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An Evaluation of Teton Science School's Journeys Place-Based Education Program as Effective Environmental Education Teacher Training

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AN EVALUATION OF TETON SCIENCE SCHOOL'S JOURNEYS PLACE-BASED EDUCATION PROGRAM AS EFFECTIVE ENVIRONMENTAL EDUCATION TEACHER TRAINING

by

John Hayes

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

In

Forestry

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2001
ABSTRACT

An Evaluation of Teton Science School’s Journeys Place-Based Education Program as Effective Environmental Education Teacher Training

by

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Utah State University, 2001

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This thesis is an analysis of survey research data evaluating Journeys, a place-based environmental education teacher inservice training program developed and administered by Teton Science School. Information gleaned from stakeholder interviews was used to develop the specific evaluation questions. A self-administered mail survey was then sent to all teachers known to have received Journeys training.

Nearly all trained teachers go on to use Journeys with their classes, and show a commitment to making Journeys a permanent part of their classroom. Teachers generally agreed that their involvement with Journeys has had positive effects on their teaching behaviors and attitudes towards teaching. In particular, Journeys increased their enthusiasm for teaching and their effectiveness as teachers. Teachers believe their involvement with Journeys has increased their students’ enthusiasm for learning, helped them learn about their place, and helped them connect to their place. Journeys appears to be an effective interdisciplinary program, helping teachers teach a variety of different
subjects. The most significant barriers to implementing *Journeys* are a lack of time to conduct activities or to prepare for *Journeys* activities. Answers for open-ended questions revealed that many of the program support components such as site visits, materials provided, and additional follow-up workshops are largely responsible for the popularity of *Journeys*. *Journeys* teachers show a strong affinity for the program’s philosophy, though it is unclear what specifically is attractive about this philosophy. *Journeys* appears to be most effective with K-3 teachers.

This thesis supports the notion that place-based approaches to environmental education teacher inservice training are effective. This thesis also provides information that can be used to further develop the *Journeys* program, and contributes to the literature on place-based education and teacher training in Environmental Education.
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John Hayes
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The ultimate goal of environmental education (EE) is:

To aid people in becoming environmentally knowledgeable and, above all, skilled and dedicated people who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment. (Hungerford, Peyton, & Wilke, 1980, p. 43)

Proponents of EE realize that formal educational institutions need to be involved in order to achieve this ambitious goal. Hence, the training of classroom teachers has been a priority of EE since its inception over 30 years ago. Although teacher training was an early mandate in EE, a recent report assessing EE in the United States suggested that it is still not a priority across the country, and professional development for teachers needs greater support and improvement (National Environmental Education Advisory Council [NEEAC], 1996).

EE professionals at all levels have succeeded in offering classroom teachers a variety of activity packets, curricula, and field trips. Yet, despite the abundance of supplemental opportunities, EE has still not effectively taken hold in many of our nation’s schools. Consequently, our students are being short-changed on what is a vital part of their education, and the ultimate goal of EE remains elusive. Lack of money, knowledge, time, administrative support, and several other barriers have been identified and have left environmental educators searching for more effective approaches – approaches that engage and prepare classroom teachers to meaningfully teach about the environment.
One promising approach is "sense of place education," or "place-based education." The increasing use of these terms in both formal and nonformal education circles is an indicator of the potential and growing popularity of this pedagogy. Teton Science School (TSS), located in Kelly, Wyoming, has developed a teacher-training program that uses place-based education as its foundation. Journeys is an interdisciplinary education program designed to provide classroom teachers the training and support needed to incorporate place-based education techniques into their classrooms. Specifically, Journeys attempts to train teachers to develop a sense of place along with their students through an exploration of the natural history, human and cultural history, community, and other facets of their place. It is believed that developing a sense of place in students gives them a context for understanding and participating in their natural and human environment, or in other words, helping them become a part of, rather than apart from these environments.

Several communities throughout the Intermountain West use Journeys and it is quickly spreading across the country (personal communication, S. Archibald and TSS faculty, June 2000). Anecdotal reports from teachers indicated that Journeys has been successful, but the details of why it is successful and what makes it successful are vague. For Journeys to be a truly viable approach toward teacher training, it needs further examination.

Despite the importance of teacher training, finding ways to infuse EE into the classroom is still a priority for environmental educators. Most of the previous research has focused on identifying weaknesses in teacher training, and categorizing barriers to implementation of EE in the classroom. The results of these studies suggest that EE
teacher training in the U.S. is inadequate in quantity and/or quality. This implies that there is a need for new approaches toward EE teacher training. Placed-based education shows promise as an effective means of reaching classroom teachers. However, though some literature exists on the theory of place-based education, there is very little research on the effects of specific place-based education approaches. Research on specific place-based teacher training programs also is scarce, and consists primarily of descriptive case studies, offering theoretical models and suggesting improvements for teacher inservices rather than measuring the effectiveness of those models. The current study is designed to provide a description of Journeys as a teacher inservice in EE, and to measure the impact of such a program.

An evaluation of Journeys will benefit both TSS and the EE field. TSS will benefit from an evaluation of Journeys by having a basis to make informed decisions about the future of the program. This includes 1) further curriculum refinement, 2) further refinement of training, and 3) potential marketing and grant reporting for Journeys. In a broader sense, the field of EE will benefit from this research by gaining a better understanding of place-based education as an approach to effectively infuse EE into schools.

The effectiveness of Journeys will be evaluated by describing Journeys teachers and schools, and by exploring the influences of the program on teaching attitudes and behaviors, its strengths and weaknesses, and teachers’ perceptions of the influence of Journeys on their students. Specifically, the study will attempt to answer the following questions:

• What are the characteristics of Journeys teacher participants and schools?
• How have *Journeys* teachers been trained?

• What is the level of commitment to the use of *Journeys*?

• What is the perceived influence of the program on teachers’ attitudes toward teaching, and teaching behaviors?

• What are the teachers’ perceptions of the influence of *Journeys* on students?

• What subjects does *Journeys* help teachers teach?

• What are the barriers to implementing *Journeys*?

• What are the strengths and weaknesses of the program?
CHAPTER 2
LITERATURE REVIEW

To understand the current nature of EE teacher training it is important to understand what limits the use of EE in the classroom. For organizational purposes, this discussion of the literature is presented as such: characteristics of EE teacher training, barriers to EE, evaluation of teacher EE inservice training, and place-based education.

Characteristics of EE Teacher Training

Much of the literature in EE has recognized the importance of EE teacher inservice training, and improving EE teacher training is a widely accepted goal. A report assessing EE in the United States, done by the National EE Advisory Council (NEEAC, 1996), listed several issues and challenges which still need to be addressed in EE. The most relevant issues to this study were that “EE is not a priority across the country” (p. 14), and “professional development for teachers and non-formal educators needs greater support and improvement” (p. 15). The report suggests that despite a plethora of EE programs and materials, widespread support and funding for EE is lacking. The report goes on to say that many do not see EE as part of mainstream education but rather a supplemental curriculum. Related to lack of widespread support for EE is the lack of support and quality of professional development in EE for teachers. The report says that one of the most cost-effective ways to improve EE efforts in the U.S. over the long term is to improve the quality of the EE preservice and inservice training of teachers. The report concludes that although several good programs exist, EE teacher training is inconsistently available (NEEAC, 1996).
Volk, Hungerford, and Tomera (1984) surveyed members of professional EE organizations to assess the EE curriculum needs in the United States. They concluded that the goals of EE are considered important at all academic levels, but professional environmental educators did not believe the goals of EE were being met with existing curricula. They also supported the need for teacher inservice training aimed at EE goals and curricula at all academic levels (Volk et al., 1984).

Lieberman (1995) surveyed forty-three federal, state, and local agencies, non-formal education facilities, nongovernmental organizations, professional associations, and academic institutions involved with EE to get an overview of existing EE programs in the U.S. Lieberman found that the organizations surveyed felt that providing curriculum materials and training teachers were the two highest priorities, while helping teachers develop their own curricula ranked low. Most of the organizations participating in the study were at the state level or higher. Site-based school programs were rare and state EE coordinators found it difficult to identify successful “model schools.” This seems to indicate a top down approach to teacher training, rather than a local grassroots approach. The average length of teacher training was 2-4 days (often weekend workshops), and most of the organizations conducted formative evaluations to refine their training programs. Additionally, most of the organizations reported that they provide follow-up support after training in the form of newsletters (most common), e-mails, telephone contact, curriculum updates, site visits, and follow-up workshops. Most teacher training focused on K-6 teachers (Lieberman, 1995).

Lane, Wilke, Champeau, and Sivek (1994) attempted to assess teacher involvement in EE. Their survey of 915 teachers in Wisconsin, where EE is mandated,
showed that 30% of the respondents reported not teaching about the environment at all. They also found that more EE training translated to more time spent on EE in the classroom (Lane et al., 1994). A similar study of Illinois teachers using the same survey instrument showed that 65% of the respondents indicated they were not infusing EE into the classroom (Smith-Sebasto & Smith, 1997). They also encourages continued research to assess teachers’ preparation to teach EE using similar studies and comparable methods.

Wade (1996) surveyed environmental educators to investigate the current practices of EE inservices for K-12 teachers in the US. She found that EE inservice education tended to be 1) activity based, 2) nationally produced, 3) science oriented rather than interdisciplinary, and 4) concerned more with content rather than educational context. Wade argued that what to teach is emphasized far more than how to teach. This is most likely related to her finding that state natural resource agencies are the most prominent providers of EE teacher inservice training, and hence personnel conducting training are more often scientists or resource managers rather than trained educators. Wade (1996) summarizes the shortcomings of EE inservices in this way:

Teachers are spoon-fed prepackaged activities and treated as curricular consumers rather than professional educators. Rich learning opportunities afforded by the local community and teacher involvement in curriculum research and design are preempted by effective marketing and dissemination of products that treat all teachers, students, classrooms, and communities alike. (p.14)

Middlestadt, Ledsky, and Sanchack (1999) also found that most of the time elementary school teachers spent teaching EE was spent during science class. They also found that 97% of teachers had taken at least one EE course or workshop at some time in the five years preceding the study. Contrary to Wade’s (1996) findings, the most frequently mentioned sponsors of EE training were courses at or assisted by a school
(15%), and the second most frequent were nationally produced curricula such as Project WET, Project WILD, and Project Learning Tree.

**Barriers to EE**

A considerable amount of research has focused on factors preventing teachers from implementing EE in their classrooms. Ham and Sewing (1987) interviewed elementary teachers in Washington and Idaho to determine their perceived barriers to implementation of EE. Using previous research, Ham and Sewing (1987) grouped barriers to EE into four categories: conceptual, attitudinal, logistical, and educational. The following discussion is organized in a similar fashion. Although these categories will be discussed discretely, it is important to realize they are interrelated, and often one barrier is tied to another.

**Conceptual Barriers**

A lack of understanding about the scope, goals, and content of EE is considered a conceptual barrier. Several studies have found evidence of conceptual barriers. Samuel (1993) used a case study of a Canadian school in Ontario to examine the implementation of an EE program. She revealed that teachers' understanding of the philosophical and pedagogical nature of EE was essential to successful implementation.

One of the most common beliefs about EE is that it is most relevant to science curricula. Several studies have found that teachers either believe EE is science oriented, or that most of the time spent on EE is during science class (Ham & Sewing, 1987; Middlestadt et al., 1999; Wade, 1996). In a study of Wisconsin teachers by Lane et al. (1994), respondents were asked why they did not teach about the environment. The most
common responses were that EE did not relate to their subject area, and having lack of background in EE. Ham and Sewing (1987) found that teachers believe EE is science oriented. When asked what would influence them to infuse EE concepts, 30% of teachers indicated inservice training and 26% said improved access to resources (Ham & Sewing, 1987).

Attitudinal Barriers

Attitudinal barriers stem from the attitudes teachers have toward EE. Jaus (1978) found that teachers' attitudes toward EE are important factors in determining how much EE is taught in their classrooms. Not surprisingly, teachers with negative attitudes toward EE do not teach EE. She also indicated that EE training positively affected teachers' attitudes toward EE. Teachers who received EE training scored higher on attitude measures when compared to a control group, and those teachers indicated they planned to spend more time on EE in their classrooms. However, Jaus (1978) did not measure how much time teachers actually spent on EE.

However, a positive attitude alone may not be enough to indicate a commitment to teaching EE. Lane et al. (1994) found that teachers in Wisconsin agreed EE should be considered a priority in their school system, and teachers' overall attitudes toward EE were high. They also found that the amount of class time devoted to EE was related to a teacher receiving multiple EE inservice courses (Lane et al., 1994).

McCaw (1979) asked teachers in Ohio to rate "nonbasic" parts of their school's activities, and EE placed very high. They found differences between elementary and secondary education, with a decreasing emphasis on EE at the higher-grade levels. Principals in secondary schools were not as likely to be supportive of outdoor use.
Teachers considered EE important, but other nonbasic activities such as those related to consumer and vocational education were considered more important at the higher grades.

**Logistic Barriers**

Logistic barriers stem from a lack of one or more resources. Ham and Sewing (1987) found that a lack of time was the most influential barrier facing implementation of EE. Teachers reported that other curricular responsibilities made it difficult to offer EE, and there was a lack of preparation time. Other logistical barriers such as lack of funding and materials also were reported. Many of the logistic barriers identified were specifically related to the teacher's ability to teach in the outdoors, or to lead and organize field trips. McCaw (1979) found that transportation problems were the most significant problems preventing study trips.

Lieberman (1995) also studied logistical barriers to training teachers by surveying 43 federal, state, and local agencies, nonformal education facilities, non-governmental organizations, professional associations, and academic institutions. He found that these organizations reported a lack of funding, lack of teacher time, lack of training staff time, and administrative support were the limiting factors to the expansion of training programs. Respondents believed that overcoming these barriers was directly related to the commitment level of the school toward EE. In other words if schools are committed to EE and it is a priority, then barriers are more likely to be overcome.

**Educational Barriers**

Educational barriers stem from a lack of knowledge of EE concepts and how to effectively teach them. Buethe and Smallwood (1987) surveyed 500 Indiana teachers to
assess their knowledge of their physical environment and related energy problems. They found that the teachers' environmental literacy regarding these topics was limited, but had increased from 1975 to 1985 (Buethe & Smallwood, 1987). Similarly, Ham and Sewing (1987) found that teachers felt they lacked sufficient background knowledge in EE. In a study of factors that influence Ohio elementary teachers' use of outdoor classrooms, Mirka (1973) found that teachers not using the outdoors ranked top reasons they did not do so as 1) inability to recognize school site as a teaching area, 2) insufficient knowledge of activities that can be used outdoors, and 3) unavailability of curricula. In contrast, in their Wisconsin teacher survey Lane et al. (1994) indicated teachers felt they had adequate EE knowledge, but 30% reported not teaching about the environment at all. Similar results were found among teachers surveyed in Illinois by Smith-Sebasto and Smith (1997). Additionally, Lane et al. (1994) found that when EE is incorporated, teachers tended to focus on the cognitive aspects of EE, and affective and behavioral components are overlooked.

Evaluation of Teacher EE Inservice Training

Few studies have attempted to provide measures of effectiveness of specific EE teacher inservices. Ham, Rellergert-Taylor, and Krumpe (1987) looked at the effects of an inservice workshop designed to reduce barriers inhibiting teacher implementation of EE identified in a previous study (Ham & Sewing, 1987). Using pre- and posttraining surveys, they found that the workshops reduced some but not all barriers to EE, and that these workshops led to an increase in the number of teachers implementing EE. Ham et al. (1987) suggested that future research focus on whether similar workshops in different
regions would produce similar results, and that similar attempts to reduce barriers be examined. They recommended that future EE workshops be improved by focusing on the presentation of additional nonscience-oriented materials, and by providing time, materials, and assistance in incorporating EE into present curricula. However, their study was limited to a small population size (N=26) of teachers in Idaho and Washington.

In a similar study, Bethel, Ellis, and Barufaldi (1982) investigated the effects of an environmental science education inservice on teachers’ views of science and attitudes toward environmental science. They compared pre- and posttest scores of teachers enrolled in an EE science education course with those of an equivalent control group that did not participate in the program. The program included 32 classes and 2 field trips. Classes included lectures, demonstrations, and presentations followed by laboratory sessions designed to introduce teachers to environmental science education materials and activities. They found that this inservice program had positive effects on teachers’ attitudes toward environmental science. There was a significant difference in attitudes toward environmental science between the equivalent control group and those participating in the program.

Lane, Wilke, Champeau, and Sivek (1995) analyzed the same data collected from the Wisconsin teacher survey mentioned previously (Lane et al., 1994). Teachers reported that the EE training they received was effective in teaching cognitive EE methods, but they were undecided about the training’s effectiveness in teaching affective education methods and environmental action strategies (Lane et al., 1995). They recommended that EE teacher education efforts pay more attention to all components of EE. It is important to note that this study did not identify explicitly different approaches
to EE teacher training. Therefore, the effectiveness of a single approach was not measured.

**Place-Based Education**

The underlying theory of place-based education is examined here in five sections: the general concept of place, the importance of place attachment and having a sense of place in society, how the current education system detaches students from place, the benefits of place-based education and how they are related to the goals of EE, and evaluation of place-based approaches to EE teacher training.

**Place Attachment and a Sense of Place**

Sanger (1997), defined sense of place: "Sense of place refers to an experientially based intimacy with the natural processes, community, and history of one’s place" (p. 4). The underlying theory of place-based education is rooted in the concept of place attachment. In simple terms, place attachment refers to the "bonding of people to places" (Low & Altman, 1992, p. 2). Early analysis of place attachment focused on the emotional experiences and bonds between people and places (Low & Altman, 1992). Scholars explored the diversity of the meaning of place attachment, revealing great complexity. Many concluded that place attachment is multidimensional, and consists of many related but different phenomena (Low & Altman, 1992). Low and Altman (1992) summarized the complexity in this way:

[Place attachment]...is a complex phenomenon that incorporates several aspects of people-place bonding. This means that place attachment has many inseparable, integral, and mutual defining features, qualities, or properties; it is not composed of separate or independent parts, components, dimensions, or factors. (p. 4)
To elaborate, Low and Altman (1992) offered a list of fundamental aspects of people-place bonding, each of which are relevant to the understanding of pedagogy of place-based education. First, they suggested that affect, emotion, and feeling are central to the concept of place attachment. Indeed the word “attachment” in this context implies affect and emotion. Nonetheless, they are careful not to overemphasize the emotional nature of place attachment, and point out that many have suggested that emotions are often followed by cognition, and then by behavior. In a similar vein, Proshansky, Fabian, and Kaminoff (1983) suggested place attachment involves an interplay of emotions, knowledge, and behaviors in reference to place.

The second aspect pointed out by Low and Altman (1992) is that the concept of “place” itself varies in terms of scale, size, scope, tangible versus symbolic, known and experienced versus unknown and not experienced. Third, place attachment can refer to bonding between individuals and places, families to places, communities to places, and eventually whole cultures to places. Thus, another layer of complexity can be seen in the variety of collective group place attachments that may shape individual attachment, or potentially transcend them. Fourth, place attachment of an individual or a group probably incorporates social relations involving family, friends, and community. Therefore, the attachment process is not only a function of the physical place and immediate surroundings but is also a function of the other people in that place and the corresponding social interactions that make up that place. Fifth, there is a temporal element to place attachment. Social, environmental, and even political history of a place may be significant influences on the development of that place and subsequent attachment individuals or groups might develop to that place.
The Role of Place Attachment in Society
and Education

Low and Altman (1992) suggested that place attachment serves a variety of functions at several levels. At one level, place attachment may provide security because one's surroundings are more predictable after an attachment has been made. Increased security may provide an opportunity to relax from more pressing tasks, and allow one to be stimulated through pursuits that are more creative. At another level, place attachment serves as a social link that may bond family and friends or may link people to entire cultures through symbols of a shared place (Low & Altman, 1992). Proshansky et al. (1983) summed up the psychological and social functions of place attachment by stating: “Through personal attachment to geographically locatable places, a person acquires a sense of belonging and purpose, which gives meaning to life” (p. 60). This process of place identification is unconscious, involving affect and emotions, as well as knowledge and beliefs, and behaviors and actions. The authors go on to argue that because the development of place-identity begins at an early age, children in particular gain knowledge and awareness of the physical environment without conscious awareness. What is learned through these unconscious interactions shapes the experience and behaviors in physical settings later in life (Proshansky et al., 1983).

