Environmental education evaluation: Reinterpreting education as a strategy for meeting mission

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ABSTRACT

Critical consideration of the role of environmental education in meeting conservation outcomes is increasingly necessary for environmental agencies and organizations. Evaluation can help move organizations to alignment between educational goals and organizational mission. Moving theory-driven evaluation into mission-based program theory, this chapter examines the ways in which educational goals can and should be linked to conservation outcomes for an agency or organization.

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1. Introduction

The North American Association for Environmental Education invites people to join its network of "people who believe in teaching people how to think about the environment, not what to think" (naaee.org, 2008) which raises questions about the nature of environmental education, especially as we consider evaluation of education programs in environmental and conservation organizations. Is environmental education a means to an end (desired behaviors from thoughtful decisions), or is it an end unto itself (people who know how to think)? Is environmental education about the individual, or is it about the ecosystem and the impacts of human action on the system? Is the purpose of environmental education program evaluation to drive a program by documenting quality and reach or to document outcomes beyond the program itself?

In agencies and organizations with missions of environmental conservation, preservation, or pollution prevention, many traditional assumptions of learning are strained by at least three challenges: (a) the nature of the learning setting; (b) formal models of assessment of learning failing to capture the value or real outcomes of an experience; and (c) education itself in these organizations being viewed as competing with the environmental or conservation outcomes of the agency or organization. Evalua-

tion of environmental education programs in these organizations is further constrained by the very nature of education and the benefits and baggage accumulated over the history of environmental education programs—if environmental education is to serve an environmental outcome, all these concerns need to be explicated.

The field of environmental education has grown over the past forty years and more recently is assuming the identifiers of an emerging profession (cf: Hyde, 1964; Jackson, 1970; Larson, 1977; Sykes, 1991). It has a significant body of research distinguishing it from its parent disciplines including dedicated journals, its own jargon and professional affiliations, and its own unifying documents such as the collection of *Guidelines for Excellence in EE* (NAAEE, 2008). Historically, environmental education has been affiliated with conservation education, outdoor education, nature study, education for sustainable development, environmental literacy, resource-based education programs, and other foci. Yet as a field, the purpose of education within conservation, environmental and preservation organizations remains a point of contention. Evaluation has only recently become a prominent component of environmental education (Jacobson, McDuff, & Monroe, 2006; Zint & Higgs, 2008).

The questions in the introductory paragraph and the challenges posed above are a frame to examine educational program evaluation within environmental organizations by first looking at the relationship of mission to education, then examining education within environmental organizations. Section 3 shifts focus to environmental outcomes of education followed by an examination of evaluation issues related to these programs. The

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chapter concludes with an attempt to make sense of the questions and challenges asked above.

2. Organizational mission

Most organizations in the ecological and environmental arenas have environmental conservation, protection, sustainability and/or preservation as one, if not all of the primary goals in their mission statement.[1] All the organizations' activities, including fundraising, policy, and enforcement, along with the field conservation, education, interpretation and outreach efforts must serve this mission (Merriman & Brochu, 2009). Program evaluation should help the organization examine its impact across all strategies including policy/regulatory and social strategies such as economic incentives/disincentives and models, marketing including social marketing, and education. In terms of educational activities of the organization, including outreach, community programs, education, and interpretation, evaluation should be used to obtain or maintain alignment with the specific conservation or preservation efforts of the agency or organization.

But the ways in which mission relates to educational programs must be clarified. A common misconception is that education is about children in school, which ignores the scope of lifespan learning that occurs well beyond school walls. The purpose of environmental education is not primarily focused on improving test scores, although good environmental education (EE) in schools can serve toward this end (see, for example, Angell, Ferguson, & Rudor, 2001; Leiberman & Hoody, 1998). The goals of EE are more explicitly stated in the generally accepted definition offered by the Belgrade Charter (UNESCO-UNEP, 1976):

> ... to develop a world population that...has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

In terms of education leading to action, even clearer are the goals from the Tbilisi Declaration (UNESCO, 1978) which included the creation of new patterns of behavior in individuals, groups, and society as an outcome of environmental education. Environmental education is ultimately about decision-making, critical thinking, and citizenship, including acting as an environmentally literate citizen which includes adopting actions that reduce environmental stressors affecting some conservation target.

