CURRICULAR CONNECTIONS BETWEEN OUTDOOR ENVIRONMENTAL EDUCATION AND CLASSROOMS:

A CAMP COLMAN CASE STUDY

by

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Abstract

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The goal of my research was to determine how GEE Camp Colman (a 2-night, 3-day outdoor environmental education program in western Washington serving groups of 4th through 6th grade students), can enhance curricular connections between its program and classrooms. My case study included a review of the literature, in-person interviews with Camp Colman's OEE director and the OEE directors of other well-regarded programs in the region, phone interviews with teachers who brought their students to Camp Colman in fall 2008, verbally administered surveys of participating teachers and Camp Colman's OEE director, and a review of relevant websites and documents. Via my research, I was able to identify how OEE Camp Colman currently connects its program with classroom curricula; why OEE Camp Colman is interested in expanding and deepening curricular linkages in the future; the impacts and best practices ofOEE-classroom curricular connections according to the literature; and the realities, challenges, and goals of participating teachers and GEE directors with regard to curricular integration. With this information, I created and elaborated on ten best practices OEE Camp Colman can employ that (a) advance the goals of both participating teachers and Camp Colman's OEE Director, (b) address and mollify the concerns of participating teachers and Camp Colman's OEE Director, and (c) incorporate the findings of previously published studies and the successful best practices of other OEE organizations in western Washington. Briefly, these best practices include: (1) post more extensive pre-trip and post-trip classroom curricula suggestions on the Camp Colman website, (2) post a list of relevant books and websites on the Camp Colman website, (3) post a list of relevant vocabulary (with definitions) and species (of plants and animals) on the Camp Colman website, (4) develop a field journal for students, (5) send OEE instructors to visit schools pre-trip or post-trip, (6) work with teachers and students to develop stewardship projects, (7) present at schools' parent nights; meet with teacher the same day, (8) develop teacher in-service workshops, (9) modify the timing and content of post-trip evaluations, and (10) assess curricular connections. Clearly, Camp Colman positively impacts students; Camp Colman can heighten its impact by forging stronger curricular connections between its own program and participating classrooms.

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INTRODUCTION

In the 1920s, Outdoor Education (OE) emerged as a place-based, experiential program fostering the connection of students with their natural environment. Since then, various manifestations ofOE have evolved, adapting to the values and goals of unique communities. One such offshoot, Outdoor Environmental Education (OEE), was formalized as a form of education in 1970, seeking not only to enhance students' creative exploration and love of the natural environment via immersion in nature, but to teach basic environmental concepts as well (MacGregor, 2003 and 2009). Numerous studies have linked student participation in OEE programs to tangible benefits for students, classrooms, and the environment. These benefits range from enhanced social, behavioral, and personal skills, to increased environmental stewardship, to sharpened knowledge and understanding of science concepts, to heightened scores in reading, math, language, and spelling (American Institutes for Research, 2005; Bartosh, 2003; Wheeler *et 01.,2007).*

However, researchers are not only interested in elucidating the benefits of OEE programs on student achievement, classroom communities, and the natural environment, they are also interested in identifying specific program features and teaching practices that enhance these impacts. Examples of program features that strengthen student achievement include an emphasis on hands-on project-based learning, a focus on *local* environmental concerns, the inclusion of *both* independent and cooperative learning experiences, and the extension of the OEE experience via integration with classroom curricula (Norman *et 01.,2006).* My thesis will focus on the latter: curricular connections between residential outdoor environmental education programs and classrooms.

Throughout the past decade, several controlled, peer-reviewed studies have addressed the effects of linking off-campus field experiences with classroom curricula (Smith-Sebasto and Caver'1, 2006; Gutierrez de White and Jacobson, 1994; Farmer and Wott, 1995; Stern *et 01.,2008).* Each found a statistically significant increase in student achievement as a result of such integration. Unfortunately, though controlled studies have documented the benefits of OEE-classroom curricular linkages, these studies do not provide specifics about the range of existing integrative endeavors. Further, none of these studies explored the challenges and

barriers to such integration or identified the ways in which these barriers can be overcome. Both a lay-of-the-land exploration of current integrative practices and an assessment of real-life barriers to such integ,'aLon remain critical literature gaps

Without a thorough understanding of current practices, challenges, failures, successes, and goals regarding the integration ofOEE and classroom curricula from the perspectives of participating teachers and OEE directors, we cannot effectively oetermine how to expand and deepen the link between OEE and the classroom. To that end, my study will explore current OEE-classroom integrative practices, successes, failures, challenges, and goals.

More specifIcally, I will explore curricular integration between the OEE experience and the classroom via a case study approach. [n Washington State, many students attend a residential OEE program with their classmates sometime between 4th and 8th grades. Teachers have their choice of dozens of such programs in Western Washington alone. I will be investigating one such program - OEE Camp Colman. Armed with a new director dedicated to enhancing the OEE experience and open to constructive suggestions, Camp Colman is an ideal case study subject. My ob,ective is to determine how OEE Camp Colman can best facilitate curricular integration between its own program and the classroom to further its OEE goals as well as the goals of participating teachers. In order to accomplish my objective, ! shall address the following research questions:

[1) Why is OEE Camp Colman interested in expanding and deepening curricular linkages in the future?

(2) How does OEE Camp Colman currently integrate its program with classroom curricula?

(3) What are the best practices and what are the challenges regarding the integration of field and classroom experiences according to the literature?

(4) What can OEE Camp Colman learn about curricular integration approaches from other OEE programs in Western Washington? What are the challenges and barriers to this integration from the perspective ofOEE directors and teachers who currentiy bring their classes to Camp Colman?

(5) How do teachers who bring their classes to Camp Colman currently integrate classroom curriCUla and the OEE experience? To what extent and in which ways are they interested in expanding and deepening curricular linkages in the future?

