RESOURCES FACILITATING COMMUNITY INVOLVEMENT IN EDUCATION: EMPHASIS ON ENVIRONMENTAL LITERACY

by

Jesse McKeage Wheeler

A Project

Presented to
The Faculty of Humboldt State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
In Education
December, 2011
ABSTRACT

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JESSE MCKEAGE WHEELER

Youth development and community development are intrinsically related; this project serves to enhance those connections by stimulating and facilitating environmental literacy projects. Project RELAY is a website that provides resources and skills for community members to become more involved in education. Using the platform of environmental literacy, organizations and individuals can create opportunities that integrate other aspects of life that have diminished within school systems. The site includes a model program and a model project that serve to convey how community elements can successfully integrate into the education system and influence youth development. Drawing on environmental education, place-based education, and service-learning methods, the site also provides the tools to build a network of volunteers who can positively affect youth through formal and informal education outlets and career exploration opportunities. Ultimately, this project aims to generate participation from community members who want to enhance their own environmental literacy with the interest of conveying it to youth through place-based education projects. This site will serve to strengthen the community’s capacity for youth support as well as contribute to a general sense of place and stewardship within the area.
ACKNOWLEDGEMENTS

This project would not be possible without the dedicated professors of Humboldt State University who have guided my interests and supported my work through their courses and counsel. Ann Diver-Stamnes, my advisor, has been an encouraging force throughout the Master’s process, and I have always left our meetings with clarity and determination. I am glad to have Tom Cook on my committee since his Education and Society class, the first I had taken after a number of years of academic hiatus, inspired me to join the program. Corey Lewis, although a committee member from outside the Education Department, has worked most closely to my field, and I am grateful for the ongoing contributions, resources, and vision he has shared.

The motivation my colleagues at The Watershed Center have given me has also played a vital role in this project; their eagerness to contribute to the educational components of our organization beyond their professional responsibilities has stimulated me to expand our reach and provide a model for other communities. The educators of Mountain Valley Unified School District, many of whom were my own teachers, have also influenced my work through their understanding of student needs and open-minded approach to education.

Finally, I would like to express my gratitude to my friends and family who have always expected the best from me and have been vigilant in making sure I command the same from myself.
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CHAPTER ONE
INTRODUCTION

Communities have the capacity to take responsibility for education. Where there are citizens, there are elements of education: the infrastructure of schools, real-life learning contexts provided by organizations and agencies, caring people with social investments in the youth, and all of the cultural resources that a place has to offer. Communities have great potential to provide a rich education, but rarely do they engage all of these factors into comprehensive plans of action. Without leadership and organization, it is difficult to connect the elements of education in order to build foundations of learning throughout the citizenry.

In 2010 I took on the position of director at a local environmental-based summer camp. As I prepared for the upcoming camp season, I realized that I was inheriting a treasure trove of environmental education curricula. I felt like Ali Baba as I swung open the door of my organization’s storage shed and uncovered a pile of binders covering a variety of topics, including fire behavior, salmon and streams, team-building, watershed poetry, and numerous others. In my position developing a place-specific natural resource-based summer program, these resources were invaluable to me; however, I began to wonder who else was using them. These particular curricula had been stored away for years, indicating that not even the past director had used them. Furthermore, I had never heard of most of them throughout my experience working within local schools. I imagined the time, effort, and
expense that had gone into developing the curricula that I eagerly hauled back to my office—buried treasure exposed to enrich the experiences and minds of local youth.

This was not the only time I have been impressed by the wealth of resources within this field. Throughout my experience studying and working in environmental education I have discovered that strong environmental literacy efforts continue to exist throughout the world. Although the face and focus of environmental education have changed over the past half-century, the initial accomplishments of the 1960s established the strong foundation on which current endeavors continue to develop. Currently at governmental levels, California is in the final stages of producing the first environment-based integrated curriculum for public schools, the Education and Environment Initiative. At grass-roots levels, new movements, such as reconnecting children and nature, are on the ground reaching out to children and families through fundamental appeals of health and harmony. Environmental education does not lack enterprise, so why is much of the country still environmentally illiterate?

Despite the existence of high-quality environmental literacy resources, many current efforts are limited to separate experiences removed from children’s everyday lives, including the school day. The most common types of environmental education available to youth are residential programs, often restricted to a few days within a single grade; field trips, often occurring once a year; and summer camps, depending on accessibility and family inclinations. While any type of experience is worthwhile, sporadic environmental education is less effective than long-term, integrated programs (Bogner, 1998). Furthermore, curricula that do not provide direct links to
children’s every day events and realities circumvent some of environmental education’s major aims, such as developing an ethic of environmental stewardship and corresponding behaviors. Environmental literacy resources cannot achieve their full potentials unless they can be used appropriately and thoroughly.

Oftentimes schools also require input from external sources to implement these resources; rarely are environmental education curricula integrated into an entire school program or even a classroom program. While many teachers support environmental literacy efforts, the inertia created by adhering to state standards limits the time and energy spent on incorporating environmental education into their lessons, even if applicable curricula are available. In many cases, they relay on support from outside organizations, such as AmeriCorps Watershed Stewards Project or Friends of the Dunes locally, who come into the classroom to implement brief programs. Although useful, these efforts offer teachers respite from their regular programs rather than engage them in the development of new, integrated curricula. Although many organizations are proactive in bringing environmental education to youth, they only draw on a fraction of the population to get involved in their programs; each community has a wealth of individuals who are capable of contributing in many ways.

Communities have a duty to fill the gaps where the education system is faltering when schools can no longer meet students’ needs on their own. Since 2007, major cuts in funding for California public schools have created major impacts for student programs. From reduced number of school days to increased class sizes to
the elimination of programs, schools have encountered hardships that affect their core programs (California Budget Project, 2011). These limitations are exponentially detrimental to supplemental programs, such as environmental education, that require additional support for development and resources. Without state funding for these types of programs, it is important for community members to step in to provide the impetus and contributions necessary to integrate them into the lives of youth if not their schooling. This project speaks to the ways in which the community can become involved in environmental literacy efforts on a number of different levels.

Across the board, proponents of environmental literacy have called upon the support of the community to extend its message to the youth when they cannot rely upon schools to maintain this responsibility. From the earliest environmental education documents, including the Tbilisi Report and the Belgrade Charter, to recent national environmental literacy reports, proponents of environmental education call for community involvement and support (Coyle, 2005; UNESCO, 1978; UNESCO-UNEP, 1976). Culture and education have always been intrinsically related; the environment is an integrating context for bringing back these elements of community into education. Children learn about their culture by experiencing their environments and connecting with their communities; in turn, they contribute to the evolving nature of society.

The subsequent chapters frame the issues of incorporating environmental education into the lives of youth and present a solution for doing so effectively from
grass-roots levels. Chapter Two presents a literature review that covers a history of environmental education efforts and the ways in which local communities have fit into that record. The chapter starts with a background of environmental education, including a description of its benefits and methods. Subsequent sections describe limitations within the school system to meet student needs in these areas, and then offer recommendations on how to draw on community resources in order to satisfy those needs.

Chapter Three describes the methods by which I developed my website. This methodology section follows the process of investigating the need for the project through interviews, analyzing documents, and reviewing literature. It then details the formation of the Project RELAY website and each of its components, which comprise Chapter Four. The concluding Chapter Five completes the project’s contributions to the field of environmental education by inspecting the ways in which Project RELAY’s resources can continue to facilitate community involvement in work towards propagating environmental literacy.
CHAPTER TWO
LITERATURE REVIEW

Introduction

Children today face a twofold quandary: deteriorating environmental conditions threaten the quality of their lives, and they have limited tools with which to respond to these threats. Fortunately, increasing international attention has made the environment a rising educational priority. Over the past few decades, local and international educators have developed programs to address environmental concerns by increasing environmental literacy throughout the citizenry. The resulting environmental education agenda provides measures through which people, especially children, can reestablish their connections with the Earth in order to confront environmental issues. Without it, the health of the planet and all of its inhabitants may be at stake.

While schools play a role in delivering numerous forms of literacy, many fail to consider the environment in their programs. Furthermore, as environmental concerns become more pressing, the responsibility of connecting children with their world becomes too great for formal education systems alone; the responsibility falls on everyone, community leaders, policy makers, administrators, teachers, parents, neighbors, and the students themselves. In terms of teaching children, there is no single institution or individual responsible—environmental literacy is a group effort. Cultivating a ubiquitous environmentally literate population requires renewed
connections throughout all aspects of a place, encompassing children, adults, community, history, nature, and every system that an environment supports.