In addition to the psychological and sociological underpinnings of place attachment, several authors have offered justifications for the role of place as it pertains to education. In his book Ecological Literacy, David Orr (1992) said place-based education was important to education for four reasons. First, “it requires the combination of intellect with experience” (Orr, 1992, p. 128). By this, he means the study of place involves multiple aspects of a student’s intellect, including the combination of direct
observation, investigation, experimentation, and skill in the application of knowledge. Similarly, Sanger (1997) said what students experience helps determine what they become connected to, and the nature of those connections. Taken a step further, if educators consciously expose students to their local community, and the natural and social aspects that make up that community, students are more likely to develop attachment to the place.

Orr (1992) also said that “the study of place is relevant to the problems of overspecialization, which has been called a terminal disease of contemporary civilization” (p. 129). This point stems from the belief that contemporary education systems tend to compartmentalize subjects to the point of students losing sight of the broader picture of interdependence. Orr argued that places are ready laboratories of complex and diverse arenas, combining social and natural processes. This is also supported by Arenas (1999), who said that a people’s attachment to their home makes it the best place to teach them the interdependence of social and natural systems.

Finally, Orr (1992) said, “The study of place is important to educate or reeducate people in the art of living well where they are” (p. 130). Orr describes “living well” in a place as developing an intimate, organic, and mutually nurturing relationship with a place, and requires a detailed knowledge of that place. Arenas (1999) offered a more practical perspective of living well as “learning to satisfy basic needs with minimum environmental damage” (p. 7). Orr’s statement is similar to the simple definition of place-attachment - bonding of people to places. Orr also argued that people with a strong sense of place are less likely to vandalize theirs or others’ places, make good citizens, and are the “bedrock” of stable communities. Lastly, Orr states that knowledge of place is
intertwined with personal identity or knowledge of who one is. This concept is similar to Proshansky and others' (1983) discussion of place identity.

The Problem with the Current Education System

Several authors have recognized the importance of developing a sense of place for improving our schools, and have suggested the current educational system actually helps detach students from their place.

Sanger (1997), Diffenderfer and Earle (1997), and Arenas (1999) all argue that the basic pedagogy of the current educational system weakens one’s sense of place by stressing an individual autonomy. Schools stress the independence necessary to succeed in a capitalistic, market-driven society. Schools are designed to promote the language, metaphors, and worldview of independent individuals without helping them connect to, or be responsible for, the land and the communities they inhabit (Sanger, 1997). Arenas (1999) stated that current education stressing the global community usurps a direct connection between students and their local community or area where they are most likely to have success in making a difference or having an impact. Diffenderfer and Earle (1997) also suggested that current education has an individualistic emphasis, while place-based education attempts, at some level, to challenge this traditional approach. Place-based education does this by developing a sense of place, which leads to a process that enables students to see themselves as situated within the bioregion’s resource base. More simply put, place-based education is an attempt to help students feel a part of, rather than apart from their environments (Diffenderfer & Earle, 1997). Additionally, Sanger (1997) said the use of interpersonal media such as textbooks, videos, etc. undermines local forms
of knowledge and personal connections of oral traditions. Overuse of texts marginalizes what students derive from their own experiences of place, family, and community.

All of these arguments are consistent with David Sobel's (1996) seminal piece *Beyond Ecophobia*. In this book, Sobel argued previous EE efforts have focused on global problems such as rainforest deforestation, on which students typically have little direct impact. Sobel suggested that the result of this approach is the opposite of its intentions. He states: “In our zest for making them (students) aware of and responsible for the world’s problems, we cut our children off from their roots” (Sobel, 1996, p. 1).

Furthermore, Sobel argued that the study of nonlocal problems furthers a student’s dissociation with nature, and time spent studying nonlocal issues is time not spent on developing real contact with nature. Sobel also suggested that teachers may gravitate toward non-local issues because they are easier to teach. That is, logistic barriers a teacher might face associated with taking students outside to study a local environment are eliminated by well-established “tidier” curricula.

**EE and the Benefits of a Place-Based Approach**

Place-based education attempts to reverse the detachment trend in our nation’s schools (Arenas, 1999; Diffenderfer & Earle, 1997; Sanger, 1997). Place-based education is rooted first in direct experiences with the landscape. Sanger (1997) said what students experience determines what they connect to, and the nature of those connections. This statement is supported by a handful of studies that looked at what happens in the childhood of people considered to have strong environmental values (Chawla, 1998; Tanner, 1980). Chawla (1998) reviewed these studies and determined
that environmental values in those studied were most often attributed to times spent outdoors in a memorable wild or semi-wild place, and an adult who taught respect for nature. Sanger (1997) went on to say that when teachers consciously take students outside to directly experience land and the natural processes around them, there are several benefits. First, teachers provide content knowledge of their place, addressing the cognitive domain. Second, they communicate the value of their place, and that experiences outside have value. Lastly, they communicate that the student's personal knowledge has value.

The theme of place provides students with meaning in their education (Arenas, 1999; Diffenderfer & Earle, 1997; Orr, 1992; Sanger, 1997). Meaning is fostered because the study of their place reflects the real world of the student. In this sense, place-based education shares many parallels with constructivist teaching philosophies. Central to the constructivist theory is that 1) knowledge is constructed, not transmitted, 2) prior knowledge impacts the learning process, 3) initial understanding is local, not global, and 4) building useful knowledge structures requires effortful and purposeful activity (University of Massachusetts Physics Education Research Group, 2001). Place-based education, by focusing on the real world of the student, takes advantage of constructivism and encourages teachers to build upon what their students already know.

Lord (1999) compared traditional and constructivist approaches in teaching a high school environmental science course. The course met twice a week for 90 minutes, and covered a variety of environmental science topics. Students in the constructivist based classes worked in small groups and often were presented with thought provoking problems and critical thinking questions. In contrast, students in the traditional classes
were presented material in lecture format. He found that students from the constructivist-based class outperformed students from the traditional teacher centered class on all of the unit exams. Although students in the traditional group scored similarly on content recall test items, they scored substantially worse on questions based on interpretation, analyzing, and critical thinking. This suggests that students in the constructivist class had a much deeper and comprehensive understanding of the material presented in the course. Because of its constructivist nature, place-based education may provide similar educational benefits.

Another benefit of place-based education offered by Sanger (1997) is that using place as a theme organizes and integrates subject matter. Themes based on place are interdisciplinary by nature, incorporate all disciplines to reflect real life, and model the connected nature of the world around us. Thus, the complex relationships and interdependence of humans and all other forms of life are more effectively addressed (Diffenderfer & Earle, 1997). These concepts are similar to Orr's (1992) idea that place-based education is important to overcome “overspecialization” mentioned earlier.

The affective domain may also be more effectively addressed with a place-based approach. In a meta-analysis of research focusing on the affective domain in EE, Iozzi (1989) pointed out that early research in EE recognized the importance of the affective domain, yet few curricula intentionally deal with the affective and cognitive domain simultaneously. Given the affective nature of the concept of place attachment mentioned above, place-based approaches may provide teachers with a more holistic theme, which more effectively ties both cognitive and affective domains together. Arenas (1999) expressed the importance of the affective domain by arguing that “all education is
aesthetic” (p. 7), acknowledging the role of artistic expression in a person’s life. He suggested that art awakens the senses, which develop emotions, and does not engender indifference. Arenas went on to say that art is often most meaningful to those who live where the art originated.

Consider the ultimate goal of EE:

To aid people in becoming environmentally knowledgeable and, above all, skilled and dedicated people who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment. (Hungerford et al., 1980, p. 43)

Hungerford and Volk (1990) concluded that to achieve this goal, students must be given the opportunity to develop a sense of ownership and empowerment to become responsible, active citizens. Place-based education is in part designed to give students “ownership” and “empowerment.”

Diffenderfer and Earle (1997) said that one goal of place-based education, or as they put it “bioregional education,” is to help students understand the history of their region. In a similar light, Sanger (1997) said that the direct study of local history makes that history more relevant to students’ lives. Sanger said that because of this relevance, students are more apt to see themselves as part of the ongoing history of a place, and are better able to visualize and value their role in the future. Sanger went on to say that in this way responsible citizens are created. Additionally, in terms of EE and its ultimate goal, students involved with a study of their place are more likely to have practice taking actions that affect their place and become part of the process. In addition to knowledge of their place, students obtain knowledge of how to act and a belief in their ability to act (Sanger, 1997). Similarly, Diffenderfer and Earle (1997) also said that place-based
education emphasizes the development of "social capacity," that is the ability of citizens to participate in decisions that directly affect their lives (Diffenderfer & Earle, 1997).

Although many of the benefits of place-based education are still considered theoretical, there is some evidence suggesting place attachment and sense of place are important for addressing natural resource management issues. In their book Making Collaborations Work, Wondolleck and Yaffee (2000) drew on 10 years of research focusing on how people have worked together to address environmental issues. They concluded that a sense of place could help promote collaboration. They stated:

In a number of successful collaborative processes, strong identification with a geographic location, biophysical feature, or community or neighborhood has provided the foundation on which the cooperative effort was built. (Wondolleck & Yaffee, 2000, p. 73)

Evaluation of Place-Based Approaches to EE Teacher Training

Currently, there is very little research studying the effects of place-based education teacher training. Lieberman and Hoody (1998) looked at the potential effects of place-based approaches similar to Journeys. They examined integrated curricula that use the environment as a central theme by studying 40 schools where "environment as an integrating context" (EIC) for learning was prevalent. EIC was defined as a framework for "interdisciplinary, collaborative, student-centered, hands-on, and engaged learning" (p. 1), similar in some ways to Journeys. Though there was not a specific curricular design common to all 40 schools participating in the study, common characteristics of EIC-based instruction included:

- Interdisciplinary integration of subject matter;
- Collaborative instruction;
• Emphasis on problem solving and projects;
• Combinations of independent and cooperative learning;
• Learner centered and constructivist approaches.

Lieberman and Hoody (1998) examined the effects of EIC-based curricula by surveying teachers to determine how involvement with such curricula changed their attitudes toward teaching. Teachers reported an increase in enthusiasm for teaching, improved interactions with students and other teachers, expanded personal growth, greater willingness to use innovative instructional strategies, and improved administrative support. Additionally, teachers reported several improvements in their students, including improved standardized test scores in several subject areas, improved behavior, increased engagement and enthusiasm, and pride and ownership in accomplishments (Lieberman & Hoody, 1998).

While Lieberman and Hoody's (1998) study showed the potential benefits of EIC-based approaches in a broad perspective, it did not attempt to measure the effects of a specific program. Indeed, within the 40 schools that participated in the study a variety of different EIC-related approaches were identified. Thus, their study is more aptly defined as a series of qualitative case studies, rather than an evaluation of a specific approach. Furthermore, their study did not examine the specific teacher training involved (if any) with the implementation of EIC-based programs.
CHAPTER 3
DESCRIPTION OF JOURNEYS

Most of this information regarding the history and development of Journeys is based on personal interviews with Steve Archibald, Nancy Shea, and April Landale, in June 2000. Although Journeys is a continually evolving program, it was created in its present form in 1995. The creation of Journeys was the result of many philosophies and programs at TSS coming together. In 1994, TSS began a graduate-level Professional Residency in Environmental Education program, which resulted in many major changes in both programs and logistics at TSS. One of these changes was the fact that TSS would now have students for an entire year. The duration of the stay at TSS meant graduate students needed a broader picture encompassing not only academics, but also day-to-day living in Jackson Hole, Wyoming. In essence, it was believed that part of the success of the graduate students revolved around developing an attachment to the place, or a sense of place.

At the same time, there were several developments in the TSS outreach department. The most notable was the desire to develop a program that TSS could help teachers implement and use with their students without outside support from TSS. One of the first attempts to do this was the creation of the ISLAND II program. The premise behind ISLAND II was that TSS would create a partnership with schools to help facilitate an environmental education project based around the school’s interests and local area as opposed to the traditional program where TSS delivers a prepackaged program without much collaboration with the classroom teacher. In short, ISLAND II was an effort to tailor EE to directly meet the needs of the classrooms involved. Additionally, a program
called Pathways was developed to integrate aspects of EE with the arts and sciences. The interdisciplinary nature of Pathways was a precursor to some of the foundations of Journeys.

The desire of TSS graduate and outreach programs to have a more long-term holistic impact on students, the partnerships and customizing approach of ISLAND II, and the interdisciplinary nature of Pathways, laid the groundwork for the creation of Journeys in 1995. Journeys was designed to train teachers to use a process in their classroom that helps their students develop a sense of place. Besides introducing teachers to place-based education, the purpose of Journeys was to broaden the audience of TSS with a long-term (at least one school year) program that teachers could implement and customize on their own with training and support from TSS.

The goals and objectives of Journeys as stated in the grant proposal (Appendix A) are:

- To integrate science, social studies, geography, language arts, math, and arts activities to help young people develop the skills and knowledge that will enable them to gain a greater sense of the place in which they live;

- To provide teachers a process which they can use to facilitate student awareness and understanding of their local geographic environment, the human-built environment, the natural history of the area, the human history, and the implications of human activity on the environment;

- To help students develop knowledge and habits that are life-long in their scope and transferable in their application;

- To provide teachers a year-long curriculum which may be used in part or as a whole and which may be integrated with existing school curricula;

- To train teachers to use the Journeys curriculum through workshops and working with the students in their schools and communities. (p. 2)
All teachers receive a copy of the *Journeys* K-8 curriculum guide only after they attend the initial training. The curriculum guide is organized into four sections promoting a sequential approach to the study of the student's place. The designations are designed to expand the students' sense of place by starting with explorations that focus on the immediate surroundings, and then progress further to encompass larger portions of their place. These sections are titled "Schoolyard Sense of Place," "Community Sense of Place," "Watershed Sense of Place," and "Personal Sense of Place."

While the nature of the curriculum suggests a systematic approach, both the curriculum guide and training emphasize that the guide is meant to be flexible, and local adaptation is encouraged. This concept is stated in the curriculum guide in this way:

> It is understood, and intended, that teachers will not teach or lead every lesson/activity included in this curriculum. In fact, if students experience only a small portion of the curriculum but do so in depth, then progress will have been made. The educational concepts of less is more, and depth versus breadth are important underlying themes. Also, this curriculum is really intended to act as a stimulator of ideas. (Archibald, 1995, p. 7)

An integral portion of the curriculum is the use of and emphasis on the "Sense of Place Life Skills." These life skills are consistent elements of all the activities in the curriculum, and are crucial elements to the overall philosophy of *Journeys*. The Sense of Place Life Skills are divided into four categories:

- **Gaining a Personal Sense of Place** – these are skills including reflection, solo time, sauntering, and sensory awareness.

- **Finding a Scientific Sense of Place** – these skills promote scientific thinking through phenological studies and the use of naturalist's tools.

- **Communicating a Sense of Place** – these skills explore the use of art as a tool to communicate about one's Place. They also encourage the use of a journal, and creating and telling stories about one's Place.
• Enjoying a Sense of Place – these skills promote the outward acknowledgment of place-based experiences (Archibald, 1995, p. 14).

These skills summarize the methods Journeys uses to nurture the development of one’s sense of place. By presenting these skills separately (i.e., not in the context of the curriculum or in a specific activity), it is believed that teachers are more apt to integrate these skills into their existing curricula.

Although all teachers that are part of this study have received the curriculum guide, they can be divided into three different cohorts, based on the extent of training and support they have received. The first group consists of teachers that have participated in the granted portion of the Journeys projects. Each school year fifteen to eighteen teachers are selected by the TSS Outreach Department to participate in the program with expenses covered. These teachers participate in a 2-day training session at TSS in the fall. During the training, teachers are introduced to the history and philosophy of place-based education, introduced to the Journeys approach to place-based education, and given materials to aid implementation. The typical introduction to Journeys involves a combination of descriptive examples of how the trainer has used Journeys and demonstrations of Journeys activities. At the end of the training, time is given for teachers to develop a plan for how to integrate Journeys into their classroom. All teachers involved in this study have been trained by Steve Archibald. For a full description of the training schedule, refer to Appendix B. The teachers participating in the granted Journeys project also receive a “Teaching Enhancement Kit.” The kit contains several books, materials for a homemade weather station, field guides, and
supplies aimed at making teaching outside easier. Each kit has a value of approximately $400.

Teachers participating in the granted *Journeys* project receive an on-site visit from TSS faculty and instructors during their first year of *Journeys*. The site visit consists of three or four half-days and one full school day with the teacher and their students. The purpose of the visit is to model teaching *Journeys* in the classroom and to further work with teachers on-site to prepare them to implement the curriculum. The teachers then participate in a 2-day spring workshop, again held at TSS. This final workshop is a forum to share experiences and information on how they used the curriculum, to evaluate the program, provide ideas for changes, and plan ideas for future *Journeys* efforts. Additional support is offered to these teachers in the form of e-mail contact with TSS Outreach staff, and four newsletters per year.

The second group of *Journeys*-trained teachers are those who have paid to participate in a workshop. Workshop cost is approximately $180-200. These workshops are offered during the summer months and are open to anyone. All of these workshops have been held at TSS, and have been conducted by Steve Archibald, the former TSS outreach coordinator. The content is the same as for teachers participating in the granted *Journeys* program. The difference is that teachers in the summer workshops pay TSS a fee, they do not receive teaching enhancement kits or a TSS site visit, nor do they attend a spring workshop. They do receive e-mail support from TSS, and the *Journeys* newsletter.

The final group consists of teachers that have been trained as a part of a school-wide interest in *Journeys*. Teachers who have participated in the granted program
generate interest that leads to training all teachers at their school in *Journeys*. These training sessions have varied in length from one-half, to 1, to 2 days, depending on the needs and interests of the specific school, and are usually held at the school. The principles and concepts covered are the same as with the other training groups mentioned above.

TSS offers additional retreats and advanced workshops as supplements to all trained teachers. These workshops and retreats are designed to further support teachers, to reinspire, and to refine their ability to integrate place-based education techniques into their classroom.

*Journeys* addresses several of the barriers to the implementation of EE in the classroom by using the benefits of a place-based approach mentioned earlier. Principally, *Journeys* trains teachers to use their local community to design and experiment with their own curriculum. Teachers provide content knowledge of their place, communicate the value of their place, and communicate the value of experiences outside (Sanger, 1997). This helps develop a sense of place in students at an early age, which is thought to develop strong environmental values (Chawla, 1998; Tanner, 1980).

While the *Journeys* curriculum guide contains many activities, training discourages the activity guide mentality and teaches the ability to use place-based pedagogy to thematically integrate EE concepts. The goal of *Journeys* teacher training is to prepare teachers to use the exploration of their place as a context for learning in all subjects. This is consistent with Sanger’s (1997) notion that using place as a theme integrates subject matter, and provides students with meaning in their education. Additionally, themes based on place provide a process to more effectively address the
complex nature of human-ecosystem interconnectedness (Arenas, 1999; Diffenderfer & Earle, 1997). Teachers learn how to use *Journeys* as an organizational theme rather than as supplemental activity, expanding the scope of EE, and overcoming the conceptual and attitudinal barriers related to a limited view of EE.

Several components of *Journeys* are affective in their nature. Specifically, the sense of Place life skills of “Gaining a Personal Sense of Place,” “Communicating a Sense of Place,” and “Enjoying a Sense of Place” are intentional efforts to simultaneously deal with the affective and cognitive domains in EE (Iozzi, 1989). *Journeys* attempts to connect the head (cognitive, content, knowledge) with the heart (affective, emotion, artistic expression) to provide a more holistic and meaningful learning experience.

The place approach offered by *Journeys* attempts to help achieve the goal of EE outlined by Hungerford et al. (1980). *Journeys* attempts to train teachers to use a process which develops the student’s sense of place, and ultimately gives students “ownership” and “empowerment,” helps them become responsible active citizens (Hungerford & Volk, 1990), and develops “social capacity” (Diffenderfer & Earle, 1997).
CHAPTER 4

METHODS

To address the eight study questions mentioned previously, a self-administered mail survey of program participants was used. Three sources of information were used to develop the survey including interviews with TSS stakeholders, a review of relevant TSS participant database records and archived documents, and a review of the relevant literature on EE teacher inservice training.