LITERATURE REVIEW

History of Environmental Education and OEE in the United States and Washington State

My research focuses on Camp Colman's outdoor environmental education program. "Outdoor environmental education" (OEE) is a relatively recent offshoot of "environmental education" (EE), an umbrella term for a variety of fields including "nature study," "conservation education," "outdoor education," "experiential education," and of course "outdoor environmental education" (Wheeler *et 01.,2007;* MacGregor, 2003, 2009). Each of these fields originated from a unique cultural, educational, and political reality, and each influenced the development of those that followed. Below I will discuss each of these fields and ultimately describe how OEE incorporates aspects of all of them.

Founded in the 1890s by Liberty Hyde Bailey, a horticulture professor at Cornell University, "nature education" sought to rekindle students' interest in nature in an era in which the US populace was beginning urbanize, faith in rural America was beginning to diminish, and the upper middle and upper classes of Europe (including Charles Darwin) and America were beginning to pursue natural history. The field aimed to teach students the skills of a naturalist including careful observation of the natural world, identification and collection of plants and animals, and knowledge of the life histories of these creatures. Because few teachers had the background to teach nature education, it was added to the K-8 curriculum as a new subject only in the classrooms of those teachers personally interested and invested in the subject. In most classrooms at that time, teachers taught only reading, writing, and arithmetic. In order to encourage teachers to teach nature education, Bailey and his colleagues at Cornell published Rural School Leaflets with basic information about plants, animals, geology, meteorology, etc. and distributed them to teachers. At this time, natural history museums became increasingly common as well. In the 1950s, nature education expanded via nature centers and interpretive

centers. The field continues to reign strong today. A limitation of nature education commonly cited by environmental educators is that while it imparts knowledge about the environment, it does not specifically encourage students to make positive change with respect to responsible environmental behaviors or environmental problem-solving (MacGregor, 2003 and 2009).

As outdoor education continued to develop, "conservation education" emerged in the first decades of the 1900s as agency managers (i.e. of the US Forest Service and the National Park Service) sought to promote natural resource protection and management. Conservation educators taught students about America's forest, soil, watershed, and wildlife resources and promoted the judicious use of these resources. Typically agency professionals visited classrooms to provide lectures and educational pamphlets on resource management strategies; they taught students that agency professionals practice wise resource management. Often the agenda was an attempt to increase public understanding of and support for various conservation agency efforts at both state and federal levels. Both historically and today, *conservation* education remains a marginal extra in the typical school science curriculum. A drawback of conservation education commonly cited by environmental educators is that it is often limited to a one-time lesson or speaker and is therefore generally poorly integrated into the rest of the school curriculum. That said, more recently, some conservation education projects *have* focused on and succeeded in integrating lessons and topics into existing school curricula, most especially through the efforts of the Project Learning Tree and Project WILD curricula, and associated teacher training programs (MacGregor, 2003 and 2009).

Also in the 1910s and 1920s, "outdoor education" (OE) materialized out of a subculture of educators involved in progressive education and *activity-based* curricula. Early progressive educators in the 1910s and 1920s such as John Dewey believed that school learning needed to better connect with real life. They believed that teaching the existing curriculum in out-of-classroom settings would better engage learners and lead to more fully developed children. Whereas nature education sprang from horticulturalists in higher education and conservation education emerged via agency managers, outdoor education was created by K-12

educators bent on improving teaching and learning in the classroom. Furthermore, whereas nature education and conservation education introduced new *content*, outdoor education introduced a new *pedagogy*. Because outdoor education is defined by its pedagogy rater than its content, its content is highly varied; it may incorporate content from nature education and conservation education, and it often includes olltdoor skills such as hiking, map-reading, canoeing, and camping. Ultimately, its goal is to teach out-of-doors, what can best be learned out-of-doors. Since the 1920s, outdoor education diverged in two directions. One community of outdoor educators focused on using the out-of-doors to teach classroom curriculum, and another group of outdoor educators developed the school camping *movement* in which school classes went away together to a rural camp setting for *severa]* days to explore the natural world, learn outdoor skills, and learn to *live* and work *cooperatively*. This strand of OE began in the 1940s; both strands of OE continue today. There are *several* tensions in outdoor education. First, it is typically considered an "extra" or "luxury" activity. Second, many educators perceive OE to be about learning outdoor skills; they don't recognize its potential as an *avenue* for service-based or community-based learning. Third, because OE *activities* span myriad topical emphases, it is difficult to assess OE student learning with traditional forms of assessment (MacGregor, 2003).

"Experiential education" is another highly diverse educational field that has *evolved* into many sub-fields, some with strong connections to environmental education. Most experiential educators identify the roots of their field in the path-breaking work of Kurt Hahn and the Outward Bound School *movement*. In the 1930s, the pioneering educator, Kurt Hahn, escaped Nazi Germany and soon thereafter founded the Gordonstoun School in Great Britain. In the early days of World War II, Hahn was asked to create a training program akin to Gordonstoun's programs to better prepare young seaman for the British Merchant Marines and the British *Navy*. Hahn's dpproach (through Outward Bound) was to create powerful experiential learning experiences for youth. He put youth in challenging situations in natural settings and forced them to work cooperatively to succeed, thus building endurance, confidence, teamwork, and an ethic of service to others. The Outward Bound concept soon spread from England to the US to dozens of other countries around the world. Today these experiential education schools and related programs

dOi1't *serve* just seamen or just youth. Many still do provide programs for teenagers and young adults, but there are also Outward Bound programs for adults, corporate groups, and troubled youth. Since these origins, experiential education has branched out to include experiences bearing many names including service learning, adventure education, wilderness education, and outdoor education among others. All these forms of experiential education aim to *give* participants wilderness skills, teamwork skills, self-esteem, personal discipline, and a sense of purpose and service to others, in order to *overcome* the cynicism and ego-centrism that is common in Western culture. In experiential learning programs, participants are usually asked to reflect on their experience and they often keep reflective journals. the objective being not only to *have* a powerful experience, but also to draw meaning from it. One challenge with experiential education is follow-up. After the experience, students need to be able to translate the *values* and skills gained to everyday life. Secondly, even though many graduates of experiential programs cite it as a *pivotal* learning experience, few conventional schools *have* the resources and staff required to adopt this approach (MacGregor, 2003).