Fundamentally, the aim of environmental education is to help people develop an ethic that can lead to environmentally responsible behavior in their everyday lives; in exceptional cases, it can motivate them toward taking action towards addressing issues in their communities and beyond. Non-academic organizations, such as non-governmental and non-profit agencies, are in a position to synchronize efforts of community constituents in order to assist environmental education efforts by providing financial, curricular, and human resources.

Throughout the history of environmental education, collaborations among institutions and individuals on national and international levels have contributed to research and development of effective practices; the use of these practices has extended beyond schools into multiple facets of local communities. What better way to deliver the message of a place than from the ground up. Across the board, environmental educators and advocates emphasize the role of adults in conveying the meaning and responsibilities of living well on this Earth. Although many adults have maintained their own connections, not all have the aptitude or confidence to share them effectively. In this case, training may be necessary to help promote learning and sharing. By recognizing each individual’s role as both educator and learner, understanding the environment becomes a part of everyday life, infused into the community, the home, and the heart.
This review of the literature opens by weaving together the connections between environmental literacy and youth development, describing how the two objectives are mutually supportive and can be simultaneously implemented. The review addresses the role of public involvement in education within the school system and, moreover, within the wider community; in the case of extra-curricular activities the review also describes the role of non-academic and community-based organizations in mediating barriers to environmental literacy in children’s lives. The end of the review focuses on the need for training within the community in order to establish strong foundations for education beyond the school system.

*Environmental Literacy and Youth Development*

This section discusses the concept of environmental literacy and its current applications. First the section presents a background on environmental literacy as its ideology has paralleled the expansion of environmental education. A short history leads to the fundamental concepts that underlie current efforts. Next the section describes place-based education and service-learning as pedagogical means of bridging objectives between environmental literacy and youth development. Working within these pedagogies, the section outlines applications for youth programs emphasizing environmental literacy, describing the best practices that contribute to the advancement of its goals.

*Foundations of environmental education.*

Environmental literacy speaks to the deep connections that humans have developed with the Earth. The ability to read landscapes, with an intimate sense of
their histories, components, and connections, manifests the degree of this profound understanding within individuals (Lewis, 2005). Additionally, “knowing, caring, and practical competence constitute the basis of ecological literacy,” which can be applied to “how people and societies relate to each other and to natural systems” in ways that will lead to the respect and motivation required to live sustainably and make environmentally conscious decisions (Orr, 1992, p. 92). While it would seem that this type of connection would be fostered through every-day experience, the current dislocation between Western society and the natural realm has produced a need to include nature in more formal methods of education (Smith & Williams, 1999). Environmental education provides systems for cultivating the knowledge, values, and skills vital to environmental literacy and its applications (Coyle, 2005). As environmental education developed as a tool for generating environmental literacy, the terms will be used synonymously for the purpose of this literature review (Moseley, 2000). A description of the history of environmental education provides the conceptual groundwork for current goals and practices.

Environmental education is not a recent concept. Throughout Western history, the writing of familiar thinkers, such as Jean-Jacques Rousseau and John Dewey, have formally acknowledged the connections between education and the environment (McCrea, 2006). While the term, “environmental education” was first publically professionally used in 1948 at a meeting of the International Union for the Conservation of Nature, an academic definition was not published until 1969 (McCrea, 2006; Stapp et al., 1969). The defining article was published during the
height of an increased public interest in the study of nature, conservation movements, and the promotion of outdoor education that occurred in the 1960s (Parlo & Butler, 2007; Stevenson, 2007). In response to the proliferation of environmental problems and a greater understanding of the role of how human actions contribute to those problems, proponents of environmental action placed the responsibility of finding solutions on citizens (Stapp et al., 1969). Citizens could influence environmental issues through voting on policies, legislation, and representatives, supporting efforts towards the resolution of these issues, and taking action in their everyday lives (Stapp et al., 1969). In the definition, environmental education addresses the lack of public experience in this new realm with the aim of “producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution,” in other words, an environmentally literate public (Stapp, Bennett, Bryan, & Fulton, 1970, p. 34).

In addition to a public interest in environmental issues, international governments intensified efforts to develop environmental education on a world-wide scale. The back-to-back inception of the National Environmental Policy Act of 1969, the National Environmental Education Act of 1970, and the National Association for Environmental Education marked the United States’ initial efforts towards promoting environmental health and awareness (McCrea, 2006). In 1975, the United Nations Educational Scientific and Cultural Organization partnered with the United Nations Environment Program and founded the International
Environmental Education Programme in Belgrade, Yugoslavia; this program composed the Belgrade Charter, a renowned framework for expanding environmental education on international levels (Palmer & Neal, 1994; UNESCO-UNEP, 1976). Two years after the affirmation of the Belgrade Charter, the first intergovernmental Conference on Environmental Education, or Tbilisi Conference, further broadened the application of environmental education and established the current framework for the development of environmental education used throughout the world (Palmer & Neal, 1994; UNESCO, 1978). These events set the stage for grand-scale contributions towards environmental literacy.

As a consequence of its well-established foundations, environmental education has expanded significantly over the past decades. Current highlights include the United States’ National Environmental Act of 1990, which established an Office of Environmental Education within the Environmental Protection Agency (EPA) as well as the National Environmental Education Foundation, an ancillary organization aimed at promoting environmental literacy by drawing on resources not accessible to the EPA (National Environmental Education Act of 1990). On international levels, the 1991 Earth Summit Conference in Rio de Janeiro created a historic gathering of the most heads of government to discuss global issues (Keating, 1993). At this meeting, global leaders adopted Agenda 21, a “global plan of action” (Keating, 1993, p. v) which provided many important implications for environmental education, including chapter 25, Children and Youth in Sustainable Development, and chapter 36, Promoting Education, Training and Public Awareness (Palmer &
Neal, 1994). These chapters recommend improving education for children on environmental issues so that they may become more involved in present and future decision-making processes regarding development (Keating, 1993).

Despite years of development in the field of environmental education, major contributors, such as the North American Association for Environmental Educators, still recognize the working definition produced by the Belgrade Charter and the concept defined by the Tbilisi Conference (Archie et al., 2005). According to the Charter, the goal of environmental education is to:

- develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions of current problems and prevention of new ones. (UNESCO-UNEP, 1976, p. 15)

The concept of environmental education, refined by the Tbilisi Conference, targets individuals as well as the collective population and includes five areas of focus: awareness, knowledge, attitudes, skills, and participation (UNESCO, 1978).

Expanded attention to each of these areas has laid the foundations for the multi-faceted, holistic properties of modern environmental education efforts.

**Fundamentals of environmental education.**

Contemporary environmental education programs share the principles established by the aforementioned history of efforts. Essentially, the programs uphold the sentiment that people’s understanding of their relationship to the Earth “is
not considered complete unless students gain a holistic environmental ethic that leads to appropriate lifestyles” (Eagles & Demare, 1999, p. 33). In order to achieve this broad goal, environmental education requires a comprehensive approach that informs people of their relationship to the environment as a whole (Stapp et al., 1969).

The depth of this approach speaks to a multiplicity of levels in regards to the environment and education. On a general level, successful environmental education programs focus on cognitive, affective, and psychomotor domains (Ballantyne & Packer, 1996; Bloom, 1956; Bogner, 1998). In terms of the environment, these include instruction of ecological and biological knowledge, promotion of conservational attitudes and values, and motivation towards environmentally responsible behaviors (Ballantyne & Packer, 1996; Dettmann-Easler & Pease, 1999). Although knowledge is important to the understanding of environmental issues, it is not the sole instrument of education (Ernst & Monroe, 2004). In opposition to ideas proposed by the early United States linear models for analyzing pro-environmental behavior, programs that concentrate solely on factual knowledge lack the translation of that knowledge to behavior and motivation which is crucial to the goals of environmental education (Kollmuss & Agyeman, 2002). A complete, balanced environmental education experience requires integration of teaching methods that focus on knowledge as well as those that focus on values and behaviors (Ballantyne & Packer, 1996; Palmer, 1998).

Attitude development is another vital element of environmental education, although it is often overemphasized (Kollmuss & Agyeman, 2002). While attitudes
contribute to environmental behaviors, the process of changing attitudes takes time (Bogner, 1998). In the case that students have already established positive environmental attitudes, it is more practical to build on these through factual and cognitive lessons (Eagles & Demare, 1999). School subject matter is only one of the factors that influence students’ environmental attitudes, thus “for an [environmental education] program to be effective in influencing attitudes it must be part of holistic [environmental education] curricula over many years” (Eagles & Demare, 1999, p. 37). As in any form of education, providing students with a skill-set that allows them to enter the world as competent adults is a notable aim (Lewis, 2005). With a well-rounded understanding of environmental topics, the goals of environmental education complement each other—students’ knowledge is stimulated by their attitudes and is then translated to action; consequently, action is enhanced by those attitudes and knowledge (Ballantyne & Packer, 1996). This integration of knowledge, attitudes/values, and behavior in environmental topics further substantiates the holistic focus of environmental education (Voelker & Horvat, 1976).

