to the notion that educational programs that raise awareness and provide excellent experiences can bring a host of glorious changes. For them creating a logic model does not affect their belief that positive program experiences can lead to changes that are not explicitly taught.

Heimlich identifies a number of instances where research in education and behavior change provides important insights for program evaluation. These theories, models, and evidence-based conclusions are what should link outputs to outcomes and short-term to long-term changes. This is what program developers should rely upon when asked to explain how their program brings about the impacts they have identified. These are the answers to the questions Bush et al. (1995) pose. These are contributions that research should offer. Outside evaluators can often see gaps in the logical links because they are familiar with the research. But many environmental educators do not have this background.

Although the determinants and motivations of behavior and behavior change are much discussed and debated (see Kollmus & Agyeman, 2002 and responses or Monroe, 2003), environmental education courses ought to help students understand the limitations of a good program and the theoretical underpinnings of behavior change. A few examples of well-constructed programs

that identify the theories and evidence that hold the logic model together would be useful learning tools. Although hypothetical, a description of relevant theories could be surmised after the fact. After spending most of the semester studying more than a dozen popular theories of behavior change, my graduate students identify a program designed to change behavior and explain the theories that could account for the success. This practice might help program developers fill the gap in their logic models.

Recommendation 3: Professional evaluators, academics, and researchers should do a better job of articulating the theories that drive the programs we evaluate through journal articles, courses, assignments, and conference presentations. Doing so should help provide models for environmental educators to understand how research findings and theories can be used in program development to explain how their program achieves reasonable outcomes.

Recommendation 4: We should make research findings more accessible to practitioners, more easily discussed and digested, and more helpful to those who can use them. The Research Commission of NAAEE has often discussed producing short summaries of ‘what research tells practitioners’ for selected articles. Such summaries could be posted on NAAEE’s Web site and linked to the original articles.

3. More on learning organizations

Jenks et al. (2010) describe their experience with Rare as that of adaptive management, a concept typically applied to natural resource managers who recognize that ecosystems are far more complicated than they can model and therefore they need to take small steps, monitor change, and figure out what to do next. The U.S. Department of the Interior has embraced adaptive management, describing it as involving “ongoing, real-time learning and knowledge creation, both in a substantive sense and in terms of the adaptive process itself” (USDOJ, 2008a). Their Web site describes how to conduct adaptive management, which they call “learning by doing,” through a process that includes stakeholder commitment and a monitoring plan (USDOJ, 2008b).

As Jenks, Vaughan, and Butler point out, adaptive management is to natural resource management what program evaluation is to education. We even use some of the same terms. Both practices are used to improve the work of the organization to better achieve broad goals. Scaling down to the individual, adaptive management is akin to reflective practice, the concept of continually improving our work through considering experiences and learning (Schon, 1983).

Jenks, Vaughan, and Butler go on to suggest that the results of adaptive management may stall if the organization is not able to collectively reflect, learn, and change norms. Fleming and Easton also point out that improving the demand side – helping organizations encourage, want, and use evaluation results – is key to building capacity and promoting evaluation in the field. Indeed, this is the goal of utilization-focused evaluation (Patton, 2008) and Flowers (2010) provides an example of how a program evaluation can be orchestrated *with* the organization, not only *for* the organization. Following Patton’s principles helps increase the likelihood that the program organizers and even the organization might learn from the evaluation results.

The shift in how Rare staff changed the way they conceive, understand, and practice conservation education, however, seems to be an order of magnitude different from how Hooked on Fishing programs can be improved. The possibility that an organization might transform itself in response to management data or a program evaluation is potentially threatening, if the change strikes at the core of the mission, or if the leadership is risk adverse. It requires time, vision, and commitment to a goal for an organization to make a cultural shift to listening to new data and considering change.

The National Park Service is in the midst of such a shift, having recently committed to developing a culture of evaluation (NPS, 2006). The Interpretation and Education Evaluation Summit, held in Denver, CO in October 2006 was one of a series of steps the agency is taking to rebuild itself for its second century. Conferences, meetings, and reports began in 2000 and have resulted in the formation of a National Education Council, a comprehensive business plan, the Renaissance Action Plan, and an evaluation strategy, of which the Summit was a part. Such an extensive set of plans and reports suggests a change in culture requires the participation of many and enough time to understand what it means. The occasion of the Summit allowed the NPS leadership to go on record in support of evaluation and hear from field-based participants. Mary Bomar, the NPS Director, used a 2001 report to describe the Park Service as an agency that is beloved and respected, but too cautious and reluctant to engage in current issues. She challenged current staff with her next comments: “We sometimes need that outside shot in the arm to help us change. We also need a culture of evaluative thinking as a way of doing business, not only in interpretation, but throughout the disciplines within the National Park Service” (NPS, 2006: 9).

If promoting learning organizations is our goal, we might see greater success by focusing on nimble non-profits who can keep their eye on the prize and shift strategy to get there, like Rare. Although natural resource management agencies have been thinking about adaptive management for years, becoming a learning organization will take decades. Because it is beyond the scope of any one evaluation or professional development opportunity to influence organizational culture, we may have little chance to affect change in the way an organization does business. Yet it is the essence of evaluation to help identify and guide change. If we can help leaders look beyond discrete findings to conditions and patterns, as Rare demonstrates, perhaps there are some opportunities for evaluators.

Recommendation 5: Use evaluations as opportunities to not only make recommendations for programs, but suggest what evaluators might do differently the next time. This was ably demonstrated by Flowers and serves as an example of how a practitioner can learn from personal experience. If done carefully, so as to not suggest we do not know how to evaluate programs, educators and supervisors might see how evaluators model the learning process (see also Cheng, Monroe, & Gordon, 2008).

Recommendation 6: Use the concept of education for sustainability as transformative change (Sterling, 2001) to help schools and agencies become learning organizations. Evaluators can use the opportunity of any single environmental education evaluation to suggest ways in which the organization, not just the program, can be transformed to better meet their goals of cultivating society-ready citizens and solving difficult problems.

4. Final thoughts

The articles offered in this issue are rich in insights and suggestions for improving environmental education and program

planning. These recommendations offer only a handful of ideas for moving forward on three of the common themes expressed by these authors. By becoming actively involved in professional associations, increasing attractive professional development opportunities, identifying strategies to make research more accessible to practitioners and evaluation more palatable to researchers, and using evaluation to move organizations to a culture of learning, evaluators, practitioners, and researchers may all help improve environmental education.

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