All of these forerunners of environmental education (nature educatio'l, *conservation* education, outdoor education, and experiential education) *have* had an influence on environmental education, which is a field of its own. "Environmental education" was first coined at a 1948 meeting of the International Union for the Conservation of Nature and Natural Resources, though it was 'lot recognized on the international *level* until the 1960s (Sterling and Cooper,l992; Gough, 1997) Definitions of *environmental* education (EE) abound [Palmer, 1997; UNESCO, 1975) but perhaps the best recognized *derives* from the 1977 lntergovernme'1tal Conference on Environmental EducatIOn, organized by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in Tbilisi, Georgia (USSR). At this conference, environmental education was defined as

> "a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action" (UNESCO, 1977).

In this definition of environmental education, EE is an extensive process of skill, knowledge, and attitude development in order to affect responsible environmental decisions and actions. Environmental education differs from nature study in that it asks students to think critically about environmental issues, make decisions, and take constructive action. It differs from conservation education in that its scope expands significantly beyond natural resources development and management to focus on environmental problem solving or problem prevention. It differs from outdoor education in that it need not be conducted out-of-doors; and it differs from expenential education in that its focus is less on the individual overcoming physical challenges in the natural environment, and more on recognizing and working-both individually and collaboratively-to overcome environmental challenges in the local community, in the nation, and in the world.

This brings us to "outdoor environmental education" (OEE), the focus of my research. Outdoor environmental education is an offshoot of environmental education. As the name suggests it combines outdoor education and environmental education. More specifically, it marries EE and the schooJ-camping-movement-strand of OE Outdoor environmental education programs typically bring school groups to rural, outdoor settings for a day to *over* a week to engage in hands-on, environmental education in nature. Many of these programs incorporate elements of all of the roots of environmental education discussed *above*. Outdoor Environmental Education programs typically integrate components of nature education (including identifying plants and animals native to the OEE center), conservation education (including learning about natural resources management, 30metimes in partnership with an agency such as the U.S. Forest Service, the National Park *Service,* or the U.S. fish and Wildlife *Service),* outdoor education (including acquiring hiking, boating, or camping skills on a multi-day rural outing with classmates), experiential education (including engaging in challenges courses to develop teamwork and confidence), and environmental education (including *developing* the skills, knowledge, and attitudes necessary to make responsible environmental decisions and affect positive change). In addition to "outdoor environmental education," these programs may be termed "outdoor science schools," "field science schools," or "residential environmental education programs" (American Institutes for Research, 2005; Stern *et 01.,2008).*

In Washington State, some schools place high value on student participation in OEE; others take students on day trips to field learning sites. Still others prefer to keep student activities on school grounds or inside classrooms. The 2008 best selling book by Richard Louv, *Last Child in the Woods,* and the 2007 "No Child Left Inside" legislative initiatives, have increased participation in OEE nationwide in the last few years. Washington State reflects this trend (Louv, 2008; Washington State Legislature, 2007). Despite this recent upswing, OEE continues to cater to grades four to six with few (but growing) OEE opportunities for high school students. Some OEE centers allow high school students to participate as chaperones to middle school student groups (Environmental Education Association of Washington, 2008b; YMCA Camp Colman, 2009b).

Although Washington State schools are not required to participate in OEE programs, they are required to incorporate EE into school curriculum. This requirement stems from a series of laws passed by the Washington State Legislature between 1988 and 2007. In 1988, the Washington State Legislature passed its first law requiring environmental instruction in public schools. The law states that "All common schools shall *give* instruction in science with special reference to the environment. ... All teachers shall stress the worth of kindness to all living creatures and the land" (Washington State Legislature, 1988). In 1990, the State Legislature passed a second, more specific law stipulating that environmental topics be taught in various disciplines. This law states " instruction about *conservation,* natural resources, and the environment [must] be provided at all grade levels in an interdisciplinary manner through science, the social studies, humanities, and other appropriate areas with an emphasis on solving the problems of human adaption to the environment" (Washington State Legislature. 1990). In 2003, the state passed a third law implementing a grant program to "promote proven and innovative natural science, wildlife, and environmental education programs that are fully aligned with the state's essential academic learning requirements..." (Washington State Legislature, 2003). Three years later the legislature passed another law requiring the Office of the Superintendent of Public Instruction (OSPI) to conduct a study and develop a report on the impacts of environmental education on K-12 students (Washington State Legislature, 2006). The report was completed in 2007 and I will address it in more detail in the following section. Finally, in 2007, the legislature

passed the *No Child Left Inside* law requiring the Washington State Parks and Recreation Commission to establish and administer an outdoor education and recreation program for underserved students (Washington State Legislature, 2007).

But not only has legislation spurred the advancement of environmental education in Washington State, non-profit organizations have as well. The Environmental Education Association of Washington (EEAW) is Washington State's professional association for environmental educators and stakeholders. It is dedicated to increasing awareness of and support for "interdisciplinary, hands-on and place-based" environmental education (Environmental Education Association of Washington,2008a). In 2008, this organization completed goals and strategies for 10 sectors including the "Environmental, Nature, and Outdoor Centers" sector. [n this sector, EEAW envisions a network of centers that "are the focal points for multiple facilitated, direct experiences in nature that provide every person in Washington with an understanding and appreciation of diverse ecosystems across the state... Participants take this learning home and become engaged in their local communities" (Environmental Education Association of Washington, 2008a). In brief, their goals for the sector include the following: (1) sustain, expand, dnd improve the sector, (2) make nature centers and their programs valued and accessible to all residents of Washington State, and (3) increase citizen engageme'lt in local, statewide and global environmental issues (Environmental Education Association of Washington, 2008a).

Clearly, throughout the past 20 years, Washington State laws have increased the scope and depth of outdoor and environmental education requirements for K-12 students. Non-profit organizations such as EEAW have worked to spur this advancement as well. Although residential OEE programs are still not required, a significant portion of Washington State students (particularly in grades 4-6), partake in such an OEE experience with their class.