A focus on the learner requires attention to multiple aspects of development as well as consideration of individual learning styles. Within the levels of educational objectives, programs also consider the multiple intelligences proposed by Howard Gardner, especially the recently added nature smart (Louv, 2008). The multifaceted nature of environmental education also promotes cross-disciplinary curricula development (Monroe, 1999; Palmer & Neal, 1994; UNESCO-UNEP,
A singular-subject focus limits the extent of the holistic learning required to truly understand the concepts intrinsic to the complex systems and relationships within the world (Orr, 1992). Interdisciplinary connections fostered from within both the sciences and humanities create student abilities to form objective and subjective judgments important to approaching complicated issues, such as those encountered in environmental studies (Lewis, 2005). Consequently, a multiplicity of instructional practices and settings accompany the multidisciplinary subjects explored within environmental education (Louv, 2008; Volk & Cheak, 2003). The following pedagogies, place-based education and service-learning, elegantly incorporate the objectives, methods, and benefits of environmental education into programs relevant to learners’ lives and settings.

**Pertinent pedagogies:** Place-based education and service-learning.

It is clear that an increasing awareness of the interdependence of Earth’s systems and the impact of individual actions on those systems has introduced a global perspective to environmental education efforts (Mann & Stapp, 1982). However, recent focus on students’ immediate surroundings has gained ground in the form of place-based education, “the process of using the local community and environment to teach concepts in…subjects across the curriculum” (Sobel, 2005, p. 7). By incorporating place into conceptions of education, learning can extend into any aspect of life; this reestablishes connections often lost as a result of conventional schooling systems (Gruenewald, 2003). The principle concept of place-based
education is that it creates a foundation for learning by exploring the natural and cultural aspects of a locality (Smith & Williams, 1999). To state it simply, “places are pedagogical,” they provide content and context for learning; correspondingly, education is the mediator of understanding place by translating cultural interpretations, meanings, and importance (Gruenewald, 2003, p. 623).

Place-based education aims to reestablish connections between people and the places they live, taking into consideration the social, historical, and natural interactions specific to those places (Sobel, 2005). By nurturing the “ability to perceive and utilize the potentials of a place,” people learn how to live well with a sense of being that is rooted physically and internally (Orr, 1992, p. 130). Learning about the places they live in helps people to simultaneously learn about the greater world as well as their lives, and identities, within it (Gruenewald, 2003). Ultimately, this produces the sense of stewardship, which is so critical to the aims of environmental literacy (Sobel, 2005).

To use an appropriate metaphor, place-based education is often regarded as a branch of environmental education, sharing similar structures and objectives. Like environmental education, its all-encompassing nature makes it inherently multidisciplinary (Woodhouse & Knapp, 2001). Also as in environmental education, it is critical that the content is relevant to learners’ lives (Lieberman & Hoody, 1998). Students can more readily see the applications of relevant topics; thus, they become more engaged and responsive to the subject matter (Hershey, 1992). Furthermore, the environment can be used as an integrating context to frame
students’ current conceptions within their school and community environments (Lieberman & Hoody, 1998). Integration of community and environmental projects with subjects across disciplines enhances both the projects and the curricula (Sobel, 2005; Volk & Cheak, 2003). In addition to applicable, integrated subject matter, place-based education highlights direct experiences and hands-on learning (Orr, 1992; Woodhouse & Knapp, 2001). Participation in real world projects with genuine adults provides the practice needed for children to take on real-life responsibilities when they are mature (Hart, 1992). Providing this type of learning, in the form of projects, field trips, or social endeavors, requires teacher flexibility and openness to partnering with adults outside of the school system as well as working within a wide range of settings (Smith, 2002).

The attention to localization and emphasis on both ecological and cultural components opens personal connections that facilitate both learning and engagement that are specific to place-based education (Woodhouse & Knapp, 2001). Requisite community involvement is another key component that distinguishes place-based education from general environmental education programs (Sobel, 2005). Due to its locality-specific qualities, place-based education is suitable for a range of educators and audiences that can reach diversified generations, cultures, and other backgrounds (Woodhouse & Knapp, 2001). It is important to recognize the community contributions and resources that a place has to offer, thus advocates of place-based education promote teacher collaboration with local organizations and volunteers (Sobel, 2005).
Service-learning is another educational method that shares many features with other forms of experiential education, such as environmental and place-based education (Billig, 2000). It is defined as “the combination of classroom instruction with community service, focusing on critical, reflective thinking as well as personal and civic responsibility” (Barnett & Jeandron, 2009, p. 8). With strong foundations in building respect and sense of place, service-learning projects and place-based education complement each other naturally (Andersen, 1998). A high percentage of adults perceive environmental education as a source of motivation for community work (Coyle, 2005). Service-learning provides the action components that support the understanding and values induced by place-based and environmental education strategies (Woodhouse & Knapp, 2001). In addition to enhancing children’s confidence and locus of control, both service-learning projects and place-based education increase the social capital of the community as a whole by preparing them to be competent, committed adults (Andersen, 1998; Sobel, 2005).

While all of these pedagogies have distinct emphases and frameworks, their underlying intentions and targeted outcomes unite them as agents of youth development and catalysts for community growth. For the purpose of this literature review, the issues addressed in reference to environmental education can apply to place-based and service-learning efforts as well. The next section discusses how youth can benefit from these efforts, namely environmental education. The section identifies schools as logical conveyors of environmental education; however, the logistics of formal education often are not receptive to its implementation. At the
end of the section, a description of the limitations to environmental education generates the grounds for the need for community support.

Advancements and Limitations in Environmental Education

This section sets the stage for expanding the responsibility of the public to promote environmental literacy. The section begins with the ways in which the current goals of environmental literacy relate to youth development and ultimately to the growth of a widespread environmental ethic. In keeping with the advancement of these goals, the section continues with a description of the ways in which environmental education can be incorporated into formal school systems and the different types of environmental education programs available to schools. Limitations to implementation follow, leading to a discussion of the role of non-academic agencies in overcoming barriers to integrating environmental education programs into formal school curricula. By stimulating programs in other capacities, these agencies provide opportunities to enhance, facilitate, and create programs within their broader communities.

Youth development and positive outcomes.

Students benefit from environmental education in many ways beyond the determined goals for environmental literacy. Intellectual benefits extend past academics into deeper thinking and maturity. Attitudinal development reaches into several aspects of students’ personas that affect behaviors within school, the home, and the greater community. The skills that students develop can be applied throughout their lifetimes; furthermore, early connections between nature, health,
and spirituality are conducive to soundness of being. The ultimate outcomes of well-executed environmental education programs lead to well-rounded individuals with a sense of responsibility and empowerment.

Due to the comprehensive nature of the programs, a number of academic benefits have developed as a result of incorporating environmental education into school curricula (Lieberman & Hoody, 1998; Parlo & Butler, 2007). Among these are “increased knowledge and understanding of…content, concepts, processes and principles as well as increased problem solving and application skills” (Parlo & Butler, 2007, p. 32). Within school performance, well-integrated environmental education curriculum has led to positive improvements in science as well as other core subjects (Coyle, 2005; Lieberman & Hoody, 1998). Critical thinking, which refers to individuals’ use of their abilities and skills to draw upon previous experience in consideration of judgment of new situations, stimulates higher-level understanding, such as interpretation, analysis, evaluation, inference, and self-regulation (Bloom, 1956; Ernst & Monroe, 2004; Facione, 2000). Environmental education improves critical thinking skills through the incorporation of teaching methods that promote multidisciplinary concentration, student empowerment, reflection, and open-ended projects, which require questioning, investigating, and researching (Ernst & Monroe, 2004). These skills liaise thoroughly with other elements of environmental education in order to stimulate problem solving and decision-making in keeping with environmental literacy goals (Voelker & Horvat, 1976).
In addition to a broad range of subject matter, constructive environmental education programs present students with a variety of experiences, including first-hand involvement, participation, preparation, and reinforcement, necessary to make responsible environmental decisions (Bogner, 1998). Experiential learning aspects of environmental education allow students to exercise their knowledge, confirm their attitudes, and practice their skills; direct experience, especially in an outdoor setting, enhances students’ understanding and attitudes regarding environmental topics and issues (Almeida, Bombaugh, & Mal, 2006). Experiences also impact children’s perspectives on environmental problems by enhancing problem solving and decision-making skills (Voelker & Horvat, 1976). Skills such as these further promote capacity building, the strengthening of people’s ability to establish their own values and priorities and to conduct corresponding actions (Eade, 1997). As a result, many students develop a sense of empowerment from learning about environmental issues that promotes their involvement in local and global issues (Ballantyne & Packer, 1996; Battersby, 1999). These actions demonstrate the objective of environmental education to encourage the youth to take on the role of “citizens of tomorrow, recognizing their role and responsibilities of potential decision makers” (Battersby, 1999).

