Weaving evaluation into the Waipā ecosystem: Placing evaluation in an indigenous place-based educational program

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ABSTRACT

Indigenous environmental education programs offer learning, while also serving as vehicles for cultural resurgence and perpetuation. Like any educational program these initiatives require evaluation to improve their quality, assess progress and meet obligations to funders. However, evaluation tools must be tailored to such programs, which tend to be values based, holistic, and often focused on group, family and community empowerment rather than individual student learning. At the same time, evaluation tools developed specifically for indigenous education programs may be difficult to compare across programs. In this case, we investigate how the logic model, an established and widely used western evaluation tool, can be adapted and applied effectively to evaluate a place based Native Hawaiian education program, Waipā Foundation's summer environmental program aimed at youth entitled *Mai uka a i kai* (from the uplands to the sea). In a pilot evaluation of Waipa Mai uka a I kai environmental summer program found that short-and medium-term outcomes associated with the program's logic model were generally met, particularly if qualitative assessment tools were used. The use of quantitative evaluation tools and incorporating long-term outcomes requires much more involvement from program staff, participants and the broader community. These findings offer lessons for application of logic models, as well evaluation more broadly, within indigenous education contexts.

1. Introduction

In today's competitive global society, evaluation often occurs for the purpose of comparing success across programs competing for similar resources. A challenge arises when culturally-based programs aim to demonstrate their effectiveness using western evaluation methods which may or may not capture the values and goals underlying these programs (Kawakami, Kanani Aton, Lai, & Porima, 2007; Kawakami, Aton, Cram, Lai, & Porima, 2008). Utilizing culturally-relevant evaluation integrates traditional values and behaviors into the evaluation process (Kawakami et al., 2007). Effective evaluation can create time and space for dialogue among diverse program stakeholders (Cajete, 2000). Validating such evaluation methodologies is critical to fully understanding and enhancing an indigenous program's impact on a community (Cajete, 2000; Kawakami et al., 2007) which often includes goals that encompass and integrate cultural and ecological health.

Connections and interactions with the natural world play an integral role in building indigenous identities and knowledge systems (Berkes & Folke, 1998; Blaich, 2003; Kamakau, 1992; Kame'eleihiwa, 1992; Kana'iaupuni & Malone, 2006; McGregor, 2007; Turner, Gregory, Brooks, Failing, & Satterfield, 2008). Many indigenous educational

programs aim to enhance cross-generational transmission of traditional ecological knowledge (TEK) which is defined as "a cumulative body of knowledge, practice and belief, evolving by adaptive processes" (Berkes & Folke, 1998). In Hawai'i, "physical, spiritual, genealogical, and sociopolitical/historical ties to land and sea... nourish Hawaiian well-being and are evident in Hawaiian epistemologies" (philosophies of knowledge) (Kana'iaupuni & Malone, 2006). Collective knowledge (Berkes, 1993) of Native Hawaiians prior to western contact encompasses deep understanding of *ka pae'āina o Hawai'i* (the lands of Hawai'i) and their reciprocal relationship with humans. The Hawaiian concept of Aloha 'āina (connotes love of the land, patriotism and political identity), also referred to as Hawaiian environmental kinship (Kanahele, 1986; Ledward, 2013a, 2013b) emphasizes harmonious relationships between people, nature and ancestral spirits (McGregor, 1996).

Mālama 'āina (caring for the land) is an integral part of the Hawaiian way of life (Trask, 1991) and evaluation of Native Hawaiian environmental education programs based on mālama 'āina must incorporate a holistic, place-based approach in order to support cultural revival and perpetuation of responsibility for the land (Kana'iaupuni & Malone, 2006). It is "new old wisdom at work" and it is being revived in

the 21 st century (Ledward, 2013a, 2013b). In this case study, the evaluation team worked with the nonprofit, Waipā Foundation, on the north shore of the island of Kaua'i to evaluate the ten year old *Mai uka a i kai* (from the uplands to the sea) summer program that served 95 participants ages five to fifteen in 2014. Waipā is a well-respected Native Hawaiian organization that has worked to empower and sustain the well-being of the people and land for nearly thirty years. The logic model created in collaboration with Waipā leadership, links program inputs and outputs to positive environmental, social, and economic impacts within the surrounding community. This case study examines how a logic model can be used in a culturally appropriate manner to evaluate the goals of a Native Hawaiian educational program, offering lessons for evaluation in indigenous educational programming and other settings.

2. Literature review

In order to better understand the current research regarding culture-based program evaluation, the following literature review explores various evaluation methodologies that can be employed. It begins with an introduction to place-based evaluation, moves into purpose and use of the western logic model, and ends with various indigenous program research methodologies that have been developed out of the desire of many communities to validate traditional ecological knowledge.