Effectiveness of EE and OEE Programs

In 2006, the Washington State Legislature passed Engrossed House Bill 2910 which directed the Office of the Superintendent of Public Instruction (OSP!) to

create a study report on the impacts of environmental education (EE) on K-12 students. Accordingly, the OSPI developed the *Environmental Education Report,* which summarizes academic research measuring the impact of EE on one or more of the following: academic achievement; career development; graduation requirements; selfesteem, engagement and motivation; and civic responsibility and service learning (Wheeler *et al.,* 2007). In all, 76 relevant studies were located; the findings of the most methodologically rigorous studies were weighted most heavily in the OSPl report. The report's findings suggest that EE is an effective means of achieving a number of desirable outcomes. [n the sections that follow, I will describe the methodologicaily robust studies that shed light on the impact of EE on academic achievement, career development, self-esteem and motivation, civic responsibility, and teamwork. [will also describe a couple of robust studies not mentioned within of the *Environmental Education Report* because they were completed after its publication. I have chosen not to include a section on the reiationship between EE pa,ticipation and students' completion of graduation requirements, as this cannot be determined due to limited evidence. Only one study explored this relationship; it found that participation in EE decreases high school dropout rates and increases university enrollment (Wheeler *et al., 2007)*

Academic Achievement

Regarding the impact of EE on academic achievement, 18 of 20 relevant studies indicate a correlation between participation in EE and improved academic achievement. There is robust evidence that EE enhances math and science achievement, some evidence that EE boosts social studies achievement, and mixed eviC1ence that it augments language arts achievement. Few of the studies control for factors such as age, socioeconomic status, gender, or level of academic achievement prior to participation in EE, and only four of the studies gathered enough data to examine statistical significance (Wheeler *et al.,* 2007). The most methodologically sound (due to its use ofa matched pairs design and large sample size) and statistically robust of these studies was conducted by an Evergreen MES student, Oksana Bartosh, in 2003. This study compared student achievement on two state standardized tests (Washington Assessment of Student Learning (WASL) and iowa

Test of Basic Skills (ITBS)) for two groups of students (EE and non-EE) between 1997 and 2002. The study included 77 pairs of schools (with and without EE programs) matched using US census and other economic, demographic, and geographic data. Bartosh found that the percentage of students meeting test standards in all areas including math, reading, writing, and listening, is significantly higher in schools with EE programs (Bartosh, 2003). A variation of this master's thesis was published in 2005 (Bartosh, Tudor, Ferguson, and Taylor, 2005). Although these studies did not investigate the impact of EE on science performance, Bartosh (2006) did. Here she employed a similar matched pairs design to compare the WASL scores and GPAs of grade 10 high school students participating, versus not participating, in yearlong outdoor environment programs. She found the WASL science and math scores of EE students to be significantly higher than those of non-EE students. There was no significant difference in WASL reading and writing scores for EE versus non-EE students. This is the only study [could find that looked at the relationship between EE and grade point averages (GPAs), and it revealed that GPA increases during the school year were significantly greater for EE students.

A second study using matched pairs design was conducted by Lieberman, Boody, and Lieberman in 2005. Although this study investigated only 4 pairs of schools (as compared to Bartosh's 77 pairs), it too compared student standardized test scores over a five-year period at traditional versus environmentally-based schools, and found that students at the environmentally-based schools outperformed their peers at traditional schools in all subjects investigated (math, reading, English language arts, and spelling) (Lieberman, Hoody, and Lieberman, 2005). This study was a follow-up to a previous matched pairs study by Lieberman, Hoody, and Lieberman (2000) that looked at the impact of a learning model called the Environment as in Integrative Context for Learning (EIC), on academic achievement. In the EIC learning *model,* a significant portion of learning takes place in the community and natural environment surrounding the school; hands-on projects and activities are emphasized. Students from 8 ErC schools (including elementary, middle, and high schools) were paired with analogolls students from 8 traditional schools. In all, the analyses indicated EIC students outperformed traditional students in 76% of language arts assessments, 63% of math assessments,

64% of science assessments, and 73% of social studies assessments (Lieberman, Hoody, and Lieberman, 2000).

A fourth matched pairs study by Kearney (2009) (not included in the *Environmental Education Report)* explored the impact of IslandWood, an OEE program in western Washington, on students. Although this study did not measure students' academic achievement via standardized test performance, it did measure students' factual environmental knowledge via pre- and post- surveys, "clicker questionnaires" (administered via slides and hand-held clicker devises), and cognitive mapping tools. In all, 828 students from 14 schools participated (including 7 treatment schools that attended the OEE program, and 7 school groups did not attend). Treatment and control schools were matched based on socio-economic level, location, and grade (5^{th} or 6^{th}). Students were assessed at the beginning and end of their OEE experience, and 6 weeks after their OEE experience. Overall, factual environmental knowledge of OEE participants increased between 28% and 38% directly following the experience; students retained this knowledge 6 weeks after the program's end. Conversely, factual environmental knowledge of non-OEE students (the control groups) decreased by 4% from pre-test to post-test. It is unclear whether or how the OEE-participants' newfound environmental knowledge impacts their performance on standardized tests or their grade point averages, but it is clear that the OEE experience significantly increases their environmental knowledge base and that students retain this knowleuge for the medium term.

Although the studies by Bartosh (2003, 2006), Lieberman, Hoody, and Lieberman (2000, 2005), and Kearney (2009), are the only ones that have employed a "matched pairs" design, two more key studies used a slightly less cigorous pre-trip versus post-trip design. One of these, conducted by the American Institute for Research in 2005, measured the impacts of three weeklong residential outdoor education programs on 255 at-risk sixth grade students in California from four elementary schools. The study found that OEE participants raised their science scores by 27 percent as measured hy a pre- and post-OEE survey administered immediately after the program. Students maintained these raised science scores two months after OEE participation as well. Unfortunately, this study does not have

a non-DEE control group, so it is unclear whether non-DEE students who receive science instruction inside the classroom (rather than outdoors during a multi-day DEE experience) would demonstrate similar gains in science knowledge (American Institutes for Research, 2005).