Students respond to the relevance of environmental topics to their lives, thus these topics spark a motivation to study and an increase in positive attitudes to learning in general and fewer behavior management issues in school settings (Battersby, 1999; Lieberman & Hoody, 1998). Environmentally infused curricula
have the capability to result in increased student engagement and achievement in classes as well as reduced disaffection with school on the whole (Battersby, 1999). Due to these factors, the public widely recognizes environmental education as contributing to character development and the institution of respect for other people and things (Coyle, 2005). Ultimately, these programs have the ability to give students “responsible roles and engage them in cooperative, goal-directed activities with other youth, with adults, or both” (Hamilton, 1980, p. 180)

The active elements of environmental education simulate both mental and physical health. The learning-by doing, hands-on constituent draws on the psychomotor skills which further link students’ actions to their understanding (Hershey, 1992). Promotion of outdoor instruction and time spent in natural settings also provides health benefits that range from combating obesity to expelling depression; on a more profound level, reconnecting children to nature is vital to their sense of spirituality (Louv, 2008). How can people recognize their place on this Earth without feeling a sense of purpose?

Despite its relatively recent history, environmental education has developed a strong foundation and ideology. In consideration of its many processes and practices, environmental education stresses human interactions with the environment through culture with the ultimate goal of promoting the development and maintenance of sustainable actions. While prevailing environmental organizations direct their messages at the world’s population, they develop a greater number of educational programs for the youth.
Formal education: Environmental education within the school system.

Although environmental education is important for all members of society, schools have become an appropriate setting to induct the youth of society with an environmental consciousness (Duvall & Zint, 2007; Eagles & Demare, 1999). Owing to the cornerstones set by the Belgrade Charter, national and international governments have long recognized the value of environmental education in school institutions (National Environmental Education Act of 1990; United Nations Environment Program, 1975). The National Environmental Education Act of 1990, established a national effort to strengthen environmental awareness that included many features aimed at developing environmental education curriculum, training, and support for teachers and schools (National Environmental Education Act of 1990). Environmental education content is not directly defined in this act, yet it is clear that school students are the targeted audience (Kirk, 1992).

Schools, by nature, are a venue for environmental education; thus, there is much that can be done in the classroom for this discipline (Duvall & Zint, 2007; Monroe, 1999; Palmer, 1998). In recent years, there have been many national and state efforts towards more formal implementation of environmental education in schools. Near the turn of the century, the State Education and Environment Roundtable, a group of representatives of state education agencies, identified the best practices for environmental education to establish a foundation for its use in schools (Lieberman & Hoody, 1998). The Environment as an Integrating Context framework identified by the Roundtable further emphasizes the nature of
environmental education mentioned previously in this review, drawing on interdisciplinary, collaborative, student-centered, and hands-on elements (Lieberman & Hoody, 1998). Undoubtedly influenced by the efforts of the State Education and Environment Roundtable, California has taken steps to pilot national environmental literacy efforts with the Environmental Education Initiative, which has created the first integrated environmental education curriculum to be implemented in public schools throughout the state (California Environmental Protection Agency, 2009). The Environmental Education Initiative developed this curriculum through partnerships with multiple state agencies associated with education and the environment, including the State Department of Education and the California Natural Resources Agency among others (California Environmental Protection Agency, 2009). This initiative also established California’s Environmental Principles and Concepts, which align with state standards and form the foundation of the integrated curriculum (California Environmental Protection Agency, 2009).

Environmental education has expanded into many forms that school programs can incorporate both within and outside of the school setting (Dettmann-Easler & Pease, 1999). Outdoor classrooms, gardens, and arboretums are valuable yet unconventional assets to school grounds (Almeida, Bombaugh, & Mal, 2006). While the green school movement is just starting to sow its seeds, schoolyard habitats provide an ideal setting and jumping off point for environment-based curricula (Louv, 2008). For schools that lack natural spaces, fieldtrips to surrounding conservation areas or ecological centers provide means of connecting
subject matter with real occurrences in the local environment (Lewis, 2005). A popular form of environmental education often used by schools is the residential program, which extends for a period of two days or more in an off-site environmental center (Dettmann-Easler & Pease, 1999). The outdoor and observational elements of environmental education are often difficult to attain within a school setting, thus these trips provide an outlet for students to experience their subject matter (Bogner, 1998). Although there are many options, the most effective environmental learning occurs when outdoor activities are combined with classroom reinforcement (Bogner, 1998; Dettmann-Easler & Pease, 1999).

Limitations within the system.

Despite the advantages that environmental education can offer, schools still have limitations in implementing programs (Stevenson, 2007). Some even argue that school institutions themselves, in their structures and agendas, are counterproductive to promoting environmental literacy ideologies (Gruenewald, 2003). Three main barriers exist to the implementation of environmental education in the classroom, conceptual, educational, and logistical (Ham & Sewing, 1988). Combined, these barriers prevent teachers, administrators, and the school community from extending interest beyond the conventional school agenda (Stevenson, 2007).

Conceptual barriers occur when misinterpretations of environmental education lead to its disfavor (Ham & Sewing, 1988). Included in conceptual barriers is the idea that environmental education is only relevant to science curricula; this misconception de-emphasizes possibilities for multidisciplinary use of
environmental education components. Another false impression is that environmental education must be taught as a separate subject that competes with the core or standard based subjects for time within the school day (Ham & Sewing, 1988). Schools can employ environmental education as an independent discipline, but it is often most effective when it is integrated into various subject curricula (Monroe, 1999; Palmer & Neal, 1994; UNESCO, 1978; Voelker & Horvat, 1976).

Recently identified impediments include political factors (Powers, 2004). Environmental education has often challenged the structure of the schools on an institutional level by contesting values of the status quo and national economic interests; specifically, “the socially critical and political action goals of environmental education are contrasted…with the uncritical role of schooling in maintaining the present social order” (Stevenson, 2007, p. 139). It is often difficult to approach issues in environmental education within the classroom without keen students recognizing a level of hypocrisy embedded within the system (Orr, 1992). As schools are one of the main conveyors of culture, criticism of cultural practices could lead to criticism of the very system from whence they are taught depending on the perspective of the agent (Bowers, 1993).

Differences among teacher interests can also create conceptual hurdles for environmental education implementation (Powers, 2004). Competition among instructional interests, ranging from a focus on special education to diversity training to the arts, can dampen the implementation of any single addition to existing curricula, such as environmental education (Powers, 2004). Unfortunately, many
educators do not recognize the interrelatedness of those interests so that they might make efforts towards collaboration among factions and integration of subjects (Lieberman & Hoody, 1998; Orr, 1992).

Educational barriers refer to teacher training, competence, and confidence (Ham & Sewing, 1988). On a national scale, teachers are not being adequately trained to teach about environmental issues (McKeown-Ice, 2000). Although some colleges and university teacher training programs touch on environmental education issues, many have not promoted them on an institutional level (Mann & Stapp, 1982; McKeown-Ice, 2000). Furthermore, the extent to which environmental education is incorporated into pre-service teacher education programs throughout the United States differs from institution to institution; in many cases, single faculty members drive programs’ environmental education components singlehandedly (McKeown-Ice, 2000). There is a common public misperception that students acquire environmental education from teachers with training and experience in that field; however, only a small percentage of teachers have taken environmental science courses, and even less have had specific environmental education training (Coyle, 2005). As a consequence, many teachers express insecurities about teaching environmental education without a strong background in science (Powers, 2004). This fear-based hesitation is also an example of one of the conceptual barriers to environmental education in which the teachers themselves see environmental education as a strictly scientific subject (Ham & Sewing, 1988).
The third barrier is logistical, which involves limitations in set resources within the school, such as time in the school day, preparation time, materials, funding, transportation, and class size (Ham & Sewing, 1988; Ross, 1992). Even when teachers have training in environmental education programs, the information is not always translated into the classroom instruction (Parlo & Butler, 2007). Time and money continue to be the most limiting factors in the implementation of environmental education throughout all levels of educational institutions (Dettmann-Easler & Pease, 1999; Parlo & Butler, 2007; Powers, 2004). The twofold restrictions of diminishing school funding and increasing subject standards often discourage teachers from adopting new practices, including environmental education (Parlo & Butler, 2007; Powers, 2004).