Survey Development

Stakeholders' interviews included TSS's executive director and director of education, TSS faculty and staff, and several other former employees involved with the creation and implementation of Journeys. The primary purposes of the stakeholder interviews were to develop a list of potential evaluation questions, and to gather information about the history and development of Journeys. It was also an effort to focus the evaluation to provide the most useful information to TSS. Fifteen people participated.

Most stakeholders were interviewed in small focus groups based on orientation to the program. Each group was interviewed separately because it was recognized that they might have a unique perception of the program. For example, there was an administrative focus group, which included the executive director, director of education, and the development director. Another group was staff directly related to the program and its day-to-day operation. A third group consisted of former employees who had direct experience developing and delivering the program. Several current staff members
not associated with the direct implementation and day-to-day operation of Journeys also were interviewed.

The interviews were all conducted using a basic outline of questions. First interviewees were asked to describe their general impressions of Journeys. Second, they were asked to speculate on the strengths and weaknesses of Journeys. Last, they were asked to list questions they would like to see an evaluation of Journeys answer. For participants who were directly involved with the development of Journeys, a second outline of basic questions was asked. These questions dealt primarily with the history of Journeys and why it was developed. These questions included:

- How was the program developed?
- Why was Journeys initiated?
- What are the goals of Journeys?
- Who is Journeys intended to serve?

Interviews were recorded, notes were taken, and a transcription was produced. These transcriptions were then analyzed to accurately describe the history and evolution of Journeys. Additionally, lists of questions were categorized based on similar themes, and summarized in a comprehensive list of potential evaluation questions. In total 89 potential questions were generated under several themes (see Appendix C).

**TSS Archived Documents**

Several archived documents also were used to provide further information about the history and potential impacts of Journeys. Among these documents were several TSS newsletters and brochures with articles about Journeys, the original Journeys activity
guide, *Journeys* grant proposals, and several testimonial letters written by participants. Together these sources elaborated on the development of *Journeys*, and provided baseline insight into teachers' perceptions of the impact of *Journeys*. Many of the insights gleaned from the testimonials went into the development of the survey.

**EE Literature**

Several themes emerged from the literature on EE teacher training (see Chapter 2) which were directly incorporated into the survey items, most notably, the list of barriers to implementation of EE in the classroom from Ham and Sewing (1987) and potential benefits of programs like *Journeys* from Lieberman and Hoody (1998). Although there is no intention to directly compare *Journeys* teacher inservice training with other types of training, measuring similar variables can provide a greater insight into how a sense of place education approach toward teacher training may or may not be effective.

**Survey Implementation and Population**

Based on the list of questions compiled from the stakeholder interviews, TSS documents, and the relevant EE literature, a list of potential survey items was created. The list of potential survey items was further narrowed down with assistance from USU colleagues and TSS stakeholders. The remaining items were then used to construct an initial draft of the survey with the appropriate items and length. The survey was designed to take approximately 20-25 minutes to complete.

The initial draft went through three distinct pretesting stages based on Dillman's (2000) pretesting strategies: review by knowledgeable colleagues and analysts, interviews to evaluate cognitive and motivational qualities, and a final check. The first stage
included a review by knowledgeable colleagues at Utah State University and by TSS stakeholders. The purpose of the first stage was to check the survey for extraneous and missing questions, style, flow, and errors.

In the second stage, the survey was pretested for cognitive and motivational qualities in the early fall of 2000. A sample of five potential respondents was selected from the study population to assess their comprehension of the survey items and the time they took to fill out the survey. The survey was administered to these participants in the presence of an interviewer. Before, during, and after the respondents completed the survey they were asked questions to assess their comprehension of the survey items. Subjects participating in the interview were eliminated from the final population. Data from the completed surveys in this stage were then analyzed to determine if useful information was being gathered in both open- and closed-ended questions, and if response categories for Likert-scale questions provided sufficient variation among respondents. The information gathered from the interviews was considered and a second version of the survey was developed and reviewed again by USU colleagues. The survey went through approximately four more drafts and reviews before the final version emerged and was mailed to the remaining population (N=205).

The survey was mailed to all teachers that have been formally trained to use Journeys and did not participate in the pretest (N=205). The TSS database and the personal database of Steve Archibald, the principal creator of Journeys, was used to identify teachers' names, home addresses, or school addresses. In many cases, specific mailing addresses were not available from the databases. Mailing addresses for these participants were obtained by searching Internet directories like Anywho.com, and
Questdex.com. Home addresses were preferred. For home addresses that could not be confirmed, the school address was used.

The survey was administered following Dillman's Tailored Design Method (Dillman, 2000). In early November 2000, a prenotice e-mail was sent out before the questionnaire requesting the recipient's participation (see Appendix D). Three to 4 days after the initial e-mail, the questionnaire along with a detailed cover letter describing the research and the importance of their response was mailed with a self-addressed stamped envelope (Appendix E). A postcard was sent 1 week after the questionnaire mailing to thank those that had already returned the survey and to remind those that had not (Appendix F). Three weeks after the initial survey mailing, a second copy of the survey and a reminder letter was sent to those who had not already returned completed surveys (Appendix G).

To reduce costs, the pre-notice contact used e-mail rather than U.S. Postal Service. In addition to the benefits of reduced mailing costs, it was believed that e-mail was a better way to initially contact many teachers. Along with the TSS database, Internet searches were used to obtain valid e-mail address for most teachers. However, correct e-mail addresses for 34 out of the population of 205 teachers were not found. These teachers did not receive a prenotice contact. All mailings were personalized by addressing them directly using individual names, and included real signatures. In an effort to reduce the potential for response bias, mailings and cover letters were sent on Utah State University letterhead and were mailed from Utah State University.

Use of the tailored design method has yielded response rates of 77%. For specialized populations, such as the one considered for this study, response rates can be
higher. The target response rate for this survey was 65-75% of the population. Of the 205 surveys mailed, there were 148 responses and six were undeliverable. The six undeliverable were deducted from the population size. Of the 199 remaining, 110 were returned completed by teachers, and 38 were returned by respondents who reported that they had either never been trained (N=27) to use Journeys, or that they were not classroom teachers (N=11). Two of the 38 responses came via e-mail from respondents reporting they had not been trained to use Journeys. The final response rate was 74%.

Data Analysis

The survey was mailed to all the known teachers that have been trained to use Journeys, and thus can be considered a census. Therefore, there is no need for inferential statistics like significance of mean differences. Descriptive statistics, such as means and frequencies, were used to analyze and compare variables. A measure of association, tau-c, was also used to analyze the strength and direction of associations between ordinal level measurements, which constitute most of the variables.

Methodological Issues and Limitations

There were several methodological issues and limitations associated with this study. Since the decision to evaluate Journeys came well after the program was initiated, it was impossible to use experimental design and control methodologies, such as comparison of pre- and posttests. This limits the scope and interpretation of the findings. This study is exploratory and descriptive in nature. It describes the current use of Journeys and explores the impact Journeys has had by asking teachers what their
perceptions of the program are. Specifically, teachers are asked about their perceptions of how the program has influenced their teaching attitudes and behaviors, how it has influenced their students, and what barriers to implementation they have encountered. Although this method provides valuable information about *Journeys*, the self-reporting nature of the survey has some inherent weaknesses, including possible bias.

The decision to mail the survey to the entire population was done in part to eliminate any chance of selection bias. Regardless of whether a teacher used or did not use *Journeys*, they all were asked to respond to the survey. More important was the issue of response bias. There was concern that only people who had positive experiences with *Journeys* or had positive impressions of TSS would respond to the survey, and hence would positively skew the results. Response bias was addressed by making it clear to respondents that a third party, USU, was conducting the research. The primary researcher's name was kept out of any mailings because many teachers may have recognized it. There was also an attempt to balance the survey and ask about both positive and negative aspects of the program. Lastly, several people not associated with TSS reviewed the survey. Nonetheless, because this was a self-administered survey it was impossible to control who responded, so some response bias is most likely present.

This research is a cross-sectional design, meaning the data were gathered at one time. Aside from anecdotal information gathered from archive documents, there is no information about the respondents and their perceptions of *Journeys* before the survey. Because of this design, interpretation of the data is limited to describing *Journeys* only at the time of the survey. There is no way to explain how teachers' attitudes and perceptions may have changed over time.
Variables

Following is a detailed description of survey variables and how they were measured. A complete copy of the survey can be found in Appendix E.

Characteristics of Respondents and Respondents’ Schools

Several demographic and descriptive variables were measured to determine some general characteristics of the teachers and the schools in which they were teaching. Specific variables included gender, years of teaching experience, type of school (public or private), grade level taught, education level, use of other EE curricula, and community size. Gender was not asked directly on the survey but was coded based on the researcher’s personal knowledge of the participants, the TSS database information, and gender specific names. The type of school (public or private) also was determined without specifically asking, again based on the researcher’s knowledge of the participating schools.

Grade level, years of teaching experience, and education level were measured on the survey with open-ended fill-in-the-blank questions. Grade-level responses were categorized as K-3, 4-6 elementary, 6-8 middle, high school, and multi-age. In coding the responses to grade level, teachers that indicated they taught 6th grade could be placed in either the 4th-6th elementary category, or the 6th-8th middle school category based on what type of school, elementary or middle, the teacher taught at. Any response that did not distinctly fit into one of these categories was coded “multi-age.”

Years of teaching experience also was measured using an open-ended question. Teachers were simply asked, “How many years have you been teaching?” Most
responded with one number, and gave no indication of lack of recall. The responses were then coded into five categories ranging from “1-5” to “30-40” years. No teachers indicated less than one year of teaching experience.

Education level was determined by asking teachers to list the college degrees and/or endorsements they held. It was assumed that if they were teachers they held at least a bachelor’s degree. Endorsements were considered to determine if the teacher had any specialty background. For example, a teacher with an elementary education degree and an art or music endorsement may have a greater propensity to teach those subjects to his/her students. However, the primary purpose of this variable was to measure the level of education beyond the bachelor’s degree. The coding was based on the highest degree completed, and was broken down into five categories: bachelor’s, second bachelor’s, master’s, second master’s, and PhD.

Community size was measured by asking respondents to indicate the population size of the community where they currently teach. Their choices ranged from a city or suburb of a city with more than 100,000 people to a rural area outside of a city or town.

Description of Training Characteristics

Participants were asked a series of questions about their Journeys training. First respondents were asked to indicate when and where they attended Journeys training sessions. The responses from this question along with TSS database documentation were used to determine training cohort, how they were initially trained, and the number of training sessions they attended.
Training Cohort

The training cohort variable divides the respondents into groups based on the type and amount of training received. This is based on the responses to question one on the written survey (see Appendix E), and an archive of TSS workshop participants. For teachers trained as part of a schoolwide initiative, or other training sessions not held on the campus of TSS where no record exists, the response to question one was used to determine training cohort.

The training cohort variable is coded into four categories: teachers supported by TSS grant, teachers attending workshops only, teachers attending school workshops only, and teachers that have attended both school and summer workshops. Teachers that have participated in the TSS grant supported program at any time theoretically have received the highest level of training and support offered by TSS. If a teacher ever participated in the granted supported portion of Journeys, they were put into this cohort regardless if they also attended summer workshops or other school training sessions. The second cohort is teachers that have only attended summer workshops at TSS. The third category represents teachers that have only been trained as part of schoolwide initiatives. The forth category are teachers that have attended both summer workshops and school sessions, but have never been supported by the granted portion of Journeys.

On the surface, the distinction between these cohorts may seem miniscule and irrelevant, especially considering that many of the teachers have attended multiple training sessions and workshops. However, placing respondents into these cohorts provides some basic information about the level of support and training teachers have received. Theoretically, teachers that have participated in the TSS grant-supported
training have received the highest level of support and training. This additional support comes in the form of financial support afforded by the TSS grant, additional materials provided to teachers, and a demonstration site visit. The other three cohorts have not received these forms of support. Teachers that attended summer workshops were separated because they supported themselves to attend the workshop.

Number of Training Sessions Attended

Another measurement of the level of training received by teachers is how many training sessions, workshops, and retreats they have attended. Again, responses to question one on the survey were used to determine how many training sessions each teacher attended. The variable was simply calculated by adding the reported training sessions together. The number of training sessions attended may also be an indicator of the level of commitment teachers have to Journeys.

Number of Other Journeys Teachers at Their School

Finally, teachers were asked how many other teachers at their school were trained to use Journeys. Responses to this question were categorized into four groups; 0, 1-5, 6-10, and 11-20. The number of other teachers trained was measured to gain an understanding of how important it is to have other colleagues involved with Journeys. In addition, collaboration was believed to be an important influence on the success of Journeys, and other teachers trained to use Journeys at their school could constitute a group of potential collaborators.
Respondents’ Level of Commitment to Using Journeys

Some of the most important measures used in determining effectiveness of Journeys place-based education teacher training are measures of the teachers’ level of commitment to using Journeys. If the program is appealing to teachers, and the training and support offered is effective, then teachers will use Journeys often after their initial training, and thus be committed to the program. Level of commitment was measured with four separate variables: use of Journeys, number of years using Journeys and program fidelity, how often is Journeys used, and future use of Journeys. Each of these variables is described below.

Use of Journeys

The most obvious measure of how committed teachers are to using Journeys is whether they have used Journeys at all since their initial training. To determine this teachers were asked a simple yes or no question. The response to this question was also used as a filter, to guide respondents to answer only questions that were relevant to their experience. For example, if they indicated that they had never used Journeys with students, they were asked to skip survey items pertaining to the impact of Journeys and go directly to items designed to measure what their barriers to implementation were.

Number of Years Using Journeys and Program Fidelity

If respondents indicated that they had used Journeys with their students, they were then asked to list in which school years. The response to this question was used to
create two variables: how many years they have used Journeys since their initial training, and program fidelity.

Program fidelity is a measure of whether they have continuously used Journeys since their initial training. Program fidelity was calculated by looking at the year in which respondents were first trained to determine how many years they could have possibly used Journeys. Then the number of years they indicated using Journeys was subtracted from the number of years possible. If the result of this calculation was zero, respondents were coded as having used the program every year; if the result was greater than zero, the respondent was coded as having stopped using Journeys. There were no cases in which teachers did not use Journeys their first year after their initial training but then went on to use it after that.

How Often Journeys Is Used

One of the most important indicators of the success of Journeys lies not just in whether most teachers have gone on to use Journeys after their initial training, but in how often teachers use Journeys with their students. Teachers were asked “During the school year(s) you have used Journeys, on average, how often did you use any of the Journeys sense of place education ideas or activities with students?” A scale was used ranging from “very rarely (less than once a month)” to “daily.” A category labeled “other” also was given for respondents who felt they used Journeys in a unique way.

Future Use of Journeys

Finally, teachers were asked if they have plans to use Journeys in the future. Responses were on a 4-point Likert-scale ranging from “definitely” to “definitely not.”
Perceived Impacts of and Barriers to Journeys

Sixteen variables measure the perceived impact of Journeys. These impacts can be placed into three categories: impacts on general attitudes toward teaching and on teaching behaviors, impacts on students, and impacts on subject area integration. Responses were measured on a 7-point Likert-scale, from 1 = “very strongly agree” to 4 = “Neither agree, nor disagree,” to 7 = “very strongly disagree.”

The seven-point Likert-scale used to measure perceived impacts was re-coded into a 5-point scale by collapsing the extreme response categories and assigning different numeric values. Responses of “very strongly agree” were grouped with “strongly agree” responses, and “very strongly disagree” with “strongly disagree” responses. This was done in part because there were very small numbers of respondents selecting the extreme response categories, particularly on the negative “very strongly disagree” side. The seven-point scale was used initially to distinguish variation on the positive side because it was expected that the data would be positively skewed. Different numbers were then assigned to make it easier to interpret the positive and negative nature of the responses. The final 5-point scale was -2 = “very strongly disagree” or “strongly disagree,” -1 = “disagree,” 0 = “neither agree nor disagree,” 1 = “agree,” and 2 = “strongly agree” or “very strongly agree.”

Respondents were asked to rate potential barriers to Journeys use. There were five response categories on a Likert-scale ranging from 1 = “not a barrier’ to 5 = “major barrier.” The list of potential barriers that made up the items was obtained from the literature (Ham & Sewing, 1987) and from stakeholder interviews.
CHAPTER 5
RESULTS AND DISCUSSION

This chapter presents an analysis and discussion of the results of the mail survey. For organizational purposes, this chapter is divided into six major sections pertaining to the eight research questions. An additional final section analyzing grade-level differences is included. For each question, there is a description of the analysis, a presentation of the results, and a discussion.

Characteristics of Survey Respondents

The majority of teachers involved in the study were female and taught elementary grade levels at public schools (Table 1). About 75% of the respondents were teaching elementary grade levels K-6 and only three were high school teachers. Ten percent of teachers did not fall into a specific grade and were coded as “multi-age.” Seven of the eleven teachers that fell into the multi-age category had some sort of teaching specialty. For example, art, music, or library teachers may see several different grade levels during the course of a week. Three of the multi-age teachers were science specialists that taught primarily elementary grades, and one teacher was using Journeys with an outdoor club.

Study participants had been teaching from 2 to 36 years, with almost half in the 11-20 year category (mean 15.9) (Table 1). Most (52%) of the participants held at least a master’s degree, and one respondent held a PhD. Most of the teachers taught in mid- to large-size communities, with 41% from communities with population ranging from 25,000 to 100,000, and 28% from communities with populations of 5,000 to 25,000. Nearly all (80.9%) have used other EE curricula besides Journeys.
TABLE 1. Selected Characteristics of Survey Respondents, Their Schools, and Communities

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>10.9</td>
</tr>
<tr>
<td>Female</td>
<td>98</td>
<td>89.1</td>
</tr>
<tr>
<td><strong>Years in teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>16</td>
<td>14.8</td>
</tr>
<tr>
<td>6-10</td>
<td>16</td>
<td>14.8</td>
</tr>
<tr>
<td>11-20</td>
<td>49</td>
<td>45.4</td>
</tr>
<tr>
<td>21-30</td>
<td>21</td>
<td>19.4</td>
</tr>
<tr>
<td>30-40</td>
<td>6</td>
<td>5.6</td>
</tr>
<tr>
<td><strong>Type of school</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>98</td>
<td>96.1</td>
</tr>
<tr>
<td>Charter</td>
<td>4</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Grade level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-3</td>
<td>42</td>
<td>38.5</td>
</tr>
<tr>
<td>4-6 Elementary</td>
<td>40</td>
<td>36.7</td>
</tr>
<tr>
<td>6-8 Middle</td>
<td>13</td>
<td>11.9</td>
</tr>
<tr>
<td>High school</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Multi-age</td>
<td>11</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Highest degree completed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor's</td>
<td>46</td>
<td>43.0</td>
</tr>
<tr>
<td>2 Bachelor's</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>Master's</td>
<td>54</td>
<td>50.5</td>
</tr>
<tr>
<td>2 Master's</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>PhD</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Use of other EE Curricula</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>89</td>
<td>80.9</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>19.1</td>
</tr>
<tr>
<td><strong>Community size (population)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;100,000</td>
<td>9</td>
<td>8.4</td>
</tr>
<tr>
<td>25,000-100,000</td>
<td>44</td>
<td>41.1</td>
</tr>
<tr>
<td>5,000-25,000</td>
<td>30</td>
<td>28.0</td>
</tr>
<tr>
<td>2,500-5,000</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>&lt;2,500</td>
<td>7</td>
<td>6.5</td>
</tr>
<tr>
<td>A rural area outside of a town or city</td>
<td>12</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Ham and Sewing (1987) and Middlestadt et al. (1999) found similar characteristics in their respondents. In those studies, a large majority (nearly 90%) of the teachers were female and the mean teaching experience was 13.8 years and 15 years,
respectively. Levy (1998) also found similar results regarding teaching experience, and concluded that younger, less experienced, and particularly first-year teachers are often overwhelmed with the responsibilities of teaching, and are therefore less likely to be able to participate in extra training and workshops. Regarding grade level, these results are consistent with Lieberman (1995), who found that the vast majority of teacher training programs are focused on teachers in grades K-6. However, it is surprising that there are slightly more K-3 teachers involved with Journeys. Most EE teacher training programs have focused on 4th-6th grades, with K-3 second (Lieberman, 1995; NEEAC, 1996). While Journeys has never been specifically aimed at any particular grade level, based on stakeholder interviews and archived TSS documents it was expected that the majority of the teachers trained would be in elementary grade levels 4-6.