A second key study that explored the correlation between academic achievement and EE, and employed pre-testjpost-test methodology, is a 2004 study by Emekauwa. This study looked at the impact of school reform from traditional learning to place-based environmental learning, on academic achievement at five public elementary and middle schools in Louisiana. Prior to school reform, fourth grade students at these five schools took the Louisiana LEAP 21 test to evaluate their knowledge of science, social studies, English language arts, and mathematics. In the academic year following the pre-test, the five schools built nature trails and butterfly gardens and the students began studying local rocks and minerals, ecology, topography, weather, biodiversity, and water quality. The reform program encouraged teachers to bring students outdoors and into the community to learn. In order to gain the skills and knowledge to implement this place-based environmentally focused program, teachers participated in a summer training program. After two years of place-based program implementation, students took the LEAP 21 test again. The percentage of fourth grade students performing at unsatisfactory level on the test decreased from 32.6% to 18.4%, 39.0% to 24.9%, 27.5% to 19.4% and 39.4% to 28.1% in English language arts, math, science, and social studies, respectively. Although students at these place-based, environmentally focused schools did not necessarily participate in multi-day DEE programs, they did participate in many hands-on, environmental activities similar to those offered within DEE programs.

Together, these studies suggest that students who attend DEE programs or participate in place-based, environmentally focused curriculum at school, outperform their non-DEE and traditional school peers on standardized tests and on science and environmental knowledge tests. The two studies that looked specifically at the impact of DEE programs, found students' science and environmental knowledge scores (as measured by surveys) to increase by 27% to 38% directly following the experience; students retained this knowledge six weeks

later. It is unclear how the GEE experiences impacted students' environmental and science knowledge longer term. The studies comparing environmentally focused schools versus traditional schools, suggest that environmental schools significantly enhance students' standardized test performance in math, listening, and social studies, and science. The impact of environmentally focused school curriculum on reading and writing varied from positive to neutral; all studies of elementary and middle schools students found the impact of environmental curricula on reading and language arts to be positive; the one study of high school students found the impact of environmental curricula on reading and writing to be neutral.

Career ***Development***

My literature review unveiled numerous methodologically robust stcdies that demonstrate the correlation between GEE and EE participation and academic achievement; the relationship between EE and career development is less clear. In fact, I discovered only one study that explored the effect of K-12 GEE on career choice. This study by Kearney (2009) (the methodology of which I sumLlarized in the "academic achievement" section above) looked at the impact of IslandWood, a 3-night, 4-day *GEE* program on Bainbridge Island in western Washington, on career development. This study found that the environmental career interest of GEE participants (whose pre-tests indicated room for improvement in environmental career interest) increasedl9% from pre-GEE to post-GEE. This increased :nterest in environmental careers did not decrease significantly in the medium term (6 weeks post-GEE). Conversely, there was no statistically significant change in envirormental career interest in non-GEE students.

Although the Kearney (2009) study is the only methodologically robust study that looked at the impact of an GEE program on students' career development, another study looked at the impact of an environmental science magnet school on career choice. Seever (1991) evaluated the impact of Nowlin Environmental Science Magnet middle schuol on student interest in and awareness of environmental ca:'eers. Forty-five percent of the students reported that they jearned about environmental science careers via participation in the program, and 23% of eight

grade participants and 30% of sixth and seventh grade participants, reported that they believe they "might want to have a career in the field of environmental science" (Seever,1991). Unfortunately. this was not a controlled study, so it is undear whether similar students at traditional schools would be more or less interested in environmental careers. Despite the lack of studies regarding the impact of youth OEE programs on career choice, a couple of studies have examined the effect of EE targeted at adult populations, on career choice. These studies found that adults working in environmental fields often cite EE programs as an inf1uence on their career direction (Wheeler *et 01.,* 2007; Palmer, 2003; Tanner, 1980). One researcher explored the autobiographical statements of 232 environmental educators in England. He discovered participation in school and university outdoor programs to be one of the most common reasons these individuals pursued environmental education as a career (Palmer, 2003).

Clearly, more studies are needed to understand the impact of EE and OEE on students' career interests and career paths. Although two studies do suggest that participation in OEE or environmental magnet schools increases student interest in environmental careers by 19% to 30%, longitudinal studies are needed to determine whether and why these students actually embark on environmental careers.

Self-Esteem, Engagement, and Motivation

All of the 15 studies *reviewed* by Wheeler *et 01.* (2007) that address the correlation between EE and self-esteem, engagement, and motivation provide some evidence that EE enhances these characteristics. Much of this may be due to the outdoor, experiential, *adventure activities* that EE frequently emphasizes (Wheeler *et 01.,2007).* Although most of these studies rely on information that is self-reported by students, teachers, or parents, and do not statistically analyze the data, three of the studies in the report, as well as one study completed after the report was published, are particularly methodologically robust. I will summarize these studies and their significant findings below.

One study by Kaly and Heesacker (2003) explored the effects of a ship-based adventure program on self-esteem and ego-identity (self-exploration, and self-development). The study included 265 participants, ages 12 to 22 years. Although this program was not environmental in focus, it can be classified as an OE program because outdoor adventure activities including hiking, SCUBA diving, water skiing, and sailing were key components. Further, the program focuses on personal growth and development via group discussions and activities related to goals, choices, values, and communication. Before and after this three-week ship experience, participants completed a quantitative survey testing ego-identity status and self-esteem. They also completed a qualitative questionnaire. The results indicate no significant change in self-esteem pre-test to post-test. However, participants did make some significant gains in ego-identity (self-knowledge and self-development) (Kaly and Heesacker, 2003). It is important to recognize that because this program is 3-weeks long, it may provide more room for development in these arenas than conventional3-day OEE programs. It is unclear how the length of the program and the specific outdoor activities participants engage in, impact self-esteem and self-identity development.