Standards further impact the ways in which time is allotted in the classroom (Parlo & Butler, 2007). It is often difficult for teachers to incorporate environmental education into a standards based curriculum, especially after the establishment of the No Child Left Behind Act (Parlo & Butler, 2007). This act, passed by the Bush Administration in 2001, focuses on school accountability measured through high-stakes standardized testing (No Child Left Behind Act of 2001). Many teachers have disclosed that preparation for standardized tests creates obstacles to integrating extra material, such as environmental-based exercises, into their lessons (Parlo & Butler, 2007). In many cases, the pressures of standards, testing, and accountability overshadow the benefits that could be gained by teaching from more locally-based educational reform (Gruenewald, 2003).
A receptive school environment is an important factor in environmental education (Sobel, 2005). Environmental education has the most impact on students’ learning when the school structure and atmosphere support the values and objectives developed by the program (Parlo & Butler, 2007). This type of support can be seen, for example, in the creation of school gardens and arboretums that provide areas for fieldwork within school grounds. Integration of local education into state standard frameworks also supports environmental education on an institutional level (Powers, 2004).

Schools provide a major mechanism for the dissemination of environmental education made available by other valuable sources (Loughland, Reid, Walker, & Petocz, 2003). Nonetheless, support from non-academic organizations is constructive in counteracting impediments to the introduction of environmental education into schools (Palmer & Neal, 1994; Suave, Brunelle, & Berryman, 2005). The next section elaborates on the support systems available to school as well as the opportunities that can be created beyond the school system when the entire community becomes involved.

Collaborations: Community Foundations for Environmental Education

This final section starts by outlining the types of resources that the community can contribute to environmental education. It then describes the importance of different types of relationships within these collaborations. Although environmental education stresses the development of relationships between humans and nature, it also recognizes the importance of human-to-human bonds, especially
within communities. The section concludes by describing how effective efforts in establishing foundations for environmental education require increased public commitment and training. The section emphasizes the role of community organizations, specifically those addressing environmental literacy, in this process.

*Cross-institutional support for schools.*

In principle, the school system provides an effective means to reach a large audience of youth. While there are many opportunities for environmental education to function within this system, it is not always easy for schools to integrate its concepts and practices to the extent necessary to produce positive environmental and social impacts. It is the responsibility of the community as a whole to fill the environmental void in the education system. Non-academic organizations can respond to schools’ needs by providing resources and opportunities related to their areas of expertise; parents and community members can commit their time and presence where adult supervision is needed; community leaders can direct their decision making towards supportive measures. Every community has a wide array of resources to offer (Ciffone, Morelock, Turner, Sivek, & Daudi, 2002).

Based upon the benefits of working within established school systems, there are many opportunities for collaboration among community-based organizations and schools. Dating back to early environmental education efforts, proponents have encouraged these partnerships. Among the main concepts identified by the Belgrade Charter are the following recommendations: environmental education should “link discipline areas relating most closely to the environment…[and] be integrated and
correlated within existing educational systems and programmes” (UNESCO, 1978, p. iii). Schools can strengthen connections with a multitude of organizations within each community, such as agricultural associations, natural resource agencies, and wildlife and plant societies (Louv, 2008).

While teachers face limitations to implementing environmental education into their classroom activities, organizations dedicated to environmental education have resources to contribute, such as curricula, training programs, volunteers, intellectual assets, and facilities (Gruenewald, 2003; Monroe, 1999). Through collaborations,

common ground between the formal education and environmental education communities…can drive program development and implementation with results that are important to both groups…Environmental educators…[are] the source of connections between teachers and students and the actual contexts, issues, and projects that become the foundation for their learning. (Ernst & Monroe, 2004, p. 520)

In times when schools have limited resources, cooperation among community affiliates promotes environmental agendas for all concerned groups (Loughland, Reid, Walker, & Petocz, 2003). For example, the National Association of Conservation Districts provides a presentation on soils and links to soil lesson plans that serve educational purposes while promoting a conservation ethic. Most natural
resource organizations, on national and local levels, offer these types of services. Often, a third party, such as a community-based organization, must take on the task of linking these resources to the classroom (Tilt, 1996). The crux of the project lies in facilitating these third party support systems, a need addressed not only in the review of literature but in interviews and experience in the field.

Collaborations between schools and higher institutions can also provide academic, environmental, and social benefits to all involved parties (Almeida et al., 2006; Ignas, 2004). Involving younger students in university sponsored scientific research gives them practical experience with research tools, scientific inquiry, and subject matter, which legitimizes their understanding and awareness of environmental issues introduced in the classroom (Almeida et al., 2006). Along the lines of place-based education and service-learning, the responsibility involved in taking part in expert research that is applied to solving real-world problems empowers students academically and socially, often prompting them to share knowledge beyond the school setting (Almeida et al., 2006; Hershey, 1992; Ignas, 2004). In return, researchers benefit from the human resources that the schools supply and students’ data collection contributes to their research results (Almeida et al., 2006). The mutual gains of students and researchers show an example of the advantages of participatory research, which considers all people as a source of knowledge capable of contributing to academia (Fortmann, 2008). Despite these gains, the intense involvement of logistical preparation for field work and projects often restricts professors’ time for outreach and organization even when they are
keen on connecting with schools and youth programs (Lewis, 2003). Connections between youth and institutions of higher learning also warrant the support of liaisons who can help with the footwork involved in the planning and implementation of collaborative projects when teachers and professors must focus their attention on more academic responsibilities.

In the case that current academic institutions do not incorporate environmental education in the classroom, alternative institutions, including governmental, non-governmental, and public organizations, from museums to social groups, need to take the opportunity to promote their supplemental programs outside of the school day (Loughland et al., 2003). These could be in the form of after-school programs, open facilities, or camps. Furthermore, these organizations can help to mobilize volunteers, generate funding, supply publicity, and engage community support. By pooling resources, partnerships among agencies can further optimize effectiveness (Tilt, 1996).

*Healthy relationships as a basis for growth.*

There is an innate need for children to share experiences with adults, especially those that connect them to nature. Fulfillment of this need requires that children have adults that they trust and respect. In the case that they are not present in children’s immediate circles, adults within their communities can fill in these roles, for “cultural change begins with individual change. And individual change, on the part of the student, begins with personal and pedagogical change on the part of the instructor,” who can be any dedicated adult (Lewis, 2005).
Building strong foundations between the youth and adult factions of the community is critical to both individual growth within young people as well as societal health in general (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). In any form of development, whether intellectual, emotional, or physical, positive adult encouragement is necessary; whether it comes from parents, teachers, or community members, “multiple positive social influences are required for an optimal learning environment” (Damon, 2004, p. 19). This being the case, communities cannot rely solely on schools and teachers to provide youth with the sense of place and well-being fundamental to productive development; community-based organizations and community members themselves can play a supportive role in this process (Damon, 2004; Heath & McLaughlin, 1994). Rather than increasing expectations for schools, the most effective environmental education will come from ongoing efforts from everyone (Weston, 1996).

While adult presence is a requisite to lasting bonds, effective conveyance of environmental literacy demands for more focused attention. In an interesting parallel to the state of the environment, today’s youth have complex, diverse needs that cannot be addressed by a single institution but which require the collaboration of multiple youth-oriented agencies (Heath & McLaughlin, 1994). Furthermore, youth development is not limited to the classroom, and recognition of the range of learning opportunities that a community has to offer is the first step in making those opportunities accessible to the youth (Heath & McLaughlin, 1994). This makes sense when many of these separate institutions share related goals and dedication to
the same cause, such as the environment; collaborations also allow for the pooling or resources among institutions (Coyle, 2005; Heath & McLaughlin, 1994). With this in mind, youth programs can extend beyond the classroom and beyond the school day into the complete lives of the students. The focus on these supportive assets is illustrative of an ecological theoretical framework, in which the promotion of a positive, nurturing environment leads to healthy individuals (Bogenschneider, 1996).

While many models of youth development begin by addressing risks within the youth’s environment, recent theories promote focusing on their strengths, positive responses, and resiliency to challenges (Bogenschneider, 1996; Damon, 2004). On a literal level, challenges within the natural environment provide many opportunities on which youth can focus their efforts leading to the discovery of their strengths and potential (Coyle, 2005). It is no wonder that the environment is the most popular focus of community service projects and programs for youth (Coyle, 2005). By providing supplemental and extra-curricular programs, community organizations can contribute to an array of community interests: youth development, environmental education, and service.

If current education systems are to integrate these aspects of place-consciousness and action, it is important to reassess measures of accountability to the place as they apply to all members of society, from administrators to students (Gruenewald, 2003). In the meantime, non-governmental organizations can continue to play a key role of providing training in concepts, purposes, and methods for
encouraging children’s participation within the community as well as strengthening community participation within children’s lives (Hart, 1992).