How Journeys Teachers Have Been Trained

TSS grants supported 35% of the teachers and a similar proportion only attended workshops. Lower numbers only attended school training sessions (14%), and attended workshops plus school training sessions (16%) (Table 2). More than half of the respondents (55%) have attended only one training session, while nearly one-quarter have attended two training sessions, or three or more training sessions. Over 90% of the teachers reported that there was at least one other teacher at their school who had been trained to use Journeys. However, the result is bimodal with most reporting either 1-5 or 11-20 other teachers at their school trained. Although it is unclear why the result is bimodal, the high percentage of teachers reporting at least one other teacher at their school is probably an indication of how word of the program has spread among teachers.
TABLE 2. Training Characteristics of Survey Respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Cohort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers supported by grant</td>
<td>38</td>
<td>34.9</td>
</tr>
<tr>
<td>Attended workshops only</td>
<td>39</td>
<td>35.8</td>
</tr>
<tr>
<td>Attended school training only</td>
<td>15</td>
<td>13.8</td>
</tr>
<tr>
<td>Attended both a school training and a workshop</td>
<td>17</td>
<td>15.6</td>
</tr>
<tr>
<td>Number of training Sessions attended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>60</td>
<td>55.0</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>22.9</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>14.7</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4.6</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Number of other teachers at their school trained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>9</td>
<td>9.2</td>
</tr>
<tr>
<td>1-5</td>
<td>55</td>
<td>56.1</td>
</tr>
<tr>
<td>6-10</td>
<td>10</td>
<td>10.2</td>
</tr>
<tr>
<td>11-20</td>
<td>24</td>
<td>24.5</td>
</tr>
</tbody>
</table>

Stakeholder interviews revealed that most teachers hear of *Journeys* by word-of-mouth from other teachers at their school, and often teachers from the same school attend workshops together. In addition, TSS encourages several teachers from the same school to promote collaboration and peer support.

**Level of Commitment to the Use of Journeys**

The most obvious measure of how committed teachers are to using *Journeys* is whether they have used *Journeys* at all since their initial training. Nearly 92% of the
teachers that have been trained to use *Journeys* have used *Journeys* with students (Table 3).

Three-quarters of the trained teachers reported using *Journeys* activities or ideas with their students every year since their initial training, and for the majority of those teachers (71.1%) this means 2 or 3 years. Relatively few (16.2%) of the respondents
have stopped using *Journeys*. Closer examination of the teachers that stopped using *Journeys* revealed that most (10 out of 16) either have changed positions, retired, or are specialty teachers. If one looks solely at teachers that have used *Journeys* (eliminating the nine that said they never used *Journeys*), 82% have used *Journeys* every year since their initial training. In short, these results show that once teachers start using *Journeys*, they will tend to continue using it year after year.

Not only does there appear to be a high level of commitment to *Journeys* currently, but also teachers plan to continue to use it in the future. Approximately 95% of the teachers indicated that they definitely or probably would use *Journeys* in the future. Only six teachers indicated they would probably or definitely not use the program in the future. Since nine said they have not used *Journeys* at all, at least some of them plan to implement *Journeys* in their classrooms in the future.

One of the most important indicators of the success of *Journeys* lies not just in the fact that most have gone on to use *Journeys* after their initial training, but in how often they use *Journeys* with their students. Teachers were asked “During the school year(s) you have used *Journeys*, on average, how often did you use any of the *Journeys* sense of place education ideas or activities with students?” Nearly one-quarter of the teachers reported using *Journeys* two to three times a week or more and over half use it at least once a week. Around 9% use it very rarely. One teacher marked “other,” indicating he/she uses *Journeys* with specific units of instruction during the year.

A closer inspection of this variable gives an important indicator of how well teachers are able to use *Journeys* as a framework to teach in all subject areas. Collapsing the scale to 2 points, 52% of the teachers used *Journeys* once a week or more, and 48%
are using it less than once a week. This is an important distinction because using *Journeys* once a week or more is a strong indication that *Journeys* has become a regular part of the classroom, and is thus being used as part of a framework as it was intended. On the other hand, teachers using *Journeys* less than once a week are not likely to be using *Journeys* with several subject areas, and hence not using sense of place as an integrating context. This is a strong indication of how well teachers are applying the concepts of *Journeys* to their classroom. At the very least, it is an indication of who is highly committed to *Journeys* and who is not.

Much of the research on EE teacher inservice training either has examined characteristics of training in general and not impacts of a specific training, or has used an experimental design to measured changes in attitudes and behaviors of the participants. None of the research reviewed for this study has measured use characteristics such as those presented here, so it is difficult to relate these results to other training approaches. Nonetheless, these data indicate a high level of use and commitment to *Journeys*.

**Perceived Impacts**

The perceived impacts of *Journeys* can be divided into three categories: impacts on teaching behaviors and attitudes, impacts on students, and impacts on teaching specific subject areas. Tables 4-6 summarize the results of these impacts and will be presented separately. Much of the discussion of these impacts revolves around comparisons with research done on EIC (environment as an integrating context) programs, which share many similarities to *Journeys* (Lieberman & Hoody, 1998). For more information on EIC programs, see the Review of Literature pages 22-23.
Perceived Influence of *Journeys* on Teachers' Attitudes Toward Teaching and Teaching Behaviors

Table 4 depicts respondents’ feelings on the impact of *Journeys* on their general attitudes toward teaching and teaching behaviors. Nearly all teachers (93%) agree that their use of *Journeys* activities and ideas in the classroom has increased their enthusiasm for teaching (mean = 1.57 on -2 to +2 scale). None of the teachers disagreed. Most of the teachers (94.1%) in this study also reported that their use of *Journeys* activities and ideas helped them become more effective teachers.

In their study of teachers involved with EIC programs similar to *Journeys*, Lieberman and Hoody (1998) also found that 95% of the teachers reported increased enthusiasm and engagement for teaching due to their involvement with EIC programs. They attributed increases in enthusiasm to working in collaborative teams with other teachers, renewed interest in subject matter, opportunities to try different instructional approaches, and noticing the change in enthusiasm of their students. Several comments from the TSS survey suggest *Journeys* has had similar effects. For example, one teacher wrote: “It's been a great shot in the arm to stimulate and motivate me after over 20 years of teaching grades K-8.” Another teacher wrote: “It has been a real energizing experience. It renewed and refreshed my love of teaching.”

Three items were aimed at measuring *Journeys*’ impact on specific teaching behaviors. Based on information gathered from the literature, informal conversations with teachers, and archived *Journeys* documents, it was expected that involvement with *Journeys* would increase the amount of parental involvement, teachers’ use of community members, and the amount of teacher collaboration. Collaboration, parental involvement,
TABLE 4. Teachers' Agreement with the Impact of Using *Journeys* on Teaching Attitudes and Behaviors

<table>
<thead>
<tr>
<th>Teaching impact</th>
<th>Mean (N)</th>
<th>Standard deviation</th>
<th>% Very strongly disagree -2</th>
<th>% Disagree -1</th>
<th>% Neither agree or disagree 0</th>
<th>% Agree 1</th>
<th>% Very strongly agree 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased enthusiasm for teaching</td>
<td>1.57 (100)</td>
<td>0.62</td>
<td>0.0</td>
<td>0.0</td>
<td>7.0</td>
<td>29.0</td>
<td>64.0</td>
</tr>
<tr>
<td>Increased effectiveness as a teacher</td>
<td>1.41 (101)</td>
<td>0.60</td>
<td>0.0</td>
<td>0.0</td>
<td>5.9</td>
<td>47.5</td>
<td>46.5</td>
</tr>
<tr>
<td>Increased parental involvement with their class</td>
<td>0.52 (89)</td>
<td>1.13</td>
<td>3.4</td>
<td>14.6</td>
<td>34.8</td>
<td>21.3</td>
<td>25.8</td>
</tr>
<tr>
<td>Increased use of other community members to help teach class</td>
<td>0.74 (94)</td>
<td>0.99</td>
<td>1.1</td>
<td>9.6</td>
<td>29.8</td>
<td>33.0</td>
<td>26.6</td>
</tr>
<tr>
<td>Increased amount of collaboration with other teachers</td>
<td>0.93 (96)</td>
<td>0.92</td>
<td>0.0</td>
<td>8.3</td>
<td>20.8</td>
<td>40.6</td>
<td>30.2</td>
</tr>
</tbody>
</table>

and use of community members are believed to be important aspects of *Journeys* for reasons similar to those mentioned by Lieberman and Hoody (1998). In their study of EIC programs, which are similar to *Journeys*, they found that collaborative instruction was an essential feature of successful EIC programs, and they cited several reasons why. First, collaboration among teachers across disciplines allows students to work on aspects of a single project in several different classes or disciplines. In this sense, collaboration can be associated with subject area integration. Second, collaborative instruction gives students opportunities to learn about a given topic from a variety of different teachers, each with potentially different perspectives based on their area of expertise. Last, collaborative instruction allows students to discover “...the varied outlooks, on what they
are studying, among the people who represent a cross-section of their community” (Lieberman & Hoody, 1998, p. 12).

Similar to collaborative instruction, Lieberman and Hoody (1998) also found that successful EIC educators often involve parents and specialists from the community to supplement their teaching. In addition to the benefits of collaboration, involving community members and parents may help decrease student/teacher ratios, and potentially provides technical expertise that the teacher alone may not have.

This study shows only moderate agreement for the effect of Journeys on these three teaching behaviors (Table 4). Means for parental involvement, use of community members, and collaborating with other teachers were 0.52, 0.74, and 0.93, respectively. When compared to Lieberman and Hoody’s (1998) measurements of increased collaboration and use of community members, such activity as a result of using Journeys is substantially lower. Lieberman and Hoody (1998) found that 94% of the teachers involved with EIC programs reported an increase in the amount they collaborate, and 84% reported an increase in participation of community members (parental involvement was not measured). Only 71% of the Journeys teachers agreed they experienced an increase in collaboration, and approximately 60% agreed they experienced an increase in their use of community members. It should be noted that it is unclear how Lieberman and Hoody (1998) measured these variables. However, these results suggest Journeys training may need to put more emphasis on collaboration and how to use community resources.

Less than half of the teachers agreed that Journeys has increased parental involvement in their class (47.1%; mean=0.52). Again, this may suggest an area of
improvement for Journeys. However, parental involvement may be very difficult to increase and may be contingent on several other factors like grade level, which is examined more closely in a later section of this chapter.

Teachers’ Perception of the Influence of Journeys on Students

There were four measures of the teachers’ perceptions of how Journeys has influenced their students (Table 5). Questions were asked in the same way as the perceived impacts on teaching attitudes and behaviors questions, and used the same re-coded Likert-type agreement scale from $-2 = \text{"strongly or very strongly disagree"}$ to $2 = \text{"strongly or very strongly agree."}$ Two of the items relate directly to the goals of Journeys outlined in the grant — Journeys helps student learn about their place and Journeys helps students connect to their place (see Appendix A). Teachers strongly or very strongly agreed that Journeys “helps students learn about their surrounding place” (mean=1.81). Likewise, most teachers strongly agreed or very strongly agreed that Journeys “helps their students connect to their surrounding place” (mean=1.74). These results confirm that Journeys is meeting two of its primary goals, to help students learn about and connect to their place. On the surface, there may seem to be little difference between the concept of learning about a place and connecting to the place. The distinction, however, lies in the difference between the affective and cognitive domains. Learning about one’s place is a representation of the cognitive impact of Journeys, and connecting to one’s place is a representation of the affective domain of place.

Two other measures of the impacts on students were whether teachers felt their use of Journeys increased their students’ enthusiasm for learning in general, and whether
they felt *Journeys* decreased student discipline problems. The mean agreement for an increase in student enthusiasm was fairly high (mean=1.39). However, teachers were nearly neutral on whether *Journeys* decreased discipline problems. These results again are very similar to the findings of Lieberman and Hoody (1998), who also found an increase in student enthusiasm and a decrease in student discipline problems related to the use of EIC programs. They attributed the increase in enthusiasm to active student participation in defining their own educational goals, and the interdisciplinary nature of the programs allowing students to make connections among different subject areas leading to increased interest and class participation. They went on to suggest that students are more focused on their studies because they are intrigued by exploring areas close and familiar to them. This is similar to the idea offered by several other authors suggesting that the study of place provides more meaningful educational experiences because it reflects the real world of the student (Arenas, 1999; Diffenderfer & Earle,
1997; Orr, 1992; Sanger, 1997). Further evidence of this enthusiasm can be seen in this comment by one of this study's responding teachers:

The threading of *Journeys* activities throughout my grade three curriculum has kept the students active and eager to go into our wetlands property. They observe, journal, think, and enjoy. It is enjoyable to hear students relate to other students and parents what activities they have learned and enjoyed.

Lieberman and Hoody (1998) also found that increases in student enthusiasm for learning translated into decreased student discipline problems. Seventy percent of the EIC educators reported improvements in student behavior. Only 47% of *Journeys* teachers agreed that *Journeys* has decreased student discipline problems in their class. Although it is unclear how most EIC programs are run, one potential reason for this smaller percentage for *Journeys* is the emphasis on taking students outside. Initially, management of students outside for teachers unfamiliar with this setting may actually increase discipline problems. At the same time students not used to going outside to learn may take some time to respond to the outdoors as a learning environment.

**Subjects That Journeys Helps Teachers Teach**

Teachers were asked if their use of *Journeys* helped them teach several different subject areas, and whether they thought *Journeys* helped them meet state standards. Specific subject areas were science, social studies, creative arts, language arts, reading, and math. In addition, there was a "does not apply" response available for each subject area. These responses were treated as missing data for calculating means. Means for all subject areas are above zero, indicating that in general *Journeys* is helping teachers teach a variety of different subjects. *Journeys* helps the most with science and social studies teaching, with means of 1.60 and 1.27, respectively (Table 6).
TABLE 6. Teachers’ Agreement That *Journeys* Helps Them Teach Specific Subjects

<table>
<thead>
<tr>
<th>Journeys helps me teach...</th>
<th>Mean (N)</th>
<th>Standard deviation</th>
<th>% Very Strongly disagree</th>
<th>% Strongly disagree</th>
<th>% Neither agree or disagree</th>
<th>% Agree</th>
<th>% Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>1.60 (98)</td>
<td>0.59</td>
<td>0.0</td>
<td>0.0</td>
<td>5.1</td>
<td>29.6</td>
<td>65.3</td>
</tr>
<tr>
<td>Social Studies</td>
<td>1.27 (92)</td>
<td>0.73</td>
<td>0.0</td>
<td>1.1</td>
<td>13.0</td>
<td>43.5</td>
<td>42.4</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>1.18 (94)</td>
<td>0.81</td>
<td>0.0</td>
<td>1.1</td>
<td>22.3</td>
<td>34.0</td>
<td>42.6</td>
</tr>
<tr>
<td>Language Arts</td>
<td>1.16 (95)</td>
<td>0.81</td>
<td>0.0</td>
<td>1.1</td>
<td>23.2</td>
<td>34.7</td>
<td>41.1</td>
</tr>
<tr>
<td>Reading</td>
<td>0.87 (93)</td>
<td>0.82</td>
<td>0.0</td>
<td>4.3</td>
<td>28.0</td>
<td>44.1</td>
<td>23.7</td>
</tr>
<tr>
<td>Math</td>
<td>0.69 (90)</td>
<td>0.94</td>
<td>2.2</td>
<td>4.4</td>
<td>37.8</td>
<td>33.3</td>
<td>22.2</td>
</tr>
<tr>
<td>State Standards</td>
<td>0.79 (94)</td>
<td>0.95</td>
<td>2.1</td>
<td>4.3</td>
<td>31.9</td>
<td>36.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Others have shown similar findings both in the literature on EE teacher inservices, and EE in general (Ham & Sewing, 1987; Middlestadt et al., 1999). These studies both found that teacher inservices tend to be science based and attract mostly science teachers, and that EE is most typically integrated with science and social studies. Our next highest mean was for creative arts. This is most likely due to the many opportunities offered in *Journeys* for journaling. Journaling is an important component of the *Journeys* activity guide and teachers are given many ideas on how to use journals for reflective writing, drawing, and poetry. Journaling may also account for some of the success with language arts (1.16) as well. The least integrated subject areas were reading (0.87) and math (0.69).

Agreement that *Journeys* helps teachers meet state standards is positive, but weak (mean=0.79). Concern with state standards may be related to other characteristics of *Journeys* teachers, particularly grade level, which will be discussed in a later section. Otherwise, the most obvious interpretation is that *Journeys* is difficult to adapt to state...
standards. Yet, if this were true, one would expect much lower means for specific subject areas. Another possible interpretation is that *Journeys*’ educational value lies in areas that are not addressed in state standards. These other values may be related to affective impacts of *Journeys*. For example, it has already been established that *Journeys* teachers agree that it has increased both their students’ and their own enthusiasm. In addition, experienced teachers such as those responding to this survey may not be as concerned about meeting standards. That is not to say that *Journeys* teachers do not care about standards, but rather they are confident that whatever the teaching approach, they will continue to meet standards. Further evidence of this lies in the fact that in general teachers did not see lack of relevance to state standards as a barrier to implementing *Journeys* (mean=1.59 on a 5-point scale) (Table 7). For example, one teacher commented:

> It’s not that *Journeys* is not relevant to state standards-for example I use the mapping activities to lead to greater understanding of reading maps- a state standard.... Definitely enhances the joy and desire to learn which carries beyond state standards. However, state standard teaching does take up a bunch of time.

Another possible reason for a low impact on teaching toward state standards might be that the nonspecific nature of *Journeys* makes it difficult for teachers to recognize how specific *Journeys* activities correlate to standards. As mentioned earlier, *Journeys* is meant to be a framework for teaching. Consequently the activity guide accompanying the program is fairly vague and is designed more to provide teachers with a catalyst to develop their own ideas about how to use the sense of place philosophy as a framework for learning, rather than to be a step-by-step guide. While in one sense this vagueness is necessary to appeal to a variety of teachers at different grade levels and in different geographical locations, it may make it difficult for teachers to point to specific
ways in which *Journeys* correlates to standards. A handful of teachers alluded to this difficulty in response to an open-ended question asking teachers to list what should be changed about *Journeys*. As one teacher put it: “Need to correlate with standards, I think to legitimize for outsiders/administrators. We know it’s valuable, but so often have to justify all we do.”

One aspect of these Likert-scale questions that deserves further mention is related to the interpretation of the scale itself. As was mentioned earlier, an agreement scale was used for all of the perceived benefits questions. The results were interpreted such that the level of agreement with a particular statement was used as an indication of the impact *Journeys* had on an item. This interpretation may have some weaknesses. For example, participants’ agreement with the statement “My use of *Journeys* activities or ideas has increased my enthusiasm for teaching” is interpreted to be an indication of the amount that their enthusiasm has increased. In other words, very strong agreement might indicate that the respondent experienced a higher increase in enthusiasm than a teacher whose response was “agree” did. This interpretation may not work as well for the negative responses, however. Disagreement with the statement might mean that *Journeys* actually decreased their enthusiasm for teaching, or it might just mean that *Journeys* did not increase their enthusiasm for teaching. A neutral response, “neither agree nor disagree,” might actually mean that *Journeys* did not increase their enthusiasm for teaching.

