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Mission, messages, and measures: Engaging zoo educators in environmental education program evaluation

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ABSTRACT

Here we describe the development and implementation of a large-scale monitoring system to systematically evaluate various Chicago Zoological Society (CZS) education programs. Our primary goal was to engage program staff in developing a consistent measurement and evaluation strategy across and within education programs. We did this by using the CZS mission as a framework and incorporating participatory, theory-based, and utilization-focused evaluation approaches into our education programs. As we carried out the process, we learned several lessons that helped us to succeed. This process has allowed us to begin building the perspective among our staff and leaders that evaluation is an ongoing process that occurs alongside program delivery to inform cycles of reflection and improvement and measure program performance over time.

Introduction

Zoos and aquariums around the world share a commitment to environmental education. As stated in the guiding documents of international zoo and aquarium associations, education is the primary strategy through which zoos and aquariums can encourage people to participate in global environmental stewardship (AZA, 2013; EAZA, 2008; WAZA, 2005). Millions of people take part in zoo and aquarium educational opportunities each year (e.g., Heimlich, Searles, & Atkins, 2013) and these experiences have a vast potential to influence positive environmental outcomes over time. For many zoos and aquariums in North America, efforts to evaluate the learning outcomes of zoo and aquarium visits have been growing (e.g., Wagner, Chessler, York, & Raynor, 2009). The development of the Association of Zoos and Aquariums (AZA) Visitor Impact Study (Vernon & Boyle, 2008) bolstered these efforts, not only among the group of institutions directly involved in the study, but also among other zoos and aquariums that were encouraged to begin taking new approaches to evaluating the cognitive, affective, and behavioral outcomes of a zoo or aquarium visit.

Our aim with this article is to provide an overview of how the Chicago Zoological Society[1] (CZS) implemented a systematic approach to educational program evaluation that engaged zoo education program staff and provided meaningful information for program improvement. There is mounting support (e.g., Carleton-Hug & Hug, 2010; Keene & Blumstein, 2010) for expanding environmental education program evaluation so that educators have a systematic process for collecting data as a regular part of program delivery. In addition, discussions about environmental program evaluation are not only focusing on individual programs, but also on the importance of being able to evaluate in an ongoing, sustainable manner (e.g., Heimlich, 2010; Keene & Blumstein, 2010; NAAEE, 2009; Zint, 2011). Such evaluation approaches provide educators with data to monitor their progress toward specified program goals and help to ensure that programs reinforce each other to consistently move participants toward overall institutional goals.

While there is clear recognition of the importance of evaluation, challenges such as a lack of clear program objectives, compressed time frames, organizational resistance to unknown evaluation findings, budgetary limitations, and staff with limited evaluation expertise have frequently been cited as barriers to conducting environmental program evaluation (e.g., Ardoin & Heimlich, 2013; Carleton-Hug & Hug, 2010; Clavijo, Fleming, Hoermann, Toal, & Johnson, 2005; Khalil & Ardoin, 2011; Luebke & Grajal, 2011; Norland, 2005). For many environmental education and other nonformal education organizations, increased interest is not enough to overcome these well documented challenges to program evaluation.

Overcoming these challenges requires that organizations cultivate an internal environment and culture that values

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[1] The Chicago Zoological Society is a private nonprofit organization that operates Brookfield Zoo on land owned by the Forest Preserve District of Cook County, IL, USA.

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evaluation and aligns it with organizational goals and priorities. An effective strategy for shifting organizational culture toward evaluation has been to build environmental educators' capacity to conduct evaluations and utilize evaluation results for program improvements (e.g., Fleming & Easton, 2010; NAAEE, 2009; Zint, Dowd, & Covitt, 2011). Stockdill, Baizerman, and Compton (2002) defined evaluation capacity building as the "...intentional work to continuously create and sustain overall organizational processes that make quality evaluation and its uses routine" (p. 14). Essentially, with evaluation capacity, educators understand how their programs contribute to the organizational mission, are able to define relevant program goals, align program elements and activities to program goals, and feel confident in developing program performance measures that are consistent with their program and the organization's stated goals. Several evaluation approaches have been successfully implemented to develop a strong ongoing capacity for evaluation among program staff and stakeholders (e.g., Baron, 2011; Hoole & Patterson, 2008; Huebner, 2000; Monroe et al., 2005; Patton, 2008; Powell, Stern, & Ardoin, 2006; Smits & Champagne, 2008). These approaches include linking evaluation to the organizational mission, engaging education staff in a participatory evaluation process, creating a theory-based program framework for understanding and supporting evaluation, and focusing the evaluation plan and design on audience needs and future utilization. Following is a brief overview of these four approaches.