*Involving the public in education.*

The comprehensive nature of environmental education has consistently prompted participation from all sectors of society. Among those who have the greatest potential to contribute to environmental education are parents, professionals, and community leaders. These individuals are influential in the lives of children and the public as a whole, thus it is important that they receive training in order to effectively forward the cause. Recently, the Environmental Literacy in America Report has suggested increased public support to organizations promoting training on environmental issues (Coyle, 2005). By learning about environmental topics, people not only gain useful understanding that impacts their own lives, they also acquire an insight that they can communicate to others.

A high percentage of parents in the United States already support environmental education in schools, thus facilitating their involvement is the next step towards advancement of the field (Coyle, 2005). If environmental education occurs in school, parental involvement can take place in the home through family discussions or help with assignments; however, direct participation in environmental education can provide a more powerful form of program reinforcement (Ballantyne, Fien, & Packer, 2001). In both cases, the intergenerational sharing of information and values can yield positive developments that can extend into the greater community (Vaughan, Gack, Solorazano, & Ray, 2003; Volk & Cheak, 2003).
Training natural resource and science related professionals on how to relay issues and educate the public often gives legitimacy to environmental literacy efforts (Coyle, 2005). The importance of training this faction of the community can be seen in international and national concerns. Agenda 21’s suggestion that countries “encourage all sectors of society, including…non-governmental and community organizations, to train people in environmental management” offers important implications for environmental education support networks (Keating, 1993, p. 57). Likewise, the duties of the Office of Environmental Education include facilitating cooperation among institutions to promote environmental education programs and training for related professionals (National Environmental Education Act of 1990). Centralizing staff, such as regional environmental education specialists, to train these professionals fosters efficient conveyance professional knowledge to public knowledge (Wilke, Peyton, & Hungerford, 1980).

As influential members of society and those involved in decision-making processes, it is important that community leaders be environmentally literate (Coyle, 2005). Without support from directors at all levels of society, from school districts to state, environmental education will not proliferate in any setting (Tilt, 1996). In the case that those in high-level positions or influential occupations are lacking in environmental awareness and values, government and non-profit agencies can provide workshops and training (Coyle, 2005).

Extending environmental literacy into public realms requires a rethinking of the education system. Education can no longer be confined to schools, but must
extend into partnerships with agencies, businesses, and other community entities (Smith, 2002). For example, environmental education organizations, such as the North American Association for Environmental Education, could extend conference invitations to teachers and administrators (Powers, 2004). Furthermore, by recognizing the quality of environmental education achievements over the past decades, educators can refocus efforts on the delivery of materials, with the help of community contributors, rather than the development of new resources (Tilt, 1996).

**Conclusion**

One of the main themes of environmental education is the acknowledgement that everything on the Earth is interrelated, thus it is not surprising that the population’s low levels of environmental literacy are inversely related to the amount of environmental deterioration. As humans have lost their ties to the places they live, relationships among all forms of life have suffered. Fortunately, by rejuvenating connections, this decline can be reversed. This literature review does not investigate the causes for human disengagement with their environments, yet it reveals that ever since the recognition of that folly half a century ago, many minds have been at work to reverse its repercussions. It is apparent that efforts for environmental education are in motion; professionals in the field have assembled cohesive goals, methodologies, assessments, materials, and supports. While the pieces are in place, what does it take to activate them at the extensive levels needed to make a difference?
Reigniting interdependence between humans and other natural systems need not be a daunting task but one that is filled with wonder, intimacy, and enthusiasm. By cultivating respect for all things, including the self, environmental education has the potential to influence all aspects of the human experience. Environmental education considers student learning styles, location, culture, history, motivation, context, and content on holistic levels. Furthermore, the pedagogy draws upon the same processes for understanding that it aims to develop: multidisciplinary links, hands-on experience, and community involvement.

It is this last component to which people can relate most readily. Such a widespread issue as environmental health calls for everyone’s attention and responsibility, thus a sensible approach is to address it together. Promoting human-to-human bonds within the framework of environmental education can establish foundations for care and appreciation in other relationships. The reciprocal rewards of connecting youth to community extend to all individuals involved as well as the surrounding environment. Renewing interdependence will not only serve to repair damage to the Earth, it will mend the human spirit in the process.

The subsequent chapters speak to the need for community involvement in environmental literacy efforts. Chapter three describes the methodology for developing Project RELAY (Resources for Environmental Literacy and Youth) for intended use in northern California. Chapter four provides the content of the project, including a description of leadership positions within community-environment coordination projects, community engagement and environmental literacy.
workshops, and resources. The mission of Project RELAY represents the revived energy required to sustain and advance efforts in the fields of environmental education.
CHAPTER 3
METHODOLOGY

Introduction

This chapter frames the development of this Master’s project. Starting with the context that led to the creation of Project RELAY, a website that provides information and resources to facilitate community involvement in education, this chapter chronicles the experiences that led up to work within my Master’s project. The chapter then describes a needs assessment that I completed to determine the project’s content and finishes with a comprehensive explanation of each of the components of the website and the impetus for including them. Essentially the chapter provides a deep understanding of the work and inspiration involved in the formation of this Master’s project, which targets the issue of how to involve the community in educational efforts emphasizing environmental literacy.

Project RELAY Context

In keeping with the themes of learning and the environment, Project RELAY developed organically. The project started with foundations in my experience with environmental education and community organizations, then progressed with input from relevant literature, personal interviews, and further research into the necessary details of each section. The basis of Project RELAY began with my work as the Program Coordinator for the Indian Valley Environmental Conservation Camp, a free camp for Trinity County youth, ages eight to fifteen. The Watershed Research
and Training Center, a community-based nonprofit organization located in my hometown, Hayfork, has sponsored the program since 2001. My involvement with the camp began in 2002 with a camp counselor position during summer vacations when I was an undergraduate. I served two and a half seasons at the camp and had the opportunity to work with two different coordinators. These women served as models for me when I took over the coordinator position in 2010.

The coordinator position requires me to coordinate all of the components of the camp experience: staffing, food, transportation, facility use, program content, presenters, and activities. Within this position I also create partnerships with the local school district and other community agencies to incorporate these components within the program’s budget. In terms of the program’s content the camp is based on the model of recruiting local professionals in natural resource fields, such as wildlife biologists from the Forest Service or aquatics specialists from the Natural Resource Conservation Service, to lead educational camp activities. Engaging volunteers at this level provides both educational depth for the program as well as capacity building opportunities for youth and the community.

With support from the organization, I have worked to expand the activities of the camp, which is a summer program, into the balance of the year. Before I began this project, a representative from the organization and I met with a number of community leaders, including current and retired teachers and the superintendent of the school district, to get an idea of how our organization could contribute to youth programs during the school year. Some measures that we suggested included
bringing together human assets, program development measures, and research, among other resources. A common theme in our discussion was the need for competent staffing – caring adults willing to share their time, attention, and knowledge with students. Ultimately, we came to the conclusion that it would be most beneficial for me to work within the organization to find projects that could link opportunities within the community with students within the school systems.

Using the volunteer professional model of the summer camp, much of my work within the Program Coordinator position has focused on drawing educational support from the community to implement projects throughout the school year. My efforts this year, in addition to my past experiences in implementing environmental-based service-learning projects, led me to recognize the importance of individuals who are able to organize the activities within the school system with input from community contributors. Using the Indian Valley Environmental Conservation Camp Program Coordinator position as a prototype, I chose to develop Project RELAY as a way to guide individuals interested in acting as coordinators who will act as liaisons between schools and other organizations interested in generating educational projects.

Project RELAY (Resources for Environmental Literacy and Youth) is a site that models to the public how to be effective contributors to educational programs, both within the school system and the greater community. The site focuses on projects that foster environmental literacy, but participants can apply the content to other subjects, such as career exploration or the arts. In addition to modeling, the
site targets individuals or Community-Education Coordinators (CECs) who are interested in taking lead roles in facilitation of projects. The site provides the tools to help these people effectively act as liaisons between schools and other community institutions in order to facilitate educational projects and serves to instigate more educational opportunities between the youth and the community. These opportunities may arise from relationships created between schools and community organizations, teachers and volunteers, or students and mentors, among other connections. Project RELAY seeks to engage parents, professionals, and members of the general public who are interested in working with youth and playing a part in educational efforts throughout the community by providing the resources and skills for them to become more involved in education.

*Document analysis.*

I conducted an initial document analysis to see what type of information had guided program coordinators in my position before. I surveyed a set of binders documenting the camp since its inception. Through these documents I learned of multiple grant opportunities and sources of outreach. I also discovered many past partners who had historically contributed to camp activities and support. This exploration also led me to many sources of curricula that also informed my understanding of the process of organizing environmental education within a school system. Ultimately, reviewing past work on the camp provided insight on expectations for this type of program and new perspectives on possibilities for growth.
Interviews.