**Barriers to Implementing *Journeys***

Respondents were given a list of potential barriers to the use of *Journeys*. They were then asked to indicate the extent to which that barrier has inhibited their ability to
TABLE 7. Teachers' Barriers to Implementation of *Journeys*

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Mean (N)</th>
<th>Standard deviation</th>
<th>% Not a barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time for <em>Journeys</em> activities</td>
<td>2.81 (110)</td>
<td>1.11</td>
<td>15.5</td>
</tr>
<tr>
<td>Lack of time to prepare <em>Journeys</em> activities</td>
<td>2.76 (109)</td>
<td>1.15</td>
<td>17.4</td>
</tr>
<tr>
<td>Lack of funding</td>
<td>2.48 (109)</td>
<td>1.22</td>
<td>26.6</td>
</tr>
<tr>
<td>Transportation problems</td>
<td>2.40 (107)</td>
<td>1.38</td>
<td>38.3</td>
</tr>
<tr>
<td>Class size too large</td>
<td>2.05 (109)</td>
<td>1.28</td>
<td>49.5</td>
</tr>
<tr>
<td>Lack of <em>Journeys</em> instructional materials</td>
<td>1.98 (107)</td>
<td>1.09</td>
<td>44.9</td>
</tr>
<tr>
<td>Lack of knowledge and understanding of <em>Journeys</em></td>
<td>1.81 (108)</td>
<td>0.97</td>
<td>48.1</td>
</tr>
<tr>
<td>Liability concerns</td>
<td>1.74 (108)</td>
<td>1.10</td>
<td>59.3</td>
</tr>
<tr>
<td>Lack of ideas about how to use <em>Journeys</em></td>
<td>1.72 (108)</td>
<td>1.05</td>
<td>57.4</td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to what I teach</td>
<td>1.69 (108)</td>
<td>1.01</td>
<td>59.3</td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to state standards</td>
<td>1.59 (109)</td>
<td>0.90</td>
<td>63.3</td>
</tr>
<tr>
<td>Lack of support from other teachers at their school</td>
<td>1.55 (109)</td>
<td>0.83</td>
<td>60.6</td>
</tr>
<tr>
<td>Lack of natural areas near school</td>
<td>1.53 (109)</td>
<td>0.97</td>
<td>68.8</td>
</tr>
<tr>
<td>Lack of parental support</td>
<td>1.36 (107)</td>
<td>0.72</td>
<td>73.8</td>
</tr>
<tr>
<td>Lack of principal/administrative support</td>
<td>1.36 (109)</td>
<td>0.79</td>
<td>78.9</td>
</tr>
<tr>
<td><em>Journeys</em> does not work very well</td>
<td>1.10 (109)</td>
<td>0.38</td>
<td>92.7</td>
</tr>
</tbody>
</table>

* Scale for means is 1 = "not a barrier," 2 = "minor barrier," 3 = "moderate barrier," 4 = "significant barrier," and 5 = "major barrier."

* Response =1 = "not a barrier."

use *Journeys*. There were five response categories on a Likert-scale ranging from 1 = "not a barrier" to 5 = "major barrier." Table 7 lists these 16 potential barriers in decreasing order by mean.

Not surprisingly, the largest barriers were related to a lack of time, including lack of time for *Journeys* activities and lack of time to prepare for *Journeys* activities. These barriers, however, were only considered moderate (means 2.81 and 2.76). These findings are consistent with Ham and Sewing (1987) and Middlestadt et al. (1999), who noted lack of time as being the most significant barrier toward implementing EE in the classroom.

However, *Journeys* is in part designed to be used as a thematic framework tying several
subject areas together, not a supplemental or add-on, and so should allow for efficient use of time. On the other hand, lack of time may be considered a barrier to teaching in general and not specific to the implementation of Journeys. One teacher commented, “Time is an issue in all areas of teaching, not just Journeys.”

Several teachers commented that there is an initial time requirement after the training to come up with ways to incorporate Journeys into their existing curriculum. As one teacher put it:

Time is the only barrier; even though it is intended as a framework for existing curriculum, it definitely takes more time to mesh the two, both planning time (outside of class) and in-class implementation time. We are expected to teach so much material; although it can be expanded and enriched by Journeys there is still much that needs to be covered as basic skill/background info.

This may relate to the lack of detailed lesson plans in the curriculum guide, which several other teachers mentioned as a barrier. In a follow-up study to barriers to EE, Ham et al. (1987) also found that a workshop was unable to reduce the importance of time-related barriers. They suggested that perhaps time barriers were not reduced because methods to reduce these barriers were not clearly communicated, or were not compelling enough. As with Journeys, Ham et al. (1987) said that it was hoped that if teachers understood the interdisciplinary nature of EE, then they would understand that time spent on EE activities was also time spent on other subject areas. They then suggested that perhaps the learning objectives for specific subject areas cannot adequately be met by using a pre-planned interdisciplinary EE activity unless the activity is adapted specifically to that subject area, and adaptation takes time. Therefore, although Journeys teachers in general have high opinions about the impacts and philosophy of the program,
it still takes a considerable amount of effort and time to adapt the philosophy within existing curricula.

A minor to moderate barrier not related to time was lack of funding (mean=2.48) (Table 7). This can probably be attributed to the cost of going to workshops and training sessions at TSS. The cost of classroom materials may also be a funding problem, though lack of materials ranked quite a bit lower than funding (mean=1.98). Transportation problems also were moderate (mean=2.40). Though this was supposed to mean transportation of students on field trips, it is possible that some teachers interpreted this barrier as difficulty in reaching TSS for additional training. Transportation should not be a major barrier to Journeys implementation, since most day-to-day Journeys activities have to do with working within the classroom and schoolyard. This may represent a belief that success with Journeys must involve extensive field trips requiring lengthy travel.

The least significant barrier was that Journeys does not work well (mean=1.10). Lack of principal/administrative support and lack of parental support also were not considered barriers to implementing Journeys. Given the high amount of use and enthusiasm for Journeys reported earlier, it is not surprising that Journeys not working well was not a barrier. It also is not surprising that a lack of parent and administrative support were not barriers because in many cases, especially those where TSS visited the school, parent and administrative support was sought after. In addition, TSS has made a significant effort to involve parents and administrators by inviting them to training sessions and mailing them the Journeys newsletter (personal communication with S. Archibald, June, 2000).
Lack of relevance of *Journeys* to state standards was considered only a minor barrier (mean=1.59). As mentioned previously, although teachers did not show strong agreement that *Journeys* helps them meet state standards, teachers did not perceive *Journeys* as lacking relevance to state standards. This finding is further evidence that *Journeys* may have additional educational values not addressed in state standards, such as student and teacher enthusiasm, and that teachers involved with *Journeys* are confident they are meeting standards regardless of the teaching approach.

**Strengths and Weaknesses of Journeys**

The first part of this chapter established that in general teachers are highly committed to using *Journeys*, and agree that *Journeys* has several impacts on their teaching and students. This section will explore why *Journeys* is successful by examining its strengths and weaknesses in two ways. First, responses to open-ended questions were analyzed. Second, impacts and barriers associated with how often teachers use *Journeys* were analyzed, including an analysis of support components and how they influence how often *Journeys* is used.

**Analysis of Open-Ended Survey Questions**

Two qualitative, open-ended questions were included which asked teachers to list three things they would change about *Journeys* and three things they would not change about *Journeys*. Written comments were first listed and then sorted and grouped based on similar responses. Table 8 summarizes the total numbers of responses in each group.
There were 232 comments written about what should not be changed. Of these, nearly one third (29.7%) focused on support offered by TSS. Support comments had to do with the site visit, materials supplied to the teachers, and additional workshops. While some teachers commented in general about the support given to them by TSS, most of these were related to receiving a site visit from TSS staff and materials supplied. Only 18 comments mentioned that specific activities done during Journeys should not be changed, mostly involving the use of journals.

Related to support were comments about workshops and training sessions held at TSS (14.2%). These comments suggest that the TSS location of workshops is important and is valued. Teachers tend to be enthusiastic about being at TSS. Training sessions take on the feel of a retreat, which seems to appeal to teachers, and could be associated with the enthusiasm for the program. This is also an important aspect to consider if Journeys is proposed as a model that can be implemented elsewhere, since most institutions do not have the luxury of being located in a scenic National Park. Breakfast
facing the Tetons as the sun hits them in the morning is a difficult experience to duplicate elsewhere.

Comments about not changing the philosophy of *Journeys* were also common. These comments can be divided into two distinct categories related to the sense of place nature of the program, and to the more traditional EE foundations of the program. These comments together accounted for one third of all the “no change” comments. The philosophic aspects of *Journeys* are likely very appealing to teachers for a number of reasons. Wade (1996) argued that EE is becoming less relevant in our nation’s schools because it has been more concerned with “environmental content” rather than “educational context.” This “content” paradigm may be frustrating teachers, and she has recommended that EE professional development seek different approaches. She offered three recommendations, each of which fit closely with the philosophy of place-based education.

First, Wade (1996) recommended decentralized, local EE professional development. The alternative she contends is “action in and reflection on local environmental issues” (p. 14) and “intimate involvement between learners and local communities” (p. 14) *Journeys* in this sense may be considered a quasi-centralized approach. It is centralized in the sense that one organization, TSS, is promoting the philosophy, but decentralized because it attempts to work with teachers who then develop their own place-specific local curricula.

Second, Wade (1996) recommended that the interdisciplinary nature of EE needs to be communicated more clearly to the formal education community. To do this, she argues, inservice providers must appeal more to non-science teachers, demonstrate how
to incorporate EE content and pedagogy into all subject areas, and engage the administrators, school boards, and parents, in addition to teachers. The present study at least shows that teachers agree *Journeys* is helping them teach a variety of different subjects.

Last, Wade (1996) recommended that environmental educators “build bridges between EE and all sectors of the formal education community through educational reform” (p. 15). The educational methodologies promoted by *Journeys* and EE in general, such as interdisciplinary curricula and hands-on, student-centered, cooperative learning are all consistent with the educational reform movement (NEEAC, 1996; Wade 1996). In this sense, programs like *Journeys* and place-based education are the “bridge” that Wade suggested.

It seems that educators find the focus of “education context” offered by place-based approaches such as *Journeys* refreshing and empowering. In addition, *Journeys* seems to be helping teachers develop outdoor teaching skills, which may help them more effectively integrate teaching outdoors with teaching in the classroom. As one stakeholder (a TSS associate faculty member) put it:

> It's a great marriage between the classroom and the outdoors. It's the best of both worlds. Teachers traditionally have not taken advantage of that because there hasn’t been a program that effectively translated that. *Journeys* makes it doable for them and digestible.

There were many fewer comments about what should be changed about the program (n=87) (Table 9), another indicator of the popularity of *Journeys*. Nearly half of the comments about what should be changed were related to the curriculum activities and what is presented in the curriculum guide. For example, many teachers mentioned a need for more specificity in the curriculum guide regarding grade level or specific subject
areas. Other suggestions for improving the curriculum guide were simply to add more activities and ideas for how to implement Journeys, better organization, more specific instructions for the activities, and expanded resource lists.

The second largest group of comments about what to change was related to support components (31%). This, along with the number of support comments mentioned in “what should not be changed,” shows the importance of support. Most of the comments about support were not related to a particular weakness of one support component versus another, but were rather related to needing more support. For example, many teachers wanted more than one site visit from TSS, more interactions with TSS staff, more follow-up workshops, and more opportunities to share ideas with other Journeys teachers. Comments regarding more support, especially more workshops and interaction with TSS staff, may be related to the inability of some teachers to apply Journeys ideas to their specific situation. This along with comments about the weakness of the activity guide seems to indicate a need for some teachers to have specific models and mentors to follow. Comments about logistics involved the cost of attending

| TABLE 9. Teachers’ Perceptions of What Should Be Changed About Journeys from Open-Ended Question |
|-----------------------------------------------|---|---|
| What should be changed about Journeys? | % | N  |
| Curriculum specific activities | 48.3 | 42 |
| Support | 31.0 | 27 |
| Logistics | 8.0 | 7 |
| Miscellaneous | 12.6 | 11 |

*Percentages based on the total number of comments (n=87)
workshops. Many teachers may have these costs covered, however, by their school
district or by TSS grant support.

Factors Influencing Commitment Level

In addition to the open-ended responses, an analysis was done to determine what
aspects of the program might influence overall success. The primary measure of success
in this case was the amount teachers use *Journeys*. A dichotomous variable called USE
was created based on the variable “How often used.” The USE variable distinguishes
between teachers that use *Journeys* once a week or more, versus teachers that use
*Journeys* less than once per week. As mentioned earlier this distinction is a strong
indication of how well teachers are adapting *Journeys* into their classroom. Teachers
who reported using *Journeys* once a week or more in their classroom are thought to be
more likely using *Journeys* as a framework for integrating all subject areas.
Understanding the characteristics shared by teachers who were highly committed to
*Journeys* will provide further insight into the program’s strengths and weaknesses.

Table 10 shows means by USE for the teaching impacts presented in Table 4,
student impacts from Table 5, and teachers’ perception that *Journeys* helps them teach
specific subjects from Table 6. Kendall’s tau–c values also are presented, which indicate
the level and direction of association between level of USE and the other variables. Tau–c
values range from 1 to −1 with zero meaning no association. USE is most strongly
associated with subject area integration, so teachers who believe that *Journeys* is helping
them teach a variety of subjects tend to use *Journeys* more often (Table 10). USE is most
highly associated with science (tau–c =0.49) and language arts (tau–c =0.52).
Associations for social studies, reading, and creative arts were slightly lower (tau–c
TABLE 10. Perceived Impacts by Level of USE

<table>
<thead>
<tr>
<th>Impact</th>
<th>Use Journeys once per week or more</th>
<th>Use Journeys less than once per week</th>
<th>Difference between mean</th>
<th>Kendall’s tau-c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased enthusiasm for teaching</td>
<td>1.71 (52)</td>
<td>1.42 (48)</td>
<td>0.29</td>
<td>0.24</td>
</tr>
<tr>
<td>Increased effectiveness as a teacher</td>
<td>1.60 (53)</td>
<td>1.19 (48)</td>
<td>0.41</td>
<td>0.39</td>
</tr>
<tr>
<td>Increased parental involvement</td>
<td>0.79 (48)</td>
<td>0.20 (41)</td>
<td>0.59</td>
<td>0.29</td>
</tr>
<tr>
<td>Increased use of community members</td>
<td>1.00 (51)</td>
<td>0.44 (43)</td>
<td>0.56</td>
<td>0.30</td>
</tr>
<tr>
<td>Increased collaboration w/other teachers</td>
<td>1.13 (52)</td>
<td>0.68 (44)</td>
<td>0.45</td>
<td>0.25</td>
</tr>
<tr>
<td>Increased student enthusiasm</td>
<td>1.63 (52)</td>
<td>1.13 (48)</td>
<td>0.50</td>
<td>0.38</td>
</tr>
<tr>
<td>Helps students learn about place</td>
<td>1.94 (51)</td>
<td>1.66 (47)</td>
<td>0.28</td>
<td>0.27</td>
</tr>
<tr>
<td>Helps students connect to place</td>
<td>1.89 (53)</td>
<td>1.58 (48)</td>
<td>0.31</td>
<td>0.26</td>
</tr>
<tr>
<td>Decreased discipline problems</td>
<td>0.63 (49)</td>
<td>0.36 (45)</td>
<td>0.27</td>
<td>0.17</td>
</tr>
<tr>
<td>Helps teach science</td>
<td>1.87 (52)</td>
<td>1.30 (46)</td>
<td>0.57</td>
<td>0.49</td>
</tr>
<tr>
<td>Helps teach social studies</td>
<td>1.53 (47)</td>
<td>1.00 (45)</td>
<td>0.53</td>
<td>0.43</td>
</tr>
<tr>
<td>Helps teach creative arts</td>
<td>1.46 (50)</td>
<td>0.86 (44)</td>
<td>0.60</td>
<td>0.43</td>
</tr>
<tr>
<td>Helps teach language arts</td>
<td>1.51 (51)</td>
<td>0.75 (44)</td>
<td>0.76</td>
<td>0.52</td>
</tr>
<tr>
<td>Helps teach reading</td>
<td>1.16 (49)</td>
<td>0.55 (44)</td>
<td>0.61</td>
<td>0.43</td>
</tr>
<tr>
<td>Helps teach math</td>
<td>0.89 (47)</td>
<td>0.47 (43)</td>
<td>0.42</td>
<td>0.26</td>
</tr>
<tr>
<td>Helps meet state standards</td>
<td>1.00 (50)</td>
<td>0.55 (44)</td>
<td>0.45</td>
<td>0.25</td>
</tr>
</tbody>
</table>

* Scale for means range from 2 = “very strongly agree,” to 0 = “neither agree nor disagree,” to −2 = “very strongly disagree.”

=0.43). This supports the previous finding that Journeys helps teachers teach a variety of subjects.

Interestingly, one of the impacts most weakly associated with USE is whether Journeys helps teachers meet state standards (tau-c =0.25). In other words, teachers using Journeys more did not necessarily believe that Journeys was helping them meet standards when compared to teachers that were using Journeys less. Remember that mean agreement for whether Journeys helped teachers meet state standards also was relatively low (0.79), and that lack of relevance to state standards was not considered a
barrier to implementing *Journeys* (Table 7). Again, this supports the notion that teachers involved with *Journeys* tend not to place much emphasis on standards in the first place, or they are fairly confident they are meeting state standards regardless of their teaching approach.

Table 11 shows associations between level of USE and perceived barriers (see Table 7) placed in order of decreasing magnitude of tau–c. USE was negatively associated with all of the barriers, meaning that in general teachers using *Journeys* once a week or more showed fewer barriers to implementing *Journeys*. USE was moderately associated with “lack of knowledge and understanding of *Journeys*,” “lack of ideas about how to use *Journeys*,” and “lack of relevance of *Journeys* to what I teach,” with tau–c of –0.35, –0.27, and –0.25, respectively. These results suggest that teachers using *Journeys*

<table>
<thead>
<tr>
<th>TABLE 11. Perceived Barriers by Level of USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means of perceived barriers by level of USE*</td>
</tr>
<tr>
<td>Perceived barrier</td>
</tr>
<tr>
<td>Lack of knowledge and understanding of <em>Journeys</em></td>
</tr>
<tr>
<td>Lack of time for <em>Journeys</em> activities</td>
</tr>
<tr>
<td>Lack of ideas about how to use <em>Journeys</em></td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to what I teach</td>
</tr>
<tr>
<td>Lack of time to prepare <em>Journeys</em> activities</td>
</tr>
<tr>
<td>Lack of natural areas near school</td>
</tr>
<tr>
<td>Transportation</td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to state standards</td>
</tr>
<tr>
<td>Lack of support from other teachers at their school</td>
</tr>
<tr>
<td><em>Journeys</em> does not work very well</td>
</tr>
<tr>
<td>Lack of funding</td>
</tr>
<tr>
<td>Lack of principal/administrative support</td>
</tr>
<tr>
<td>Lack of parental support</td>
</tr>
<tr>
<td>Class size too large</td>
</tr>
<tr>
<td>Liability concerns</td>
</tr>
<tr>
<td>Lack of <em>Journeys</em> instructional materials</td>
</tr>
</tbody>
</table>

* Scale for means range from 1 = “not a barrier,” to 5 = “major barrier.”
less than once a week do not fully understand the philosophy of Journeys, or were unclear how to adapt the teaching approach to their classroom. Much of the reason for this overall lack of knowledge may be due to weaknesses in the activity guide's ability to provide specific implementation ideas. This also was mentioned by several teachers in response to the open-ended question about what should be changed about Journeys (see Table 9). An overall lack of knowledge may also be attributed to some deficiency in their initial training, or a lack of follow-up support.

Both barriers related to time showed moderate association with level of USE. This result is consistent with associations between USE and various subject areas (see Table 10), and is a strong indication that teachers using Journeys once a week or more do not perceive Journeys as an add-on curriculum requiring additional effort. Interestingly, “lack of Journeys’ materials” was not associated with USE (tau-c = -0.02). One of the support components offered to teachers is a “teaching enhancement kit” containing several items useful to implementing Journeys. However, not all teachers receive the kits. The fact that there is little association between level of USE and the lack of materials may suggest that these kits do little to help teachers implement Journeys.

Analysis of Support Components

Teachers were asked to rate the importance of six support components of Journeys (Table 12). The 5-point Likert-scale used to measure the importance of these components ranged from 5 = “very important” to 1 = “unimportant.” Respondents were also instructed to circle a “DA” for “doesn’t apply” if they did not receive the support component mentioned. Almost all of the support components were considered important or very important. Not surprisingly, the most important component was the initial
training (mean=4.64), followed by site visits from TSS staff and teaching enhancement kits supplied by TSS. The least important component was the *Journeys* activity guide, which was between moderately important to important (mean=3.83).