Another study by Garst, Scheider, and Baker (2001) looked at the impact of participation in a 3-day OEE program on 58 adolescents' (ages 12 to 15) self-perception and behavioral conduct. The OEE program in this study differs from OEE Camp Colman in that the participants in this program voluntarily signed up for OEE via their city recreation and parks department; it was a sought out summer experience rather than a required school trip. During the 3-day trip students participated in hiking, caving, group activities and initiatives, and environmental education programming. The study's quantitative data stemmed from a participant pre-test, an immediate post-test, and a delayed post-test (four months post-OEE experience). The qualitative component explored participant self-perception via particioant observation, leader journaling, and post-trip interviews. Quantitative results suggest participants' social acceptance and behavioral conduct improved significantly as a result of the trip; gains in behavioral conduct were maintained four months later. Qualitative results indicate that the OEE experience enhanced participant self-perception by providing a means of escape from chaotic homes and

negative peer pressures, thus allowing participants space to discover and pursue new talents and interests (Garst, Scheider, and Baker, 2001).

A third study, conducted by the American Institutes for Research (2005), examined the impact of a five-day GEE program for at-risk sixth grade students in California on personal and social skills including self-esteem and cooperation. A total of 255 students from four elementary schools participated. These students as well as their teachers and parents completed three rounds of surveys: pre-GEE, post-GEE, and delayed post-GEE (administered 10 weeks after program completion). A control group of students who did not participate in the GEE experience also completed the surveys. The results indicate that perception of students' social and emotional growth differed between students, teachers, and parents. *Parents* did not observe changes in students' self-esteem, engagement in learning, or motivation. *Teachers* did observe statistically significant gains in their GEE students in each of these areas; they noted no change in the control group. GEE *students* self-observed significantly greater gains in their cooperation and conflict resolution than did non-GEE students. The fact that parent data reveals no change in participants' social and personal skills whereas teacher data reveals significant positive growth in all socio-emotional constructs, is intriguing and important to note. Either positive changes in social and personal skills translate more obviously to school rather than home activities, teachers were more attuned to such changes than were parents, or teachers subconsciously looked for and noted more positive change in GEE versus non-GEE students.

Whereas the three studies above focused on self-esteem and self-perception, a particularly recent study (which was not included in the Wheeler *et al. 2007* report because it was conducted thereafter) looked at the relationship between GEE and student engagement in learning. It found no statistically significant global changes in student engagement in learning as a result of GEE participation (Kearney, 2009). In this study, pre-, post-, and delayed post- surveys were administered to 478 fifth and sixth grade students from eight schools. (I have described the methodology of this study in more detail in previous sections). Whereas student surveys did suggest that students enjoyed and were engaged by

the experiential *GEE* teaching style, this did not translate into global changes in attitudes about learning in the classroom.

Combined, these studies show that EE, *GE,* and *GEE* programs foster some social and personal growth in students, but that the nature and extent of this growth varies from program to program and depends greatly on who is completing the pre- and post- surveys (parents, teachers, or students). Typically, there was more growth in students' self-understanding than in students' self-esteem. Teacher surveys consistently revealed students' social and personal growth, student surveys produced mixed results, and parent surveys did not reveal change in students' social and personal skills.

Civic Responsibility and Stewardship

The Wheeler *et al.* (2007) report reviewed eight studies that investigated the relationship between EE and civic responsibility. Evidence for increased civic engagement was mixed and none of the studies were particularly methodologically robust. The studies that did suggest that EE increased civic engagement relied on self-reported data rather than measured behavioral changes (Wheeler *et al.*, 2007J, One such study looked at the effect of an GEE program on students' stewardship of the environment and their appreciation of the wise use of natural resources. ([previously described the demographic and methodological details of this study by American Institutes for Research (2005) including the fact that it tested 255 at-risk sixth grade students from California who participated in a five-day GEE program). A comparison of pre- and post- survey responses suggests that environmental concern increased significantly for both GEE and non-GEE (control) groups. Despite increased environmental concern, engagement in environmentally responsible behavior decreased slightly but significantly for both OEE and non-GEE groups during the same time period. Interestingly, 4 to 6 weeks post-trip, the GEE group showed significant gains in both environmental concern and engagement in environmentally responsible behavior, whereas the non-GEE group showed decreases in environmental engagement (American Institutes for Research, 2005). These results suggest GEE programs may elicit environmentally responsible

behavior in students, but behavioral changes may not present themselves immediately. Rather, it may take students weeks or months to synthesize and internalize their OEE experience and translate their newfound concern for the environment into environmentally beneficial behavior.

Another study (Duffin, Powers, Tremblay, and Peer Associates, 2004) suggests that participation in one of four different Place-based Education Evaluation Collaborative (PEEC) programs that work with K-12 schools, enhances student stewardship behavior and civic engagement. These four programs were not 3-day OEE programs for middle school students. Rather two of them were "whole school change models" designed to foster a whole school, place-based, environmental learning focus, and two were "professional development models" designed to help individual teachers create place-based, environmental curricula. Research methods included case studies, pre- and post- interviews, and surveys (without a control group). Ultimately, this study found that the PEEC programs enhanced students' civic engagement, stewardship behavior, and involvement in community planning and decision making.

A third strong study by Kearney (2009) found that student environmental concern increased by 11% from pre-survey to post-survey. Students' sense of environmental stewardship increased 19%. Both of these gains were maintained 4 to 6 weeks later according to the delayed post-surveys. The control group showed no change in environmental concern. Despite the fact that OEE students' environmental concern and sense of stewardship increJsed significantly, it is unclear whether these gains translate into enhanced environmentally responsible behavior, as this study did not investigate behavior per se.

All of these studies give evidence to gains in students' environmental concern as a result ofOEE and environmental school participation. Further, the studies that surveyed for environmentally responsible behavior, found significant positive gains in such behavior as a result of program participation.

Teamwork

The report by Wheeler *et al.* (2007) did not explore the effect of EE on teamwork, but I believe this relationship is important to address because a recent meta-analysis of 44 studies of programs with challenge (ropes) courses, affirmed the use of challenge courses for teambuilding purposes (Gillis and Speelman, 2008). This meta-analysis included only those studies with control groups, quantitative outcomes, and sufficient data to report effect sizes. Although all of the studies included pre-tests and immediate post-tests, only 27.3% of the studies in the meta-analysis included delayed post-tests (administered over a month after the program's end). Where delayed post-tests did exist, the delayed effects of the challenge courses were consistently lower than the immediate effects. Although not all EE or GEE programs include challenge courses, many (including GEE Camp Colman, my case study focus) do.