I conducted a needs assessment for Project RELAY in my target area by interviewing integral members of the school system. I chose my interview participants through purposive selection related to their roles within that system. Through these interviews with the county Assistant Superintendent of Curriculum and Instruction and the district’s superintendent, principals, and school counselor, I identified the following themes: schools welcome community-based or environmental projects; there is a need for a community liaison to keep a pulse on community opportunities for student engagement; teachers have too much on their plates to link projects with school standards, curriculum and activities, and community partnerships; and the area has a great need for building mentoring relationships between youth and positive role models as well as exposing youth to positive diverse experiences. Although many of the student needs addressed by the interviewees were specific to the circumstances and demographics of the area, the themes pertinent to Project RELAY were universal. In regard to training liaisons or coordinators, interviewees mentioned the importance of imbuing the person in that position with a sense of the demographics and culture of the area.

Although my interview participants did not directly identify environmental literacy as a critical student need, they recognized the validity of the environment as a lens through which the fundamental needs of students can be addressed. They specifically noted the encompassing nature of environmental, place-based, or service-learning projects and their ability to expose students to careers, role-models,
new experiences, and skills. I explain the manner in which these interviews informed the content of my project in more detail as I refer to the specific content later in subsequent sections of this chapter.

I also interviewed a professional in the natural resource field to gather the perspective of how others in the field might respond to increased partnership opportunities with schools and training in respect to facilitating those opportunities. This participant communicated that he and many of his colleagues were interested in working with youth; however, he noted that much of the work that these professionals do in this capacity is volunteer work imparted on their own time. From his perspective, much of the limitation in connecting natural resource professionals came from difficulty in gaining clearance from supervisors.

The natural resource participants identified the need for leadership training for those who currently work with youth programs. Some community members work very well with youth and establish a great rapport because they are in tune with the culture and are familiar to the students, but they may need training in proper leadership, such as not perpetuating negative behavior or promoting safety and respect. Furthermore, trainings could provide individuals with the skills necessary to transfer their presence as role models towards relaying knowledge and the application of the modeled conduct. In other words, many professionals as well as students could benefit from a training to help them understand the bigger picture of shared experiences created through programs. This interview also helped to confirm the need for a training project.
In order to gather information about developing and implementing environmental education projects, I interviewed the founder of a successful environmental education program developed in the area. I was gratified to learn that when her program was at its height, they had over a hundred coordinators situated throughout the state. Although Adopt a Watershed trained coordinators to facilitate its specific program, much of the training methods were very informative to my project. I referred to the Adopt a Watershed Coordinator Training Binder for many sources of advice developing the role of Community-Education Coordinator and engaging community players.

Applying this background information, I developed a website to bring the issues and informational content into a public channels. I approached the site with the following aims: to demonstrate effective programs and projects, to encourage community participation in current and prospective programs and projects, and to provide training for participants. The next section outlines my reasoning for the elements of the Project RELAY site.

*Project Content*

I chose to present Project RELAY through a website because I feel that this is the most effective means of reaching a broad audience. As the program develops capacity to do outreach, the website will efficiently communicate its goals, procedures, and resources. In terms of training Community-Education Coordinators and mentors, a web-based medium is widely accessible to those interested in
pursuing that role in their communities. Furthermore, electronic media are consistent with Project RELAY’s principles of conservation of resources.

I put effort into designing the Project RELAY logo as a masthead for the site. I felt that this was important to establishing validity within the web and providing a graphic reference that could be used to promote the site and its ideals. The logo features a bee visiting an apple blossom and also incorporates the apple tree visited by an adult and child. Each of the images contributes to symbolism that speaks to Project RELAY’s message and goals. The apple is the most traditional symbol of education; however, for the logo I wanted to place it within the context of the systems required for its growth. The bee pollinating the blossom represents fertilization, not only literally from a scientific point of view relating to environmental literacy but also figuratively in the sense of fertilizing ideas and values. The tree has roots in environmental imagery as well as notions of knowledge and strength. Finally, the figures of the adult and child sharing the apple speak to the concept that everyone benefits from the fruits of education, and that education is a community responsibility. As a whole, the logo expresses the three concepts that have driven my project: environment, education, and community.

The site’s homepage welcomes visitors by describing its purpose and ideals. I maintained the theme described above to introduce each of the subsequent pages. Although I designed the site with a loose sequence of pages, the homepage does not rank order of pages, thus visitors can navigate the site in order of their interests.
I included a page about Project RELAY in general. This About page describes the impetus for the site’s creation and focuses on the need for community members to take a role in youth and education programs in a time when much of the education system is failing. I intended this opening statement to be motivational and inspiring in order to spark interest in the program and the rest of the site. As a means of securing the potential for Project RELAY to be its own entity, I included a mission statement that would facilitate program transformation into a non-profit organization. I explain the purpose and uses of the site in order to engage sponsoring agencies, or those who may support or apply the position of the Community-Education Coordinators (CECs), and to describe the CECs role. This description also helps to take the pressure of the training off of the sponsoring agencies’ responsibilities. The “Purpose and Possible Uses of This Site” statement describes to these individuals or organizations how the site might be useful to promoting their efforts.

The Model Program pages showcase the Indian Valley Environmental Conservation Camp as an effective means of joining community, environment, and education in youth development efforts. It also has the dual purpose of promoting the Indian Valley Environmental Conservation Camp. In these pages I described the history and purpose of the camp using information from interviews with Watershed Center employees as well as the woman who wrote the initial grant to start the program ten years ago. I looked to grant applications that I have recently written to help explain the purpose of the camp in an engaging yet practical manner; in other
words, I was seeking appropriate language for promoting the program. I also included a detailed explanation of the types of support that help to maintain the program. I felt that this highlighted the most important aspect of the camp being a community-supported program. I also wanted to take advantage of an opportunity to thank our many partners; I provided direct links to many of these organizations and businesses in an act of reciprocal support.

A second page within the Model Program section describes the camp’s principal elements, which include community, education, healthy lifestyles, skill and confidence building, and teamwork and communication. Although these elements are specific to our program, they serve as an example of how other programs can develop around core concepts determined by each community.

A Model Project page serves to provide a case study of a multi-partner community project. The Model Project described in the content is based on an actual project in an incubation stage. The real project is located in Hayfork and is one of the inspirations for Project RELAY. The project has generated interest from many contributors, but currently coordination duties have fallen on those who already have their plates loaded with responsibilities from their principal vocations. I recognized the need for central coordination and a position with a plate devoted to this project and its educational aspects.

In my description of the model project, I define community projects with broad applications for any interested parties. I describe the model project with specific details about partnerships, benefits, and implementation strategies. I
gathered information for these descriptions from my past experiences working with collaborative environmental-based projects. I also referred to brainstorming sessions held by the organization for which I work, which is developing the project.

I included an entire section on community coordination, in which I outline the steps towards achieving Project RELAY’s main objectives. This section includes information for volunteers to capture their interest as well as to notify them of possible opportunities for which to look within their communities. I used my experience working as a Community-Education Coordinator myself to supply the opportunities, such as connections with existing school programs and community programs. I also include a full description of relevant topics and pedagogies with which volunteers and participants should be familiar: the education system, student learning, environmental education, place-based education, and service-learning. Within these descriptions, I drew on information I had discovered while doing my literature review and coursework. I included basic information about school systems because inevitably schools will be major partners in project efforts. Many of my sources, including the literature, the Adopt a Watershed Coordinator Training binder, and my interviews, stressed the importance of understanding and being respectful of the school system and its requirements. State standards and school operations are some of the formal aspects of the education system that the district superintendent and elementary school principal emphasized. While student learning is a broad subject on which entire courses of study are based, I include a description of fundamental topics, stages of development and multiple learning styles. Many
environmental education curricula refer to these topics in their training programs and curricula. The Theory of Multiple Intelligences also guides much of program development in educational fields, particularly those that extend beyond the classroom. Due to my experience as an AmeriCorps member, I wanted to impart information about mentoring which can often be a simple yet significant way to engage with youth.

The bulk of the *Community Coordination* section contains the stages for planning and implementing community projects. *Stage One: Establishing Foundations* provides the first steps of this process with a focus on an individual or small group that might spearhead the project. I chose the title “Community-Education Coordinator” to encompass the main objectives of the position: to engage the community in education. I decided not to incorporate the environment in order to maintain flexibility within the position. Although Project RELAY aims to promote environmental literacy, its course of action can be applied to other topics, such as the arts or health, on which coordinators can still use the website to concentrate. Furthermore, the word *environment* has negative connotations depending on the area; thus, I preferred to avoid including it in the title of a key player in community organization.