The fact that all of the components were considered important or very important is consistent with the open-ended comments. Open-ended comments also indicate that the most important aspect of *Journeys* support was the initial training, and the least important was the activity guide. Initial training serves many other important functions beyond just disseminating information and activity ideas. The initial training also inspires and recharges teachers. The lower ranking of the activity guide is further evidence that it is a weakness of the program. This may not be easily fixed. The purpose of the activity guide is to inspire ideas that can be adapted to the teachers' local areas. Making it more specific may make it more difficult to adapt ideas. There appears to be room for improvement, however.

<table>
<thead>
<tr>
<th>Support component</th>
<th>Mean* (N)</th>
<th>Standard deviation</th>
<th>% Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>The initial <em>Journeys</em> training</td>
<td>4.64 (98)</td>
<td>0.66</td>
<td>73.5</td>
</tr>
<tr>
<td>The site visit from TSS staff</td>
<td>4.48 (79)</td>
<td>0.66</td>
<td>57.0</td>
</tr>
<tr>
<td>Teaching enhancement kits supplied by TSS</td>
<td>4.37 (76)</td>
<td>0.78</td>
<td>52.6</td>
</tr>
<tr>
<td>Attending additional <em>Journeys</em> workshops at TSS</td>
<td>4.28 (61)</td>
<td>0.82</td>
<td>49.2</td>
</tr>
<tr>
<td>Collaborating with other teachers</td>
<td>4.08 (85)</td>
<td>0.92</td>
<td>40.0</td>
</tr>
<tr>
<td>The <em>Journeys</em> curriculum/activity guide</td>
<td>3.83 (94)</td>
<td>1.12</td>
<td>37.2</td>
</tr>
</tbody>
</table>

* Scale for means range from 1 = "unimportant," to 5 = "very important."
While nearly all of the support components were considered important, one must keep in mind that not all teachers received all of the support components mentioned. In particular, many teachers did not receive site visits from TSS staff, teaching enhancement kits, or additional training. This leads to a secondary research question: “How do these support components influence a teacher’s commitment to Journeys?” To answer this question, we looked at how each of the support components was associated with USE. Three dichotomous independent variables were created based on whether a teacher received a specific component or not (values equaled “yes” or “no”). Since all of the trained teachers received the initial training and the activity guide, these support components were not considered. The three variables that were considered were whether teachers received a site visit, whether they attended additional workshops, and whether they received a teaching enhancement kit. These variables were created based on responses to questions one and five on the survey. Teachers that circled “does not apply” (for question 5) were assumed not to have received the support component mentioned.

Initially, cross tabulations were used to examine the relationship between USE and whether they received particular support component. Table 13 summarizes the results for the selected support categories by USE. Most teachers who reported attending additional workshops also reported using Journeys once a week or more (62.3%). Receiving site visits and materials had much less effect on how often teachers used Journeys. Slightly more than half of the teachers who received a site visit use Journeys once a week or more (53.2%). Similar results were found for receiving additional materials, where teachers were split 50-50 on USE.
These observations are further supported by the results of a binary logistic regression model. This model (Table 14) allows for the examination of the partial odds ratios of the support components (independent variables) and USE (dependent variable). The model predicts whether teachers are using Journeys at least once a week or less based on whether they received the various support components. In general, it does a moderately good job of correctly classifying how often teachers use Journeys (61% correctly classified). The model did a better job of predicting those that used Journeys once a week or more (76.9% correctly classified), and was substantially weaker at predicting those that used Journeys less than once per week (43.8% correctly classified). This suggests that there are other important reasons why teachers use Journeys more or less beyond just the amount and type of support they receive (Appendix H).

Closer examination of the partial odds ratios for the three support components reveals that attending additional workshops was the most influential support component determining how often teachers use Journeys. Teachers who attended additional workshops were 3.6 times more likely to report using Journeys once a week or more. Receiving site visits had a much lower effect, with partial odds of 1.13. This result is consistent with cross tabulations presented in Table 13. Teachers receiving additional
TABLE 14. Summary of Logistic Regression Analysis Predicting Whether Teachers Use Journeys Once per Week or More

<table>
<thead>
<tr>
<th>Support component</th>
<th>B</th>
<th>SE</th>
<th>Odds ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended additional workshops</td>
<td>1.29</td>
<td>.49</td>
<td>3.63</td>
</tr>
<tr>
<td>Received a site visit</td>
<td>.12</td>
<td>.58</td>
<td>1.13</td>
</tr>
<tr>
<td>Received additional materials</td>
<td>-.97</td>
<td>.58</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Percent of cases correctly classified by model

| Use Journeys once a week or more   | 76.9% |
| Use Journeys less than once a week | 43.8% |
| Overall                           | 61.0% |

materials are actually less likely to report using Journeys once a week or more (note the negative value for B and the partial odds below 1 [0.38]). There seem to be no logical explanation for this result other than potential misinterpretation of the survey question, where teachers rated the importance of “the teaching enhancement kits supplied by TSS (the kit included jeweler’s loupes, binoculars, field guides, weather station, etc.).” If teachers rated the importance of this item, they were assumed to have received the component. If they circled “does not apply,” they were assumed not to have received the component. Over three-quarters of the teachers reported receiving these materials, which was far more than anticipated based on TSS documentation. Either more teachers received materials from TSS than was realized, teachers received materials from other sources and believed they came from TSS, or they misinterpreted the question.

It is important to realize this model only represents an association between these variables, not a causal relationship. It is unclear whether teachers attend more training sessions because they use Journeys often, or whether they use Journeys often because they have attended more training sessions. More than likely the answer lies somewhere
in the middle. Nevertheless, this likely suggests teachers need to attend more than one training session to effectively incorporate *Journeys* into their classrooms. While the initial training was ranked as the most important component in helping teachers implement the program, it may not be enough to enable teachers to use *Journeys* at a high level. While other researchers have documented that many EE teacher-training programs offer some sort of follow-up support (Lieberman, 1995; Middlestadt et al., 1999), they did not measure the impact of this support.

**Grade-Level Analysis**

Grade-level differences in USE are presented in Table 15. Clearly, a greater percentage of K-3 teachers (62.5%) use *Journeys* once per week or more than any of the other grades. With the exception of high school and multi-age, the other grades were almost evenly split among level of USE. Most of the multi-age (66.7%) used *Journeys* less than once per week. This is not surprising because, as mentioned earlier, most of these teachers were specialty teachers. None of the high school teachers were using *Journeys* once per week or more, though there were only two teachers responding.

<table>
<thead>
<tr>
<th>Grade level</th>
<th>% Using <em>Journeys</em> once per week or more (N)</th>
<th>% Using <em>Journeys</em> less than once per week (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-3</td>
<td>62.5 (25)</td>
<td>37.5 (15)</td>
</tr>
<tr>
<td>4-6 Elementary</td>
<td>47.5 (19)</td>
<td>52.5 (21)</td>
</tr>
<tr>
<td>6-8 Middle</td>
<td>50.0 (6)</td>
<td>50.0 (6)</td>
</tr>
<tr>
<td>High School</td>
<td>0.0 (0)</td>
<td>100.0 (2)</td>
</tr>
<tr>
<td>Multi-age</td>
<td>33.3 (2)</td>
<td>66.7 (4)</td>
</tr>
</tbody>
</table>
Grade-level differences in perceived impacts and barriers were analyzed to determine why *Journeys* is being used more often in younger grades. Means and tau–c for perceived impacts by grade level are summarized in Tables 16-18 (multi-age responses were treated as missing data for purposes of calculating tau–c because it is not an ordinal level measurement). K-3 teachers showed higher levels of agreement than higher grades for nearly all of the perceived impacts (Tables 16-18). Mean responses for increased collaboration with other teachers, use of community members, and teaching reading, and creative arts were slightly higher for 6th-8th grade middle school teachers. Measures of association (tau–c) were also calculated for all of the perceived impacts by grade level. Most show no or very weak associations between grade level and perceived impacts with three notable exceptions. “Increased parental involvement,” “help teaching math,” and “help meeting state standards” all showed moderate associations with tau–c of -0.21, -0.24, and -0.31, respectively. In all of these cases, the mean responses for K-3 teachers were substantially higher than for any of the other grade levels.

In the case of parental involvement, K-3 teachers in general agreed that *Journeys* has increased the amount of parental involvement in their class (mean=0.89), while the other grades tend to be closer to neutral and high school teachers disagreed (Table 15). One possible explanation for this may be that it is easier to obtain parental involvement at younger grades in general. Younger kids may be more likely to have a parent available, and parents may feel more comfortable being involved with younger grades because of content level and student management issues.

Differences among grade level are most striking in terms of the ability of *Journeys* to help meet state standards. K-3 teachers showed agreement that *Journeys*
TABLE 16. Perceived Impacts of Using *Journeys* on Teacher Attitudes and Behaviors by Grade Level

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Means of perceived impacts by grade level (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-3</td>
</tr>
<tr>
<td>Increased enthusiasm for teaching</td>
<td>1.62(40)</td>
</tr>
<tr>
<td>Increased effectiveness as a teacher</td>
<td>1.50(40)</td>
</tr>
<tr>
<td>Increased parental involvement</td>
<td>0.89(36)</td>
</tr>
<tr>
<td>Increased use of community members</td>
<td>0.79(39)</td>
</tr>
<tr>
<td>Increased collaboration w/other teachers</td>
<td>1.05 (38)</td>
</tr>
</tbody>
</table>

*Multi-age responses were treated as missing data for purposes of calculating tau-c because it is not an ordinal level measurement.

Mean based on 5-point agreement scale where -2 = strongly disagree, -1 = disagree, 0 = a neutral response, 1 = agree, and 2 = strongly agree. There was also a DA (doesn’t apply) category. Respondents who circled DA on the survey are not incorporated into the calculation of the mean.

TABLE 17. Perceived Impacts of Using *Journeys* on Students by Grade Level

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Means of perceived impacts by grade level (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-3</td>
</tr>
<tr>
<td>Increased student enthusiasm</td>
<td>1.48(38)</td>
</tr>
<tr>
<td>Helps students learn about place</td>
<td>1.89 (38)</td>
</tr>
<tr>
<td>Helps students connect to place</td>
<td>1.88 (40)</td>
</tr>
<tr>
<td>Decreased discipline problems</td>
<td>0.62 (37)</td>
</tr>
</tbody>
</table>

*Multi-age responses were treated as missing data for purposes of calculating tau-c because it is not an ordinal level measurement.

Mean based on 5-point agreement scale where -2 = strongly disagree, -1 = disagree, 0 = a neutral response, 1 = agree, and 2 = strongly agree. There was also a DA (doesn’t apply) category. Respondents who circled DA on the survey are not incorporated into the calculation of the mean.
helps them teach state standards (mean = 1.16), and as grade level increases agreement decreases (\( \tau_c = 0.31 \)) (Table 17). Perhaps *Journeys* ideas and activities are at a level where their adaptation in terms of state standards is either easier or more appropriate at lower grades. As content becomes increasingly more complex with successive grades, it may become more difficult in terms of planning time involved, etc., to adapt a *Journeys* activity or idea to help teach that content.

Another reason *Journeys* may be more effective at younger grade levels is that it is easier logistically to implement *Journeys* in situations where there is one class and one teacher, which is more common at elementary grades, especially K-3. Going on regularly scheduled field trips and consistently taking students outside to learn is most likely easier for teachers who can count on having the same group of students for the majority of the school day and do not have to rely heavily on collaboration with other teachers to

<table>
<thead>
<tr>
<th>TABLE 18. Perceived Impacts of Using <em>Journeys</em> to Help Teach Subject Areas by Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Means of perceived impacts by grade level (N)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impacts</th>
<th>K-3</th>
<th>4-6</th>
<th>6-8</th>
<th>Middle</th>
<th>High school</th>
<th>Multi-age</th>
<th>Overall means</th>
<th>Kendall's ( \tau_c )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps teach science</td>
<td>1.68(40)</td>
<td>1.53(40)</td>
<td>1.50(10)</td>
<td>1.00(1)</td>
<td>1.83(6)</td>
<td>1.60(97)</td>
<td>-0.16</td>
<td></td>
</tr>
<tr>
<td>Helps teach social studies</td>
<td>1.44(39)</td>
<td>1.11(36)</td>
<td>1.18(11)</td>
<td>1.00(1)</td>
<td>1.25(4)</td>
<td>1.26(91)</td>
<td>-0.17</td>
<td></td>
</tr>
<tr>
<td>Helps teach creative arts</td>
<td>1.00(40)</td>
<td>1.00(39)</td>
<td>1.10(10)</td>
<td>1.00(1)</td>
<td>1.00(4)</td>
<td>1.17(93)</td>
<td>-0.18</td>
<td></td>
</tr>
<tr>
<td>Helps teach language arts</td>
<td>1.33(39)</td>
<td>1.03(40)</td>
<td>1.10(10)</td>
<td>1.00(1)</td>
<td>0.75(4)</td>
<td>1.15(94)</td>
<td>-0.14</td>
<td></td>
</tr>
<tr>
<td>Helps teach reading</td>
<td>1.08(39)</td>
<td>0.65(37)</td>
<td>1.09(11)</td>
<td>1.00(1)</td>
<td>0.25(4)</td>
<td>0.87(92)</td>
<td>-0.11</td>
<td></td>
</tr>
<tr>
<td>Helps teach math</td>
<td>0.95(40)</td>
<td>0.47(36)</td>
<td>0.63(8)</td>
<td>0.50(2)</td>
<td>0.33(33)</td>
<td>0.67(89)</td>
<td>-0.24</td>
<td></td>
</tr>
<tr>
<td>Helps meet state standards</td>
<td>1.16(38)</td>
<td>0.59(37)</td>
<td>0.55(11)</td>
<td>-1.00(2)</td>
<td>0.60(5)</td>
<td>0.78(93)</td>
<td>-0.31</td>
<td></td>
</tr>
</tbody>
</table>

* Multi-age responses were treated as missing data for purposes of calculating \( \tau_c \) because it is not an ordinal level measurement.

* Mean based on 5-point agreement scale where -2 = strongly disagree, -1 = disagree, 0 = a neutral response, 1 = agree, and 2 = strongly agree. There was also a DA (doesn't apply) category for teachers for which the statement does not apply. Respondents who circled DA on the survey are not incorporated into the calculation of the mean.

* There were no high school teachers responses to this question.
develop interdisciplinary activities. Note that, while 6th-8th grade middle school teachers show consistently higher perceived mean impacts when compared to the 4th-6th grade elementary teachers, there were relatively few 6th-8th grade middle and high school respondents (N=maximum of 12 for perceived impacts) (Tables 16, 17, and 18).

Analysis of grade level by perceived barriers yielded results similar to those of the perceived impact analysis. The barrier most highly associated with grade level was "lack of relevance of Journeys to state standards" (tau-c=0.19) (Table 19). This is further evidence that, in terms of state standards, Journeys may be more appropriate or more easily adapted at younger grades. "Lack of ideas about how to use Journeys" and "class size too large" also showed weak associations (tau-c=0.17 and 0.13, respectively) with grade level, again indicating that Journeys may be more easily implemented at younger grades. Another interesting item is that "lack of support from other teachers at their school" tended to be more of a barrier for upper grade level teachers (tau-c=0.14). This may be due to the greater need for Journeys teachers at higher grades (particularly grade 7-high school) to collaborate because disciplines tend to be separated.

Although multi-age teachers were treated as missing data for purposes of calculating tau-c, examining the means provided one interesting finding. Multi-age teachers believed "lack of relevance of Journeys to what I teach" was a moderate barrier, second only behind "lack of time for Journeys activities" (means=2.80 and 2.91, respectively) (Table 19). These results are consistent with the finding that most (7 out 11) of the multi-age teachers had some sort of teaching specialty such as art, music, or reading. Many of these teachers may see several grades for short periods during the course of a week, which may make it difficult to use Journeys. As one of the multi-age
teachers describing barriers wrote: “Time for activities, time to prepare, and class size. I see my classes for 45 minutes from beginning to end, once a week. So the continuity routinely gets interrupted.” Lastly, 6th-8th grade middle school teachers’ most substantial barrier was “transportation problems” (mean 3.54). As mentioned previously, it is unclear if transportation was interpreted as travel to TSS for training, or travel with students on field trips. Nonetheless, travel with students may be logistically more difficult for 6th-8th grade middle school teachers to organize, again because of limitations related to having students for short time periods during the course of the school day.
<table>
<thead>
<tr>
<th>Perceived barrier</th>
<th>Means of perceived impacts by grade level (N)</th>
<th>Overall mean</th>
<th>Kendall's tau-(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-3</td>
<td>4-6</td>
<td>6-8 Middle</td>
</tr>
<tr>
<td>Lack of time for <em>Journeys</em> activities</td>
<td>2.69(42)</td>
<td>2.85(40)</td>
<td>2.92(13)</td>
</tr>
<tr>
<td>Lack of time to prepare <em>Journeys</em> activities</td>
<td>2.71(42)</td>
<td>2.85(40)</td>
<td>2.92(12)</td>
</tr>
<tr>
<td>Lack of funding</td>
<td>2.43(42)</td>
<td>2.58(40)</td>
<td>2.77(13)</td>
</tr>
<tr>
<td>Transportation problems</td>
<td>2.43(42)</td>
<td>2.13(38)</td>
<td>3.54(13)</td>
</tr>
<tr>
<td>Class size too large</td>
<td>1.88(42)</td>
<td>2.13(40)</td>
<td>2.62(13)</td>
</tr>
<tr>
<td>Lack of <em>Journeys</em> instructional materials</td>
<td>2.05(41)</td>
<td>2.13(40)</td>
<td>1.62(13)</td>
</tr>
<tr>
<td>Lack of knowledge and understanding of <em>Journeys</em></td>
<td>1.74(42)</td>
<td>1.80(40)</td>
<td>1.77(13)</td>
</tr>
<tr>
<td>Liability concerns</td>
<td>1.69(42)</td>
<td>1.85(40)</td>
<td>1.92(12)</td>
</tr>
<tr>
<td>Lack of ideas about how to use <em>Journeys</em></td>
<td>1.59(41)</td>
<td>1.73(40)</td>
<td>1.62(13)</td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to what I teach</td>
<td>1.40(42)</td>
<td>1.69(39)</td>
<td>1.46(13)</td>
</tr>
<tr>
<td>Lack of relevance of <em>Journeys</em> to state standards</td>
<td>1.31(42)</td>
<td>1.90(40)</td>
<td>1.54(13)</td>
</tr>
<tr>
<td>Lack of support from other teachers at their school</td>
<td>1.52(42)</td>
<td>1.55(40)</td>
<td>1.69(13)</td>
</tr>
<tr>
<td>Lack of natural areas near school</td>
<td>1.57(42)</td>
<td>1.38(40)</td>
<td>2.23(13)</td>
</tr>
<tr>
<td>Lack of parental support</td>
<td>1.38(42)</td>
<td>1.33(39)</td>
<td>1.62(13)</td>
</tr>
<tr>
<td>Lack of principal/administrative support</td>
<td>1.31(42)</td>
<td>1.35(40)</td>
<td>1.62(13)</td>
</tr>
<tr>
<td><em>Journeys</em> does not work very well</td>
<td>1.05(42)</td>
<td>1.08(40)</td>
<td>1.23(13)</td>
</tr>
</tbody>
</table>

* Multi-age responses were treated as missing data for purposes of calculating tau-\(c\) because it is not an ordinal level measurement.

*b Scale for means is 1 = "not a barrier," to 3 = "moderate barrier," to 5 = "major barrier."
CHAPTER 6
SUMMARY AND CONCLUSIONS

This study was an evaluation of Journeys, a place-based EE teacher-training program. The primary tool used for answering the evaluation questions was a mail survey of the entire population of teachers trained to use Journeys since its inception. In this chapter, results from the mail survey in the context of the evaluation questions are summarized and conclusions are drawn. The implications of these findings also are discussed, including recommendations for further development of Journeys. Finally, recommendations for future research are suggested.