[n addition the meta-analysis of the impact of challenge courses on teamwork described above, I found one study that explored the impact of a residential GEE program on teamwork. This study by Kearney (2009) investigated the impact of IslandWood (an GEE program for fourth through sixth graders) on teambuilding and group functioning. I have described the methodology of this study (which also explored the relationship between GEE and academic achievement, engagement, etc.) in previous sections. Kearney (2009) discovered that the number of students who reported that their group was not functioning well dropped from 19% to 7% from the beginning of the 4-day IslandWood experience to the end. Furthermore, the number of students who reported that their classmates "aren't nice/don't treat them well," dropped from 15% to 10%. When asked to list reasons for improvement in-group functioning, over 40% of the students simply noted that "working together" helped.

Together, the meta-study by Kearney (2009) and the study Gillis and Speelman (2008J provide substantial evidence that GEE programs and challenge courses enhance teambuilding. Clearly these programs provide students with opportunities to work together through challenges; however it is unclear which specific activities and endeavors best promote teambuilding.

Summary

Based on the robust evidence of relationships between K-12 EE and desired outcomes (particularly improved math and science academic achievement and enhanced environmental concern) OSPJ's *Environmental Education Report* (which I referenced multiple times in this section) made several recommendations to the Washington State Legislature. First. the report recommended that the legislature fund integrated project-based learning opportunities for all students. Second, it encouraged the legislature to provide financial support (i.e. $20 per student) to school districts for outdoor/experiential education such that all public school students have the opportunity to participate in "at least one full-day outdoor, experiential program during their K-12 years" (Wheeler *et 01.,2007).*

Characteristics of Successful OEE Programs

OSPl's *Environmental Education Report* identified six characteristics of successful environmental education programs based on the findings and recommendations of the studies they reviewed for their report (Wheeler *et 01.,2007)*. They are as follows:

(1) Integrated Approach. Here, "integration" refers to using EE as a means of connecting learning across multiple disciplines. For example, EE issues or themes (such as healthy watersheds) may be used to draw connections between teachings and assignments in science, social studies, and language arts.

(2) Effective Communication and Documentation. An effective communication system between teachers, schools, and the community is essential. Also, regular planning time for teachers to develop and improve the program is key. Documenting program activities may help with program assessment.

(3) Involvement of Community Partners. Involving the local community in EE programs can improve program quality. Community members and organizations may be able to provide expertise and funding.

(4) Professional Development of Environmental Education Teachers. On-going high-quality professional development is crucial to program success.

(5) Authentic Assessment. Students should play an active role in reflecting on and assessing what they gained from the program. This helps students develop ownership of learning.

(6) Long-Term Rather than Short-Term Programs. Although there are many interesting, exciting, and successful short-term programs, long-term programs have a greater impact on students. Long-term programs are especially effective at enhancing students' academic performance, anc helping them master skills and knowledge. Unfortunately, the OSPI report does not define "long-term" versus "short-term"

Effects of Linking DEE with Classroom Curricula

Throughout the past decade, several controlled, peer-reviewed studies have addressed the effects of linking off-campus environmental education experiences with classroom curricula (Smith-Sebasto and Cavern, 2006, Gutierrez de White and Jacobson 1994, Farmer and Wott, 1995, Stern *et al.*, 2008). Each found a statistically significant increase in student environmental knowledge, environmental respect, or interest in learning or discovery as a result of such integration.

In 1995, Farmer and Wott conducted a study on the impact of fieldtrip follow-up activities on cognitive ledrning. Participants inclucted 111 fourth grade students who visited the Washington Park Arboretum for part of one day At the center, trained arboretum teachers taught students about seed dispersal mechanisms and the plant life cycle via discussions, hands-on participatory activities (students dispersed seeds in numerous playful ways), and drawing activities. The teacher also addressed the function and mission of the Washington Park Arboretum as well as the size and type of its plant collections. Students hunted for and deciphered plant accession tags, and examined arboretum plants. Prior to this fieldtrip, all students completed a written short answer pre-test ahout the science and arboretum components that the fieldtrip would address. Two weeks

after the fieldtrip, the treatment group participated in a 45-minute classroom follow-up activity designed to reinforce fieldtrip learning objectives; the control group participated in a 45-minute activity unrelated to fieldtrip learning objectives. Directly after the follow-up activity all students completed a post-test (with the same questions as the pre-test) (Farmer and Wott, 1995). The pre- and post-test data suggest that the relevant field-trip follow-up activity significantly enhanced student learning.

It must be noted, however, that this study's application to my investigation of classroom-GEE curricular integration is limited for several reasons. First, the follow-up activity in this study consisted of one 45-minute lesson; the study did not address the effects of various types and lengths of follow-up activities on student learning. Second, the post-test was given immediately after the follow-up activities and therefore tested short-term memory rather than long term knowledge gains; it is unclear whether medium and long term knowledge gains would differ between treatment and comrol groups. Third, this study investigated the impact of a fieldtrip follow-up activity on knowledge only; it did not look at the impact of the integration of the fieldtrip and follow-up activities on student's environmental attitudes, academic performance, career development, self-esteem and motivation, or civic responsibility and service learning. Finally, it looked only at the impact of a *cbssroomfollow-up* activity on learning; it did not explore the impact of pre-trip *preparatory* activities on student learning.