Many organizations, institutions, and agencies have education positions budgeted into their programs; however, Project RELAY is focused on attracting those who are interested in reaching out to their communities for support in education through a coordinator. This position is not centered on promoting the
organizations’ agendas; thus, it requires only sponsorship from an organization rather than full-on training and development. Organizations benefit from their associations with the community development and environmental conservation projects that CECs coordinate, and so this is what I explain that in this section.

Although it is most effective if the holder of the coordinator position is from the area of project implementation, this cannot be assumed. It is important to get the individual in touch with the area and its needs. Many of my interviews with members of the school system emphasized the importance of understanding the area, and these greatly influenced the amount of detail I put into the importance of investigating the community. At one point, I asked a principal of a school with what community resources the school has connections. She replied that she was not aware of any community resources. This comment demonstrates that a principal’s duties do not always include community outreach and that this function must be outsourced in many cases.

Aside from gaining an understanding of the social factors within a community, I wanted potential coordinators and participants in community projects to have a sense of the environment in which they would be working. I thought that the bioregion quiz would give people a quick way to assess their level of knowledge and to see what a complete understanding might involve. Furthermore, it introduces the types of information needed to have a complete grasp of the local environmental concepts necessary for promoting environmental literacy. In his book, *Last Child in the Woods*, Richard Louv stresses the importance of knowing natural history and the
frequency that it is lost; I felt that this was an important statement to acknowledge within the site.

My interview with a woman who had led trainings for volunteer coordinators throughout California prompted me to include locating cultural leaders within this stage. The woman I interviewed described these people, who include superintendents, influential teachers, and others with strong presences in the educational community, as integral players in gaining access to the entire institution. Gaining their support would be vital to implementing any type of project.

Much of *Stage Two: Making Connections* is based on my interview with the founder of a successful environmental education program from the area. Throughout her career, she developed a program and trained coordinators in California. Through questions about her experience and the use of an extensive Coordinator Training Binder, I developed the major actions to include in the site. The first step, partner identification, has also been an important one in my own experience in developing environmental education and service-learning projects. My interviewee identified the three main partner groups involved in environmental-based projects: educators, natural resource professionals, and community members and organizations. She made a point to describe each group’s distinct role in the process. A project advisory council, mock project session, and communications session were also aspects of the Coordinator Training Binder that I had seen in similar contexts within my literature review and AmeriCorps training publications.
Similar to Stage One and Stage Two, this section focuses on CEC efforts, although multiple members of sponsoring agencies may take an overarching role. I began *Stage 3: Project Implementation* with fundraising because it is a major component of any program. I referred to the U.S. Fish and Wildlife Service’s Schoolyard Habitat Project Guide to separate the funding sources into distinct categories. I focused on donations, grants, and fundraising because these are the methods that I use in supporting the Indian Valley Environmental Conservation Camp.

Although I include a separate page for volunteers, I have a “Volunteers” section on this page that speaks to those who are planning on leading volunteers as opposed to being a general volunteer themselves. In writing this section, along with the following sections, Safety and Logistics, Training, Students, and Documentation, I looked to my experience as an AmeriCorps member. Within this position, I had many opportunities to be a volunteer and take part in volunteer organization. My training as an AmeriCorps member also covered many of these topics. The final section of this stage, Follow Up, describes measures that many service-learning and project implementation handbooks emphasize for wrapping up a project in an appropriate manner.

The *Resource* page presents web links, printed references, and curricula. I was excited to be able to include direct links within the website that relate to the project and its extensions. On the links page I include sites connected to Project RELAY’s themes, such as environmental education, volunteer opportunities, related
programs. I linked to sites that I have used or come across in my studies in environmental education and community development, in my work as a coordinator, and in my searches for grant funding. I made an effort to focus the sites on northern California related programs and resources since my site is directed towards local populations. The *Printed References* page includes sources that have been helpful to me throughout this project. I also incorporate classic and influential work in the field, such as the books written by Joseph Cornell, David Orr, and David Sobel. The *Curricula* page presents direct links to useful curricula that is accessible to everyone. I feel that this provides a valuable asset for this site.

**Conclusion**

Just as Project RELAY developed organically, the web-based media format will allow it to continue to evolve and mature. As the featured program and project change, I will update the site. I am also open to feedback, and will consider any comments directed towards the site-affiliated email address to make improvements or adjustments as time goes by.
CHAPTER FOUR

CONTENT

The enclosed disk on the back cover contains the contents of Project RELAY.

It can also be viewed at www.projectrelay.org.
CHAPTER FIVE
CONCLUSION

Limitations of Research

Despite its intended significance as a general resource, Project RELAY has its roots in Trinity County. As a project that advocates place-based learning and utilization of local resources, its development has been ingrained with influences from my own environment. Within this context research has been limited to the experiences and perspectives of those involved in education within the borders of the least populated county in the state of California. As input from this area may seem to come from isolated and unconventional sources it offers a unique interpretation of community and the ways in which its elements interface with each other. Furthermore, the research that has gone into Project RELAY has also drawn on the work of leading contributors to the field of environmental education and literacy, placing it within a broader frame of reference relevant to more universal operations.

At this time, Project RELAY provides only models, recommendations, and resources for interested parties to implement community-based environmental literacy programs; providing the impetus for wide-spread action requires another set of efforts. While there are already numerous projects akin to the ones presented within the Project RELAY website, it takes more than model inspiration to actually facilitate the establishment of new ones. By publishing the website as an easily
accessible medium, this Master’s project has established a strong foundation for future efforts towards its large-scale objectives.

**Implications for Future Research**

This project yields many implications for research regarding community involvement in environmental literacy efforts. Expansion of the issues that drove my project imparts the following questions: How often do schools utilize community resources? How can schools and communities connect more effectively? What are the impacts of community involvement on student learning? How does participation in community projects influence student perceptions of sense of place? In-depth exploration of questions such as these will serve to illuminate and inform efforts related to Project RELAY’s mission.

Successful expansion of Project RELAY will require considerable promotion. The first steps towards increasing publicity will include revealing the website through web-media marketing and social networking. Word of mouth is also an effective means of sharing the site and its message. As I network with colleagues within the field of environmental education, it is important that I bring attention to my efforts in this area. Documentation of site related successes, such as progress within the model program and project, will also help to publicize the efforts; online updates as well as press releases to local newspapers are simple yet effective methods of exposure.

With more support, Project RELAY has the opportunity to grow from the site into a more comprehensive program. Using the models already established within
my hometown, Hayfork, CA, my ultimate goal is to promote the project and its objective within multiple regions so that every community can foster advocates for environmental literacy and youth. While the website provides examples, tools, and resources, I would like to expand those elements into workshops and trainings that would give participants first-hand experience in keeping with the project’s goals. These workshops would be directed at those interested in leading volunteer efforts within their communities, a position I have defined as Community-Education Coordinators throughout this project. Helping to develop this as an established position within school districts is another long-term aspiration for the project.

Within this position, Community-Education Coordinators could help create partnerships between school, governmental, and community organizations; instigate and organize a certified pool of volunteers; and develop programs and projects. A consistent and active presence is key to expanding Project RELAY and the reach of its message.

Eventually I would like to obtain non-profit status for Project RELAY, which would give the project more authority as an environmental literacy advocate as well as open it to the benefits of non-profit organizations, such as grant opportunities. As an autonomous non-profit organization, the program would be able to apply for federal and private grants. These would serve to cover administrative costs and promote outreach and trainings to different communities. Another service that I hope the program would provide down the road would be the presentation of its own
grants, stipends, or scholarships to establish or promote community projects affiliated with Project RELAY throughout participating regions.

Conclusions

I have already felt a sense of achievement in using my own site within my work. Through its catalogue of resources, I have been able to easily access links to pertinent sites, organizations, and information. Even since I have launched the site, I have added relevant links that I have come across while exploring materials for other projects related to my work. I am eager for others to utilize the service that the site provides.

The elements of successful educational projects lie latent in every community. Inherent resources exist within institutions and individuals along every street. Opportunities for learning steal into the periphery of our visions and our thoughts. Akin to ecological systems, these elements work best when working together; effective organization requires an interdependence of efforts, instruments, and participants that meld to become greater than the sum of their parts. Effectively, Project RELAY provides the tools for organization and implementation of projects; moreover, it is intended to catalyze communities’ educational assets and set them in motion to benefit youth. This project intends to relay the commitment to our treasured spaces and the confirming experiences that transpire within them.
APPENDIX

Figure 1. Project RELAY’s homepage.

Figure 2. The About page with basic information about Project RELAY, including its mission and uses of the site.
Figure 3. Footer on the *Model Program* page featuring the Indian Valley Environmental Conservation Camp.

Figure 3. Links to related sites and resources.
REFERENCES


doi:10.1080/13504620220145401