Second, education is limited to neither youth nor schools. Although this will be discussed subsequently, it is useful at this point to note that the "lip service" given to adult, community, and non-school youth educational programs in environmental organizations permeates from the top levels of the organization (Ardoin & Heimlich, 2006). The challenges of understanding how education can serve mission through different audiences including professionals, community activists, community groups, and youth groups vary based on the educator and the environmental, conservation, or ecological scientist or administrator with managerial oversight.

Third, evaluation is, or can be, the primary tool for measuring movement toward mission attainment through education, regardless of the environmental organization's larger motive that may also include activities of habitat restoration, species preservation, or resource improvement. In most organizations, it is ultimately the conservation action that is central to the work of the agency or organization (Horr, 2007). For conservation- and preservation-

based organizations and agencies, such measurement would necessarily include development and implementation of skills, intents, and behaviors as they relate to immediate conservation, preservation, or pollution prevention/abatement actions that can be accomplished by the individual with agency and proximity (Heimlich & Ardoin, 2008).

In the Conservation Measures Partnership open standards for the practice of conservation (see: https://staging.miradi.org/files/miradi_overview.pdf), an action (or strategy) leads to the mitigation of a threat which in turn can ease an environmental stressor leading to improvement of the conservation target. When the threats are human activity, education can be one of the primary strategies used to mitigate the threat by addressing collective and individual behaviors that contribute to the stressor (see the article by Vaughn in this edition and for other examples visit www.rareconservation.org). Goals of educational programs would therefore be focused on: (1) increasing specific individual activity that positively and directly affects the stressor; (2) reducing or eliminating individual human-based activity which negatively affects the targeted stressor; (3) engaging learners in active remediation, preservation, or conservation efforts led by the organization; or (4) supporting the work of the organization. Simply, the strategy of education focuses on what individuals can do or not do related to the conservation outcome.

Moving people to action, however, is difficult. Kollmus and Agyeman (2002) suggest the factors which shape environmental behavior are so complex as to render any specific framework or model insufficient. Yet general educational models of change such as the Theory of Reasoned Action (Fishbein & Ajzen, 1975), the Theory of Planned Behavior (Ajzen, 1991), the Transtheoretical Model of Behavior (Prochaska, Redding, Harlow, Rossi, & Velicer, 1994), and the Health Belief Model (Sheeran & Abraham, 1996) all explain behavior as a function of behavioral intentions which are affected by factors such as knowledge, attitudes, skills, and self-efficacy. Conative theory proposes that to reach behavior change, it is necessary to address the inputs of knowledge, attitudes, and skills along with the complex interrelationships among those factors which are unique to each individual (Emmons, 1986).

Certainly evaluation activities including reaction and satisfaction level measures, attempting to determine cognitive gain, and examining attitudes and changes in attitudes over time as a result of educational interventions, are important and must be continued. An evaluator viewing education as a means toward the conservation/preservation outcome, however, would also incorporate the higher level, long-term conservation outcome measures into the evaluation effort. Outcomes include considering environmental action not only as a long-term impact, but as a short term, controlled outcome for conservation activity that can be embedded into the learning experience through a project, service learning, or participatory action. Resistance to this position, however, is deeply embedded in the psyche of the field and usually revolves around perceptions of action as advocacy and activism (Disinger, 1982, 2001).

3. Education in environmental organizations

It may be beneficial to explore the possible origins of the resistance to education for action. In the U.S., the common schools philosophy envisioned by Horace Mann remains the dominant view in formal education (Baines, 2006). With its mandate for school systems to educate youth to become future citizens, learning is often distanced from immediate application, and testing is used to ensure that students all have a similar base of knowledge about what is needed as a citizen. This conceptualization of education as future oriented is only functional within the traditional, disciplinary based schooling system. In examining

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[1] To sample the range of mission statements, see sites such as: www. nps.gov/legacy/mission.html; www, epa.gov/epahome/aboutepa.htm; www.worldwildlife.org/who/index.html; www.simplyliving.org/sl/.