Summary of Results

Evaluation Question 1: “What Are the Characteristics of Journeys Teachers and Schools?”

Most of the teachers involved with Journeys were female, taught elementary grade levels in public schools, and were teaching in communities with populations ranging from 25,000-100,000. Most of the teachers reported using other EE curricula such as Project Learning Tree, and just over half held master’s degrees. These results are mostly consistent with other EE programs though a slight majority of Journeys teachers taught K-3 grades, while others have found that 4th-6th grade teachers are most frequently involved with EE programs. Our study results suggest Journeys may be more easily adapted to the content level and state standards at these younger grade levels. In addition, the logistics of using Journeys, such as taking students outside to learn, may be easier in classrooms with one teacher.
Evaluation Question 2: "How Have Journeys Teachers Been Trained?"

Over one third of the teachers have been supported by the TSS Journeys grant at some point during their involvement with the program. While some of the teachers supported by the grant may also have attended summer workshops, one third have only attended summer workshops and have never received support from the TSS grant. Only 14% of the teachers were trained strictly at their schools. Just under half of the teachers have attended more than one training, and nearly all of the teachers reported having other teachers at their school who were also trained to use Journeys.

Evaluation Question 3: "What Is the Level of Commitment to the Use of Journeys?"

Nearly all trained teachers go on to use Journeys with their classes, and show a commitment to making Journeys a permanent part of their classroom. Over half of the teachers use Journeys quite frequently (once a week or more).

Evaluation Question 4: "What Is the Perceived Influence of the Program on Teachers' Attitudes Toward Teaching and Teaching Behaviors?"

Teachers generally agreed that their involvement with Journeys has had positive effects on their teaching behaviors and attitudes towards teaching. In particular, Journeys increased their enthusiasm for teaching and their effectiveness as teachers. Agreement that Journeys increased parental involvement and use of community members to teach was moderate. These results are similar to those found for teachers involved with EIC programs.
Evaluation Question 5: “What Are the Teachers’ Perceptions of the Influence of Journeys on Students”

Journeys appears to have positive effects on students. Teachers believe their involvement with Journeys has increased their students’ enthusiasm for learning, helped them learn about their place, and helped them connect to their place. However, less than half of the teachers agreed that Journeys decreased discipline problems with their students.

Evaluation Question 6: “What Subjects Does Journeys Help Teachers Teach?”

Journeys appears to be an effective interdisciplinary program. Though teacher agreement was strongest that Journeys helps in teaching science and social studies, typical of other EE programs, teachers also agreed that Journeys helps them teach other subjects, especially creative arts and language arts. There was not strong overall agreement with the notion that Journeys helps teachers meet state standards, though K-3 teachers agreed that it helps.

Evaluation Question 7: “What Are the Barriers to Implementing Journeys?”

Barriers to implementing Journeys are quite similar to those found for other EE programs. Barriers associated with a lack of time for activities or to prepare are the most significant. Other notable barriers to implementing Journeys were lack of funding, transportation problems, and class size being too large.
Evaluation Question 8: "What Are the Strengths and Weaknesses of Journeys?"

Results from open-ended questions revealed that many of the support components such as site visits, materials provided, and additional follow-up workshops are largely responsible for the popularity of Journeys. Follow-up workshops are particularly important and are strongly related to how often teachers actually use Journeys with their students. In addition, there is some evidence suggesting that holding these workshops and training sessions at TSS, located in a scenic National Park, may be a significant incentive to attend. Journeys teachers show a strong affinity for the program’s philosophy, though it is unclear what specifically is attractive about this philosophy. The few comments about what should be changed mostly dealt with support components, especially receiving more support.

Implications of Findings

The results of this evaluation have several important implications for not only TSS and the continued refinement of Journeys, but also for the field of EE and other nonformal EE organizations. Many of these findings confirm TSS’s speculations about Journeys. Probably the most important finding from the perspective of TSS is that Journeys is a popular, successful outreach program, which receives substantial use by teachers and has become a permanent part of many classrooms.

Another important finding is that Journeys has been successful without having a strong and detailed activity guide. Instead, the Journeys approach has been to expose teachers to the philosophy of place-based education as a framework for their classroom and everything they teach. This philosophy has been delivered to teachers in a very
inspiring way, with the activity guide a secondary stepping-stone to spur ideas about how to develop a sense of place with students. This approach differs from other teacher training programs such as Project Wild, in that the activities are not the focus, but rather how to use a place-based framework in the classroom. The program has focused far more heavily on “educational context” rather than “environmental content.” This evaluation shows that teachers respond to this approach.

Even though Journeys deemphasizes the use of the activity guide, the results show teachers may still benefit from improvements in the guide. One specific recommendation for TSS is to continue to develop the activity guide but with caution. Because one of the strengths of Journeys is that it is teacher-centered, it is important for the guide to reflect this attribute. Therefore, any further development of the guide should be done in close collaboration with teachers involved on a daily basis with implementing Journeys. This could take the form of simply compiling a bank of ideas and activities that have already met with some success with teachers. At the same time, given the current emphasis on standards and standardized testing, it is suggested that TSS work with teachers to correlate existing Journeys ideas and activities with state standards.

Part of the reason Journeys has been successful can be attributed to the support offered to teachers, especially in terms of opportunities for follow-up workshops. TSS continues to offer follow-up workshops and retreats open to all Journeys teachers. Increased teacher enthusiasm for teaching is one of the major impacts of Journeys, and likely explains the high use and commitment to the program. At least part of this enthusiasm may be attributed to the retreat atmosphere of the training sessions, and the added benefit of holding training sessions in Grand Teton National Park. However,
attending workshops at TSS may be financially difficult for teachers, especially considering the lengthy travel required for many. One possible solution would be to approach schools with the idea of hosting more regionally based workshops.

*Journeys* seems to be more successful with younger grades, which is fairly unique when compared to other EE efforts. *Journeys* also shows potential to be appealing to middle school and high school teachers as well, but differences in class structure and expectations make this difficult. For interdisciplinary programs like *Journeys* to be successful at these upper grades, collaboration amongst teachers of different subjects probably plays a more significant role than in one-teacher classes. By forming partnerships and working closely with upper grade teachers, the *Journeys* program has an opportunity to help upper grades become more interdisciplinary, and to expose upper level students to EE concepts and ideas.

For the field of EE and institutions similar to TSS, this study provides evidence that place-based education and programs like *Journeys* are viable approaches to training teachers to infuse EE concepts into mainstream education. Many of the successful aspects of the *Journeys* program, such as site visits and continuing workshops, may be more easily implemented at EE centers where the teachers are nearby.

The successes and strengths of the *Journeys* program shown by this research are also evidence that programs like *Journeys* are important links between EE and educational reform efforts. Many of the teaching methodologies promoted by *Journeys* are similar to those championed by the educational reform movement. The educational partnerships with schools formed by TSS through the delivery of the *Journeys* program are examples of the role EE centers can play in educational reform.
Recommendations for Future Research

While this evaluation answered several important questions surrounding teachers' perceptions of *Journeys*, it is by no means a comprehensive evaluation of the program. Much of what was learned from this evaluation should be applied to developing a more thorough examination of *Journeys*. The next logical step in a more thorough examination would be to directly evaluate the impacts of place-based education programs like *Journeys* on students. Information on learner outcomes from such an evaluation would likely provide important insights into not only the effects of place-based education, but also the effects of interdisciplinary curricula, student-centered learning, and other teaching methodologies associated with place-based education and educational reform.

This study showed that teachers have a strong affinity for the philosophy of place-based education. However, the study fell short of clearly explaining why teachers are attracted to this philosophy. It would be useful to conduct a series of more in-depth interviews of *Journeys* teachers to gain a better understanding of their motivations for using the program. Such interviews could also be useful in providing more detailed information on how their teaching has changed as a result of being involved with the program.

Finally, throughout this thesis, place-based education has been used synonymously with EE, yet it is still unclear exactly how these two relate. Future research must attempt to answer the question of whether placed-based education is an effective approach to achieving the goals of EE.


APPENDICES
Appendix A: *Journeys* Grant Proposal
GRANT PROPOSAL
JOURNEYS, SENSE OF PLACE EDUCATION
Submitted to _______ Foundation
______, 2000

Name of organization: Teton Science School
Mailing address: P.O. Box 68, Kelly, WY 83011
Contact: Director of Development Telephone: (307) 733-4765

Organization's Experience Related to Grant Project
TSS, a nonprofit residential education institution located in Grand Teton National Park, Wyoming, has provided experiential natural science educational programs for students of all ages for 32 years. We teach more than 5,000 students each year in residential and nonresidential programs. The TSS Outreach faculty teaches a variety of programs to more than 2,000 public school students in Utah, Montana, and Wyoming per year and offers several teacher workshops. TSS Outreach programs have been sponsored by individuals and foundations including the Liz Claiborne-Art Ortenberg Foundation, Pew Charitable Trusts, the Hearst Foundation, and Toyota USA Foundation.

Background On TSS Outreach Project: Journeys
'Sense of Place,' a popular term in educational circles, is seen by many as something some in our society have lost and at the same time as a need of today's students. Contemporary writers as diverse as David Orr, John Elder, Terry Tempest-Williams and Stephen Trimble speak to the critical nature of young people's need to know the place in which they live from the inside out. Developing a sense of place helps people become more attached to the many elements that are a part of their environment.
TSS has created the Journeys project to help students and teachers explore this concept of sense of place. The Journeys project is a curriculum and on-site teaching program for grades K–8. Journeys includes explorations of the local physical and natural environment, local human and cultural history, and the present-day community to help students gain a sense of place. This sense of place gives students a context for understanding and participating in their natural and human environments. Realizing that our society is transient, the Journeys curriculum focuses on developing knowledge and skills that are life-long in their scope and transferable in their application.
Journeys provides a thread around which all, or a significant part, of the entire curriculum can be organized to provide an integrated course of study. It can also function as a supplemental curriculum.

Statement of need
In 1999–2000, fourteen new teachers plus three past teachers who served as mentors participated in the full program including the training and TSS classroom site visit, bringing the total of teachers participating in the full program to 77 since 1996. In 1998, in response to teacher and administration requests, the Outreach faculty revised the
training program so that they could train teachers to use *Journeys* without the on-site classroom visits. These schools, in Utah, Montana, Colorado and Massachusetts paid TSS for the training, materials, and support services. An additional four hundred teachers participated. Approximately 70% of the teachers trained since 1996 are still using the program in their classrooms.

*Journeys* has become a significant part of the curriculum in several schools. One program goal is to train all the teachers at one or more grade levels in a participating school. These teachers and students can then collaborate on projects and provide new ideas and enthusiasm for the program. Several schools are moving toward this goal, and eight schools have incorporated *Journeys* as part of the curriculum for the entire school.

By continuing to offer *Journeys*, we will be able to explore its potential and develop new processes to meet the growing demand for participation in the project. To meet these needs, we are seeking funding to teach the full program in 14–18 new classrooms in Utah, Montana, and Wyoming during the 1999-2000 school year.

TSS funds all of its public school outreach programs through foundation grants and contributions from private donors so that schools may participate regardless of budget constraints.

**Goals and Objectives of Journeys Program**

- To integrate science, social studies, geography, language arts, math and arts activities to help young people develop the skills and knowledge that will enable them to gain a greater sense of the place in which they live;
- To provide teachers a process which they can use to facilitate student awareness and understanding of their local geographic environment, the human-built environment, the natural history of the area, the human history, and the implications of human activity on the environment;
- To help students develop knowledge and habits that are life-long in their scope and transferable in their application;
- To provide teachers a year-long curriculum which may be used in part or as a whole and which may be integrated with existing school curricula;
- To train teachers to use the *Journeys* curriculum through workshops and working with the students in their schools and communities.

**Detailed Project Description**

**Element #1: Teacher Training**

Teacher training has been found to be critical when introducing and implementing a new approach to classroom teaching. Participating teachers attend a two-day session at Teton Science School in the fall during which they are trained to use the materials. On completion of the training, teachers have a copy of the curriculum and a teaching enhancement kit and are qualified to have a three-day teaching visit from TSS staff during the school year. After the first year, teachers are able to use *Journeys* independently in following years.

**Element #2: Teacher’s Curriculum**
The 133-page teacher’s curriculum is appropriate for grades K–8. The curriculum is organized from four perspectives: the school yard, the community, the natural world, and the human world. Through experiential learning activities in science, social studies, geography, language arts, math and art, students explore a variety of concepts relating to the local environment. While students are gaining scientific knowledge, they are also learning how the natural and human communities are interrelated and interdependent. Life skills, including journal keeping and using the tools of a naturalist, are identified and used in the curriculum. The use of these skills is woven throughout the curriculum which promotes mastery while giving students the ability to accomplish the tasks using consistent and familiar processes. As students become more competent and more sophisticated in the application of these skills, they are able to identify situations in which the skills are useful.

The curriculum is designed to allow the teacher flexibility in selecting the amount of time to be spent on the activities, and the curriculum is appropriate for customizing to fit each teacher's needs.

Materials needed are either supplied as part of the teaching kit or are low cost and considered to be normally found in a classroom setting. Lessons are written in an integrated manner with suggestions as to how the teacher could cross the curriculum. Science (ecology, natural history, geology, etc.), history, writing, math, art, and reading skills are used to reach objectives and make this curriculum meaningful to students and teachers. Teachers may receive the curriculum only after they have successfully completed teacher training sessions.

Element #3: Teaching Enhancement Kit
These kits are supplied to each teacher and contain items necessary for the successful implementation of lessons and activities but perhaps not normally found in the regular classroom. Most of the items are in classroom sets (25 of each item) of materials which students use directly. An occasional item may be supplied for teacher demonstration use only. Teachers may receive this kit only after they have successfully completed teacher training sessions.

Element #4: Site Teaching Visits
TSS faculty and resident instructors make a three-day teaching visit to participating classrooms during the winter or spring of the school year. The purpose of the visit is two-fold:
1. To do model teaching of part of one module in the classroom. TSS faculty and instructors teach two half-day sessions and then facilitate an all-day community/field component.
2. To work further with the teacher on site as they prepare to implement the curriculum.

Element #5: Teacher Support
Support is made available to current and past teachers by TSS faculty during the year through e-mail, four newsletters per year, and teacher workshops. TSS support continues for those teachers who want to stay connected with TSS through e-mail, newsletters, and teacher workshops.
Element #6: Spring *Journeys* Training
During this two-day training, held at TSS, teachers share experiences and information on how they used *Journeys* in their classrooms, evaluate the program to provide ideas for changes, and work on new ideas for using *Journeys* in the future.

Element #7: Project Evaluation
Participating teachers and TSS faculty continue to evaluate the project as they teach during the year. An evaluation form is completed by all participating teachers with information regarding the effectiveness of the curriculum, the site visit, and teacher support. TSS faculty use the teachers’ written and verbal suggestions to make changes in the curriculum and teaching for the following year.

Element #8: TSS Graduate Resident Teacher Training
The TSS Professional Residency in Environmental Education and Natural Science (PREE) is a year-long training program for eighteen graduate residents. This training consists of graduate-level academic courses, teacher training, and field and classroom teaching assignments. After receiving training on classroom teaching methods and specific training on how to teach *Journeys*, the resident instructors, with support and assistance of Outreach faculty, teach the *Journeys* programs in the public school classrooms.

2000–2001 Work Plan and Timetable
- Fall, 2000: New participating teachers attend a two-day *Journeys* training workshop at TSS where they receive the curriculum and teaching enhancement kit and are trained in how to use the materials.
- Fall, winter, spring, 2000: TSS Outreach faculty and instructors make site visits to all participating classrooms and teach the three-day introduction to *Journeys* with help from the classroom teachers. Teachers continue to use the program at their discretion. At the end of the school year, classroom teachers submit their evaluations of the program. Special teacher training workshops are held on request.
- Winter, 2001: An advanced *Journeys* retreat is held for current and past teachers who have participated in the program. A fee is charged for this retreat.
- Late spring, 2000: All new *Journeys* teachers are required to attend the spring training to share experiences and ideas with other teachers and to refine their curriculum for the following year.

Demographics and Geographic Area Affected by the Project
Fourteen–eighteen regional public school classes (350–450 students) in grades K–6 in Utah, Wyoming, and Montana will participate in the 2000-2001 *Journeys* program. In addition, approximately 300 of the 445 teachers trained since 1996 will continue to use *Journeys*. Support continues for those teachers who want to stay connected with TSS through e-mail, newsletters, and teacher workshops.
Appendix B: *Journeys* Training Agenda
SATURDAY, SEPTEMBER 18

7:30 a.m. Breakfast/Clean-up

9:00 Introductions: Meet in Main Lodge Room
- TSS (History & Logistics)
- Teachers, TSS graduate students, TSS Faculty

9:30 Presentation: “The History of TSS Sense-of-Place Education”

9:45 Presentation: “What is sense of place education?”
- Overhead
- Magical Moments

10:15 Solo/Reflective Time” “Sense of place Survey”
- Re-convene in 30 minutes

10:45 Discussion
- Go over survey

11:15 Discussion: Extending the classroom outdoors
- Why don’t we go outside more often? Drawbacks?
- Why we should take students out?

11:40 Presentation: Making it easier to get outside!”
- Field Trip Pack construction

12:00 p.m. Lunch

1:00 Brent’s Story

1:15 Activity: “You need stuff!”
- Introduction to Teaching Enhancement Kits
- Teachers move kits to cars

2:15 Activity: “Sauntering As a Way of Seeing”
- Go sauntering as a group
- Focus on slow, observant walking

2:30 Activity: Journal Prompt #1
“Reflect on and write about something that you do right now that connects you to the place that you live.”
- Give prompt
- Share Responses
3:15  Presentation: “Journeys Curriculum Overview”
Define JOURNEYS
   - A year-long series of excursions to one’s home place with a focus on”
   *Go over unit structure
   …and and attempt to cultivate particular skills:
   * List and discuss Journeys Life Skills
   - Hand out curriculums
   - Go through and point out components

4:15  Break

4:30  Presentations: Journeys – some examples
   - Examples of Journeys (history experiences, community service, structures, weather, etc.)
   - Montana Kids video
   - Green River & Sacajawea Weather Journeys
   - Big Sky Journeys

5:30  Free Time

6:00  Dinner

7:15  Introduction: Ceremony & Reading
   - Put the Earth to sleep
   “I’m In Charge of Celebrations”

Program: A Journeys CELEBRATION
   - Celebrating as part of the place connection
   - Music as a part of celebration and communication
   - An evening with Beth McIntosh (musician)

8:45  Session ends
SUNDAY, SEPTEMBER 19

7:30 a.m.    Breakfast

8:30    Solo Time: *Journeys* Introduction: Meet in Main Lodge Room
           -Challenge teacher to get out by themselves and read/reflect on the introduction.
           -Take notes for later discussion

9:15    Discussion of Introduction

9:45    Presentation: “More” *Journeys*
           The role of TSS
           *PREE visits
           *Newsletter
           *E-mail/phone calls/ etc.
           The role of the teacher
           *Scheduling /Finalizing visits
           *TSS expectations

10:30   Presentation: Sense of place Life Skills
           -What are they again?
           How do they fit into my already busy teaching schedule?
           The heart and soul of *Journeys*!

10:45   Activity: Integrating *Journeys* With YOUR Classroom
           Journal Prompt #2: “How will you integrate Journeys with you current curriculum?”
           Discussion

11:00   Teacher Work Period: The Teacher’s *Journeys* Plan
           -Starting to formulate a plan
           -Creating a time line

12:00 p.m.    Lunch

1:00    Closings
           -The TSS commitment to teacher
           -The importance of the *Journeys* Teachers connection
           -How can TSS help?

1:30    Cabin clean-up

2:00    Workshop Ends
Appendix C: Potential Evaluation Questions Gathered from Stakeholder Interview
Characteristics of schools/classrooms using *Journeys*

1. How many teachers have been trained?
2. How many classrooms have had *Journeys*?
3. What is the geographic distribution of *Journeys* participants?
4. Is *Journeys* successful all along the urban rural continuum?
5. What is the institutional culture of the schools where *Journeys* is successful and not successful?
6. What is the teacher's perception of how much the school encourages innovation?
7. What are the characteristics of the classroom? Is it multi-age? Do they use team teaching?
8. How much financial support does the school have to develop innovative programs like *Journeys*?
9. What is the age range of students involved with *Journeys*?
10. What is the average class size?
11. How important is the availability of wild natural places? Does it depend on the presence of natural places for its success?