2.1. Place-based education

Evaluation of place-based educational programs reveals multiple benefits for learners including exposure to diverse viewpoints, greater access to resources, and increased visits to, and knowledge of, local places (Powers, 2004). One challenge in evaluating place-based education programs is the tendency for them to have multiple, holistic goals, which go far beyond individual learning. Place-based education ultimately "increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens" (Sobel, 2004). Research in Hawai'i reveals that students benefit from education environments that are rooted in culture, as they experience positive socioemotional outcomes; this is especially true for indigenous students (Kana'iaupuni, Ledward, & Malone, 2017). Research recommends that place-based education programs clearly define their goals, in addition to improving communication with stakeholders to encourage greater endorsement for evaluation (Powers, 2004). Place-based education can offer perceptual, sociological, ideological, political and ecological dimensions of understanding a place, but it "does not come close to describing all the ways that place has inspired thinking across academic disciplines and across cultures" (Gruenewald, 2003). Therefore, place-based education can complement other ways of knowing, including indigenous knowledge, which provides a fuller picture about the "power of place"; this will ultimately lead to a more comprehensive understanding of the human experience from a specific cultural tradition (Gruenewald, 2003).

Evaluation of indigenous, place-based programs require evaluation approaches that allow for consideration of multiple goals and perspectives. Though it is not new, the western logic model is a framework that can be adapted, and successfully utilized, to measure the multiple goals that these comprehensive programs require.

2.2. The logic model

The logic model is widely used as an evaluation tool, particularly for nonprofit and government agencies not seeking revenue maximization.

Various practitioners began developing the logic model in the 1970s because they saw value in the visual representation of ideas (Knowlton & Phillips, 2012). Two initial representations of the logical model framework are found in the literature, including the 1971 framework approach implemented by the U.S. Agency for International Development and the 1976 hierarchy of program effectiveness developed by Claude Bennett (Knowlton & Phillips, 2012). The logic model has evolved from visuals showing simple cause-and-effect relationships to detailed, time-bound, operational models (Wholey, Hatry, & Newcomer, 2010).

A logic model demonstrates a progression from inputs through outputs to outcomes, providing a visual road map for an organization (Haggard & Burnett, 2006; Moss & Bond-Zielinski,2010). Logic model outcome statements can be specific or broad, providing freedom within the evaluation framework (Knowlton & Phillips, 2012). When the logic model is complete, "critical measurement areas can be identified" and assessed repeatedly to guide progress towards outcomes (McLaughlin & Jordan, 1999). Logic models are commonly used by grantees to demonstrate outputs and outcomes to both funders and stakeholders (Moss & Bond-Zielinski, 2010). Models created with a clear understanding of a program provide "a benchmark to measure against" (Fetterman, Kaftarian, & Wandersman., 1996) and can be referenced in future evaluations.

Logic model inputs consist of resources including staff, time, money, research, materials, equipment and technology (McCawley, 2010). Furthermore, outputs can include workshops, trainings, and meetings; publications, curriculum and strategic plans; or stakeholder participation (University of Wisconsin System, 2012). Short-term outputs lead to the achievement of short, mid- and long-term outcomes, which are intended to improve social, economic, civic, cultural and environmental conditions in the community (McCawley, 2010).

Success in creating and implementing a logic model depends on the time and resources allocated to the evaluation process. According to the literature, evaluating educational programs is challenging, oftentimes due to factors such as potential negative consequences of evaluation, limited capacity and time, and insufficient prioritization of the process itself (Carleton-Hug & Hug, 2010). Some researchers believe that implementing a logic model is too time-consuming, because stakeholders must articulate goals that align with program activities in spite of inconsistencies between program goals and its day-to-day activities (Carleton-Hug & Hug, 2010; Dwyer & Makin, 1996). Since Waipā needed to develop a logic model and use it for evaluation, these challenges, coupled with the inherent challenges of adapting a western evaluation tool to an indigenous, place-based program, created an opportunity to develop this case study.

2.3. Indigenous evaluation methodologies

Literature suggests that the logic model can be adapted to fit the evaluation needs of indigenous communities and educational programs, although integration of indigenous and western evaluation methodologies is not well-documented in academic publications. Omitting cultural dimensions in planning activities can have adverse consequences by excluding critical knowledge and ways of knowing such as the "material and lived aspects of culture, identity, community cohesion and sense of place" (Adger, Barnett, Brown, Marshall, & O'Brien, 2013). These are difficult to measure concretely, yet necessary for effective program evaluation. Ignoring intangible cultural dimensions can render the evaluation ineffective and biased evaluation results may cause maladaptation (McMillen, 2015). The following research provides insight into other indigenous communities that struggle with the same challenges in evaluating culturally-based programs.