Mission-focused evaluation

Missions guide the activities of nonprofit organizations. Ongoing evaluation can be a valuable tool to measure the extent to which programs contribute to mission achievement (Hoole & Patterson, 2008; Preskill & Boyle, 2008; Rabb & Saunders, 1999). Mission statements provide institutions with an anchor around which goals and objectives are set, allowing leaders to maintain a clear focus for business decisions and program planning (Meriman & Bochu, 2009). For environmental education organizations, clearly defined missions have been identified as effective guides for program development and evaluation (Heimlich, 2010). In North America, the accreditation standards set by AZA specify that conservation and education be key components of zoo and aquarium missions (AZA, 2013). As such, the education activities that take place in zoos and aquariums should have defined goals for learning that are consistent with the institution's mission. While a mission statement itself is not intended as a measurement tool, having goals and objectives focused on the mission provide indicators that can be used to gauge program performance and, ultimately, overall organizational effectiveness (Worts, Korn, & Wadman, 2007).

Participatory evaluation

A participatory approach to evaluation provides a strategy for overcoming many of the challenges associated with initiating and sustaining evaluation within an organization. This approach engages program staff and other stakeholders with evaluators in evaluation planning, design, data collection, and interpretation. As a collaborative approach, it encourages dialog around the purpose and focus of an evaluation, builds ownership through staff involvement, and improves stakeholders' perceptions of the quality and utility of the evaluation results (Patton, 2008). Adopting a participatory approach to evaluation also typically requires some kind of capacity building among program staff (Preskill & Boyle, 2008). Possible capacity building techniques include having staff attend training or workshop sessions, establishing communities of practice among staff, and providing coaching or mentoring with an evaluation expert who provides individualized technical and professional support.

Theory-based evaluation

Another evaluation approach that can build staff capacity is theory-based evaluation (e.g., Huebner, 2000; Monroe et al., 2005). Various labels have been used to describe this approach including theory-driven evaluation, program-theory evaluation, and theory of action. Theory-based approaches focus on the linkages between various program activities and observed outcomes. Typically this involves diagramming within a logic model framework how the inputs and activities of a program influence the outputs and outcomes. Logic models can range from very simple models that focus on the operational relationships among program components to more complex theoretical models representing a series of causal linkages between program activities and various short- and long-term program outcomes. There are several benefits to this approach, where evaluators work with program staff to identify the underlying theory of a program for evaluative purposes. It helps staff and evaluators clarify and reach agreement on program goals, it builds support for the evaluation, and it encourages reflective practice among the staff (Huebner, 2000).

Utilization-focused evaluation

Related to participatory evaluation, utilization-focused evaluation is an approach that ensures the information gathered through the evaluation is appropriate to the application required and intended by the users (Patton, 2008). It is participatory, in that the intended users must be identified and closely involved in planning and developing the evaluation and articulating what results are needed and how they will be used: whether to answer a specific question, improve a program, or inform a decision. In considering how evaluation data can potentially be used, Clavijo et al. (2005) described four broad categories of use across nonformal education settings: instrumental, conceptual, persuasive or symbolic, and process use. Instrumental use takes place when evaluation findings inform decision making regarding program design or delivery. In contrast, conceptual use typically does not involve any actions or decisions, but occurs when the evaluation findings provide insights into general principles or trends surrounding the effectiveness of programs. Persuasive or symbolic use occurs when evaluation findings are needed to legitimize a program or justify a previous decision. Finally, process use is not concerned with using the actual evaluation findings, but with the process of conducting an evaluation. Here, program staff participation in the evaluation process is seen as providing them with additional understanding of the mechanics of their program that can be applied to enhance their program efforts.

The evaluation approaches described here, among others, are flexible and can be used together as needed to create a comprehensive evaluation that works within the context of an organization's needs. For example, Bledsoe and Graham (2005) advocated the use of multiple approaches to help program staff set goals, understand program theory, and develop programmatic recommendations. Powell et al. (2006) also adopted a combined utilization-focused, participatory, theory-driven, and consumer-based approach to develop a sustainable evaluation framework for an environmental education organization.

At the CZS we used our mission as a foundation to implement a systematic, sustainable approach to educational program evaluation. Other core elements of our system included engaging education staff in the initial evaluation planning and design process (participatory); aligning evaluative measures based on a logic model framework (theory based); and providing opportunities