Characteristics of the *Journeys* process and feedback on the strengths and weaknesses of the process

12. Do teachers use and continue to use *Journeys* in their classroom after their initial training?
13. Do teachers plan to continue to use *Journeys*?
14. How well does our training prepare teacher to implement *Journeys*?
15. What other components are teachers looking for from *Journeys*?
16. Do you need a set of activities (i.e. the curriculum guide), or would it be just as valuable to train them using other activity sources like PLT, Project Wild, and train them to integrate activities?
18. What components of *Journeys* work the best?
19. How does the institutional culture of a school impact the success of *Journeys*?
20. How much of the curriculum do the majority of teachers' use?
21. How long does it take teachers to understand and implement *Journeys* effectively?
22. How important is mentoring to the success of *Journeys*?
23. How important is TSS support to the success of *Journeys*?
24. How easily is *Journeys* adapted to align with standards?
25. How does *Journeys* meet standards?
26. How easily is *Journeys* integrated into current curriculum?
27. How many academic subjects do teachers' integrate *Journeys* with? Are some subjects easier than others?
28. Are parents more involved in classrooms using *Journeys*?
29. Is there administrative interest in a teacher's use of *Journeys*?
30. How many complaints have you had?
31. Are there parents that consider Journeys a waste of time?
32. Are there administrators that consider Journeys a waste of time or a supplemental activity?
33. Does Journeys weaken any part of a curriculum?
34. What could be done to improve Journeys?
35. What are the barriers teachers face in implementing Journeys? Are they able to overcome these barriers?
36. How do the teachers' perceptions of the goals and TSS's perception of the goals differ? Why do they differ?
37. How do teachers justify the use of Journeys to parents, and administrators?
38. How do teachers assess student work related to Journeys?

Characteristics of the outcomes of Journeys

39. Does Journeys help teachers and students learn about their place?
40. Does Journeys help teachers and students understand their place?
41. Does Journeys help teachers and students connect to their place?
42. Does Journeys help teachers and students connect to the environment?
43. Does Journeys have a multiplier effect? Are teachers telling other teachers to get involved?
44. Are we successful at achieving the goals of Journeys (as stated to funders)?
45. Does Journeys address any other social issue?
46. Are there problems with other teachers after students have had Journeys teacher?

Characteristics of teachers using Journeys

47. What got them interested in Journeys?
48. What is the experience level of teachers involved with Journeys?
49. Have you ever been involved with a program that has had this sort of an effect on you? If so what?

Impact on teachers' personal lives

50. Has Journeys affected your personal life? If so how?
51. Are they doing Journeys types of things with their family?

Effect of Journeys on teachers' teaching behavior

52. Has Journeys had an impact on your teaching? If so how?
53. Does Journeys help teachers teach across discipline better?
54. Does Journeys help teachers interact with parents more?
55. Have teacher evolved Journeys in their classroom?
56. Does it increase or decrease their preparation time?
57. Do you communicate more to other professionals about Journeys?
58. Do teachers believe their effectiveness as teachers has increased since implementing *Journeys*?

59. Get them to rank what are the most challenging barriers to implementing barriers.

60. Do teachers go outside more with students?

61. Do teachers use project-based learning?

62. How willing are teachers to explore teachable moments?

63. Has it increased student centered learning?

64. Are teachers more comfortable leaving the curriculum, or the norm?

65. Has *Journeys* helped teachers expand teaching resources? Has it opened the classroom? Does *Journeys* spark an interest to look for outside influences?

66. Are teachers using a thematic approach?

**Effect of Journeys on teachers' attitude toward teaching**

67. Are teachers rejuvenated by *Journeys*?

68. Has *Journeys* made a difference in their energy level? Commitment level?

69. Has *Journeys* changed teachers, vision of teaching?

70. Has it increased teacher motivation?

71. Do teachers feel they have become more creative teachers?

72. Do teachers feel they have become more reflective teachers?

73. Has *Journeys* renewed your enthusiasm for teaching?

**Teachers' perceived impact on their students**

74. Does *Journeys* help prepare students for standardized testing?

75. Are students that are typically not engaged with traditional classroom activities more engaged in the *Journeys* approach?

76. How does *Journeys* affect students that are doing well with the more traditional classroom?

77. Do student attitudes toward specific subjects change? Math? Science? Language arts?

78. How has *Journeys* impacts student citizenship?

79. Do students have more enthusiasm for learning?

80. Do they understand science better?

81. Are they better writers?

82. Are there any improvements in student behavior since starting *Journeys*?

83. What effects is *Journeys* having on students with special needs?

84. Are students are more comfortable with their community?

85. Are students more familiar with their community?

86. Is there a change in student self-esteem?

87. Are students asking to go outside? Are they self-motivated to learn?

88. Are students more observant?
Other Questions

89. Does *Journeys* have a greater impact on teachers than other EE inservice training like Project Wet, Project Wild, and Project Learning Tree? If so why?
Appendix D: Prenotice E-Mail
Dear Educator:

A few days from now you will receive in the mail a request to fill out a brief questionnaire as part of an important research project being conducted by Utah State University. The research concerns the experiences of educators who have been trained by the Teton Science School to use the *Journeys* sense of place education program.

The study is an important one that will help Teton Science School, and other similar education institutions, understand the impact of sense of place education programs like *Journeys*. The results of this research will be used to improve the ability of Teton Science School and other similar institutions to serve educators like you. Your participation in the survey is very important and we value your feedback.

Thank you in advance for taking the time to share your thoughts about *Journeys*. It is only with the generous help of people like you that this research can be successful.

Sincerely,

Mike Kuhns  
*Journeys* Research Project Supervisor  
Department of Forest Resources  
Utah State University
Appendix E: Mail Survey and Cover Letter
I am writing to ask your help in a study of educators who have participated in Teton Science School's Journeys sense-of-place education program. This study is part of an effort to learn how Journeys and sense-of-place education has affected those involved.

We are contacting all educators who have participated in Journeys to ask them to complete the enclosed questionnaire. In addition to the questionnaire, a small number of teachers and administrators will be interviewed over the telephone to provide detailed information about Journeys. If you are among those randomly chosen for the follow-up interview, you can expect to be contacted by telephone sometime in the month of November or early December.

Results of this questionnaire and the subsequent telephone interviews will be used to help other teachers, and administrators understand the impacts of Journeys and sense-of-place education efforts in our schools. Your responses will help improve programs like Journeys not only at Teton Science School, but at other educational institutions across the nation.

Your answers are completely confidential. An identification number has been placed on the questionnaire for recording purposes only and individual names will not be associated with completed surveys. This survey is voluntary. However, your opinions and answers are very important to us. For the results to be representative of all those who have participated in Journeys, it is essential that each questionnaire be returned to us even if you feel the questions may not apply to you. If you think you have been contacted by mistake, please answer the first question on the questionnaire and return the rest of it blank.

The questionnaire will take approximately 15 minutes to complete and can be returned in the postage paid envelope provided. If you have any questions or comments about this study, I would be happy to speak with you. My telephone number is (435) 797-4056, or you can write me at the address on the letterhead.

Thank you very much for helping with this important study.

Sincerely,

Dr. Mike Kuhns
Journeys Research Project Supervisor
Department of Forest Resources
Utah State University
Journeys Sense-of-Place Education Survey

This survey asks questions about Teton Science School's (TSS) Journeys sense-of-place education program. Please answer all the questions in the order that they appear without reading ahead. If you need more space to explain your answers, use any available space in or at the end of the questionnaire. If you have no opinion for a question, just write DA (DOESN'T APPLY) in the margin and go on to the next question. Please mark boxes with an X.

Have you been exposed to or trained to use Journeys sense-of-place education ideas or activities? 

Yes  ☑  No  ☐

If Yes, please continue with this survey. If No, YOU'RE DONE! PLEASE MAIL YOUR SURVEY BACK TO US ANYWAY. IT IS IMPORTANT THAT WE VERIFY RECORDS. THANK YOU.

Part I.

The following questions will tell us about your involvement with Journeys.

1. What type of Journeys training sessions (including workshops, meetings, or retreats) have you been involved with? Place an X in the box next to the training sessions you have attended, and place an X in the box that indicates the year(s) in which you attended these sessions in the space provided. Check all that apply.

☐ Attended a fall training session(s) at Teton Science School.

☐ Attended a winter training session(s) at Teton Science School.

☐ Attended a spring training session(s) at Teton Science School.

☐ Attended a summer training session at Teton Science School.

☐ Attended a training session with other teachers from my school, at a place other than Teton Science School.

☐ Other: Please explain, and indicate year:

2. Since your first Journeys training session have you ever been a classroom teacher, or in an educational role where you have had regular contact with students in teaching situations? (This may include Librarians, ESL teachers, Title I teachers, etc.). Check one.

☐ Yes

☐ No  ⇒ If No, YOU'RE DONE! PLEASE MAIL YOUR SURVEY BACK TO US ANYWAY. IT IS IMPORTANT THAT WE VERIFY RECORDS. THANK YOU.

3. Have you used any of the Journeys sense-of-place education ideas, or activities with your students? Check one.

☐ Yes  ⇒ If Yes, during which school year(s) did you use Journeys?
☐ No  ⇒ If No, skip to question 7, on page 3.

4. During the school year(s) you have used Journeys, how often have you used any of the Journeys sense-of-place education ideas or activities with students? Check one.

☐ Very rarely (less than once a month)
☐ Once or twice a month
☐ Once a week
☐ Two or three times a week

☐ Daily

☐ Other: Please explain:

G O O N T O T H E N E X T P A G E ⇒
Part II
Effects of *Journeys* on your teaching and your students

5. Listed below are several components of the *Journeys* program support offered by Teton Science School. *Consider how you have used Journeys,* and rate how important of each of the support components has been in helping you implement *Journeys.* If you have not received the support component mentioned, circle DA for doesn’t apply. *Please circle your answers for each item.*

| The *Journeys* curriculum/activity guide. | Very Important • • • • Moderate Importance • • • • Of little Importance • • • • Unimportant • • • • Doesn’t Apply DA |
|------------------------------------------|-------------------------------------------------|---------------------------------|---------------------------------|----------------|-----------------
| 1 2 3 4 5                                |                                                 |                                 |                                 |                |                |
| Attending additional *Journeys* workshops at TSS. |                                                 |                                 |                                 |                |                |
| 1 2 3 4 5                                |                                                 |                                 |                                 |                |                |
| The initial *Journeys* training.         |                                                 |                                 |                                 |                |                |
| 1 2 3 4 5                                |                                                 |                                 |                                 |                |                |

6. The following statements describe several impacts *Journeys* may or may not have had on your teaching and/or students. *Consider how you have used Journeys,* and indicate your level of agreement with each statement. If a statement does not apply to you, circle DA for doesn’t apply. *Please circle your answers for each item.*

<table>
<thead>
<tr>
<th>My use of <em>Journeys</em> activities or ideas has...</th>
<th>Very Strongly Agree • • • • Strongly Agree • • • • Neither Agree nor Disagree • • • • Strongly Disagree • • • • Very Strongly Disagree • • • • Doesn’t Apply DA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
</tr>
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</table>

GO ON TO THE NEXT PAGE ⇒
Part III
Barriers to the use of *Journeys*

7. The following is a list of potential barriers that may or may not have made it difficult to use *Journeys*, or prevented you from using *Journeys* at all. For each of the potential barriers, indicate the extent to which that barrier has inhibited your ability to use *Journeys*. **Please circle your answer for each item.**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Not a barrier</th>
<th>Minor barrier</th>
<th>Moderate barrier</th>
<th>Significant barrier</th>
<th>Major barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Lack of time to prepare <em>Journeys</em> activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>D. Lack of funding.</td>
<td></td>
<td></td>
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<td>F. Class size too large.</td>
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<td>H. Liability concerns.</td>
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<tr>
<td>J. Lack principal/administrative support.</td>
<td></td>
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<tr>
<td>L. Lack of parental support.</td>
<td></td>
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<tr>
<td>N. <em>Journeys</em> does not work very well.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>P. Lack of integration with <em>Journeys</em></td>
<td></td>
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</tr>
</tbody>
</table>

8. Please briefly describe any other barriers to using *Journeys* that you have encountered.

9. Go back to questions 7 and/or 8 and circle the 3 *most* significant barriers to your ability to use *Journeys*.

GO ON TO THE NEXT PAGE ⇒
Part IV

Finally, we would like to learn a little about you. As with all the other responses, your answers to these questions will remain strictly confidential.

10. What best describes your educational role since your first Journeys training? Check one.
   - [ ] I have been, and continue to be a classroom teacher, librarian, or educational specialist that has regular contact with students in teaching situations.
   - [ ] I was a classroom teacher, but am now in an administrative role (principal, asst. principal, etc.).
   - [ ] I was a classroom teacher, but have recently retired.
   - [ ] Other: Please explain:

11. How many other teachers in your school have been trained to use Journeys? ___________________________ TEACHERS

12. How many years have you been teaching? ___________________________ YEARS

13. What grade level(s) do you teach? ___________________________ LEVEL(S)

14. Approximately how many students have you used Journeys with since your initial training? ___________________________ STUDENTS

15. What Subject(s) do you specialize in? Check all that apply.
   - [ ] General Elementary
   - [ ] Math
   - [ ] Science
   - [ ] Social Studies
   - [ ] Language Arts
   - [ ] Physical Education
   - [ ] Special Education
   - [ ] Other; please explain:

16. Check the boxes of all the supplemental curricula you use or have used. If a specific curricula is not listed, please identify it in the space provided below. Check all that apply.
   - [ ] Project Wild
   - [ ] Project Wet
   - [ ] Project Learning Tree
   - [ ] Aquatic Wild
   - [ ] Keepers of the Earth
   - [ ] Nature Scope
   - [ ] Others: ___________________________

17. What best describes the community in which you currently teach? Check one.
   - [ ] A city, or suburb of a city with more than 100,000 people
   - [ ] A city with 25,000 to 100,000 people
   - [ ] A city with 5,000 to 25,000 people
   - [ ] A small town with 2,500 to 5,000 people
   - [ ] A small town with less than 2,500 people
   - [ ] A rural area outside a town or city.
   - [ ] Other (please explain):

18. How often do you take your students outside into the schoolyard or surrounding community for educational purposes? Check one.
   - [ ] More than once a week
   - [ ] Once a week
   - [ ] Once or twice a month
   - [ ] Once or twice a term
   - [ ] Once or twice a year
   - [ ] Never

GO ON TO THE NEXT PAGE ⇒
19. Please list the college degree(s) and/or endorsements you hold?

<table>
<thead>
<tr>
<th>Degree</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

20. Do you plan to use Journeys in the future? Check one.

☐ Definitely
☐ Probably
☐ Probably not
☐ Definitely not

21. Have you recommended Journeys to someone? Check one.

☐ Yes
☐ No

22. What three things about Journeys should never be changed?

23. What three things about Journeys should be changed?

24. Do you have any final comments about your involvement with Journeys?

Thank you for your participation!
Please mail your response in the envelope provided.
Appendix F: Reminder Postcard
Dear Journeys Participant,

About two weeks ago, we sent you a questionnaire asking for your opinions about Teton Science School’s Journeys sense-of-place education program.

I would like to personally thank you if you have already completed and returned the questionnaire. If not, I’d like to ask you to please do so today. Your responses are extremely important to us. Even if you feel you have been contacted by mistake, please answer the first question on the survey, and return the rest of it blank.

If you did not receive the questionnaire or it was misplaced, you can call me at (435) 797-7516, or e-mail me at jrnyproj@cc.usu.edu and I will mail you another one immediately. Thank you for your assistance.

Sincerely,

Dr. Mike Kuhns
Journeys Research Project Supervisor

Utah State University
Journeys Project
Department of Forest Resources
Utah State University
Logan, UT 84322-5215
Appendix G: Cover Letter for Second Mailing of Survey
About one month ago I sent you a questionnaire that asked about your experiences with Teton Science School's *Journeys* sense-of-place education program. The purpose of the questionnaire is to study the impacts of *Journeys* and sense-of-place education efforts in our schools. To the best of our knowledge, the questionnaire we sent you has not been returned.

The comments of teachers who have already responded include very important information from both those who have used *Journeys* after their training, and those who have not. I think the results are going to be very useful to other educators and educational institutions across the country.

I am writing again because of the importance that your questionnaire has for helping us to get accurate results. For our results to be representative of all teachers who have participated in a *Journeys* training, it is essential that each survey be returned regardless of whether you have used *Journeys* or not. In the event that your questionnaire has been misplaced, a replacement is enclosed.

As mentioned in my last letter, your responses and comments will be confidential. An identification number is printed on the questionnaire so that we can check your name off of the mailing list when it is returned, and individual names are not connected to the results in any way. Protecting the confidentiality of people's answers is very important to me, as well as the University.

A few people have written to say that they should not have received the questionnaire because they have never been trained to use *Journeys*. If this concern applies to you, please let us know by returning the questionnaire with only the first question answered, or by e-mailing me a message at jrnypoj@cc.usu.edu.

The questionnaire is voluntary. However, your opinions and answers are very important to us, and we hope to receive your response soon. If you have any questions or comments about this study, I would be happy to speak with you. My telephone number is (435) 797-7516, or you can write me at the address on the letterhead or e-mail jrnypoj@cc.usu.edu. Your cooperation is greatly appreciated.

Sincerely,

Dr. Mike Kuhns  
*Journeys* Research Project Supervisor  
Department of Forest Resources  
Utah State University
Appendix H: Complete Statistical Analysis of Logistic Regression Model
Total number of cases: 110 (Unweighted)
Number of selected cases: 110
Number of unselected cases: 0

Number of selected cases: 110
Number rejected because of missing data: 10
Number of cases included in the analysis: 100

Dependent Variable Encoding:

<table>
<thead>
<tr>
<th>Original Value</th>
<th>Internal Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00</td>
<td>0</td>
</tr>
<tr>
<td>1.00</td>
<td>1</td>
</tr>
</tbody>
</table>

Dependent Variable: HOWOFT How often used dummy

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 138.46939

* Constant is included in the model.

Beginning Block Number 1. Method: Enter

Variable(s) Entered on Step Number
1. SITEVIS Did they recieve a site visit
   MATERL Did they recieve materials
   WORSHO Did they attend additional workshops

Estimation terminated at iteration number 3 because Log Likelihood decreased by less than .01 percent.

Iteration History:

<table>
<thead>
<tr>
<th>Iteration</th>
<th>Log Likelihood</th>
<th>Constant</th>
<th>SITEVIS</th>
<th>MATERL</th>
<th>WORSHO</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-.06991563</td>
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</tbody>
</table>

-2 Log Likelihood 129.761
Goodness of Fit 100.678
Cox & Snell - R^2 .083
Nagelkerke - R^2 .111

Chi-Square df Significance

<table>
<thead>
<tr>
<th></th>
<th>Chi-Square</th>
<th>df</th>
<th>Significance</th>
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<tbody>
<tr>
<td>Model</td>
<td>8.708</td>
<td>3</td>
<td>.0334</td>
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<tr>
<td>Block</td>
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</table>
### Classification Table for HOWOFT

The Cut Value is .50

<table>
<thead>
<tr>
<th>Predicted</th>
<th>&lt;1 per week</th>
<th>&gt; 1 per week</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don't get it</td>
<td>D</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Get it</td>
<td>G</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
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</table>

### Variable in the Equation

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>R</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITEMIS</td>
<td>.1212</td>
<td>.5805</td>
<td>.0436</td>
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<td>.8346</td>
<td>.0000</td>
<td>1.1289</td>
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<tr>
<td>MATERL</td>
<td>-.9662</td>
<td>.5834</td>
<td>2.7428</td>
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<td>.0977</td>
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<tr>
<td>WORSHO</td>
<td>1.2898</td>
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<td>.0119</td>
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### Correlation Matrix:

<table>
<thead>
<tr>
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<tbody>
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<tr>
<td>WORSHO</td>
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<td>1.00000</td>
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</table>