Another study did explore the impact of a pre-trip activity on student learning; it also looked at the impact of a teacher professional development program (Gutierrez de White and Jacobson, 1994). In 1994, Gutierrez de White and Jacobson investigated the effects of adding either a 15-minute pre-trip slideshow, a professional development training class for teachers, or both, to a 2-hour zoo visit, on students knowledge and attitudes about wildlife conservation. Participants included 1015 fourth grade students (9 to 11 years) in 26 randomly selected schools in Colombia. Students in all four treatment-groups (zoo visit only, zoo visit and pre-trip slideshow, zoo visit and teacher professional development training, and no zoo visit (control group)) completed a pre- and post- trip questionnaire with 18 multiple choice knowledge questions and 16 five-point scale attitude questions. A

statistically significant increase in student conservation knowledge and attitude was found only among students whose teachers participated in the professional development training course. This training consisted of 52 hours of instruction over 4 months and stressed hands-on learning. It began by teaching teachers about the importance of plants and animal-plant relationships. It then introduced ecological concepts and conservation issues via activities developed at over 30 zoos and conservation organizations around the world. Finally, teachers were asked to design their own activities to be used by students at the zoo as well as before and after their zoo visit. Teachers were not required to use the newly acquired information in their own classrooms, and there was no attempt to control the information that teachers provided students in any of the treatment or control groups, The wildlife related knowledge of students whose teachers participated in the professional development course increased by 23.2%. Their interest in wildlife conservation increased from 3.3 to 3.7 on a Likert-type scale ranging from 1 to 5, There were no significant knowledge or attitude changes among students in the control group or the other treatment groups. The results indicate that knowledge and positive attitudes towards wildlife conservation can be fostered in youth by enhancing their teacher's knowledge of the topics (Gutierrez de White and Jacobson) 1994).

This study reveals that the 2-hour zoo visit alone was insufficient to affect change in students) knowledge or attitudes about wildlife conservation, The pre-trip lesson (in this case a slideshow) did not affect change either. That said, it is important to recognize that the slide show was limited to 15 minutes of pictures of endangered wildlife; it is possible that a different type of pre-trip activity or a longer series of pre-trip activities would have yielded pronounced knowledge or attitude changes, Further it is possible that a longer or more interactive zoo trip alone would have affected significant cognitive or attitude changes, As it stands, o:lly the teacher-training workshop was effective, This is an important outcome because it suggests that it may be more effective for organizations serving students to *invest* time and money into training teachers (who will then presumably teach and impact their students) rather than into developing their own pre-trip slideshows,

This study is limited in its application to my study of the impact of curricular

connections between OEE and classrooms. First, the zoo fieldtrip is much shorter than the 3-day, 2-night OEE experience I investigated. Second, the zoo fieldtrip is less structured than the OEE experience in that students are not engaging in classes and hands-on activities at the zoo; at OEE they engage in at least 10 hours of participatory learning during their visit. That said, both the zoo and OEE are out-of-the-classroom, experiential learning experiences. Third, whereas this study confirms the considerable impact that teacher knowledge and attitudes can *have* on student knowledge and attitudes, it fails to address the specific activities that teachers bring back to their classrooms (after the teacher training course) to engage and teach students. As I will describe below, my study will uncover the scope and types of activities that teachers employ pre- and post-OEE.

A third study is particularly relevant to my OEE Camp Colman case study in that it explores an OEE program whose duration, participants, and program activities closely resemble those ofOEE Camp Colman (Smith-Sebasto and *Cavern,* 2006). In 2006, Smith-Sebasto and *Cavern* conducted a study that measured the impact of adding pre-trip and post-trip in-class activities to a 3-day, 2-night OEE experience at the New Jersey School of Conservation (NJSOC). Study participants included 168 seventh grade students from a suburban New Jersey school. While at NJSOC these students were outside 7 hours per day participating in hands-on environmental sciences, humanities, outdoor, and social sciences activities. The researchers investigated the effects of GEE participation on students' attitudes towards the environment, and the effects, if any, of adding pre-trip, post-trip, and both pre- and post-trip activities. Pre-trip and post-trip activities were 45 minutes each; the pre-trip activity was completed one day before OEE and the post-trip activity was completed one day after OEE. The pre-trip activity was designed to activate students' prior knowledge and expectations about spending time outside in nature. It asked students to consider how their preset expectations might affect their understanding of situations. The post-trip activity was designed to encourage students to reflect on their OEE exoerience. It asked students to consider how OEE changed their beliefs and feelings about the environment. In order to measure changes in students' attitudes toward the environment, researchers employed the Children's Environmental Response Inventory (CERI) and looked at the change in scores from pre-test to post-test. The study revealed a statistically significant

increase in students' respect for the environment only when students participated in both pre- and post-trip activities (Smith-Sebasto and Cavern, 2006).

This study suggests that integrating GEE with classroom curriculum has a positive affect on students' attitudes toward the environment. However, the study nas limitations as well. First, it looks only at the impact of connecting classroom activities with GEE activities on students' environmental attitudes; it does not investigate the impact of curricular connections on academic performance, career development, self-esteem and motivation, civic responsibility and service learning, or teamwork. Secondly, it employs only one type of pre- and post- trip activity, maybe different activities would affect students' environmental perceptions differently. Third, activities were limited to 45 minutes, perhaps their impact would increase if activities were carried out over several days, weeks, or months. Fourth, the study was limited to students in one grade at one school; students in differelt grade levels and from different locations (i.e. urban and rural) may respond differently. Fifth, many students (71 of 277) skipped items on the pre- or post-tests. Further, students may not have taken the tests seriously such that their responses do not reflect their true attitudes (Smith-Sebasto and Cavern, 2006).

Finally, a 2008 study by Stern *el 01.* looked at the impact of an array of degrees of pre-GEE preparations. More specifically, it investigated the effect of pre-trip preparations on students' connection with nature, environmental stewardship, interest in learning and discovery, and awareness of biodiversity, by asking students to complete pre-trip and post-trip surveys The participants included 183 fourth through seventh grade students from 20 school groups. Stude:1ts attended a 3-day or 5-day GEE progra'n at the Great Smoky Mountains Institute at 'Tremont, taking numerous classes focusing on cooperative teambuilding and inquiry-based science in an outdoor, national park setting. Upon their arrival at Tremont, participating teachers were asked to self-determine the degree to which they prepared their students for the trip. The categories included: 0 (no preparation), 1 (logistics only), 2 (minimal content-related preparation), 3 (moderate content-rebted Dreparation], 4 (extensive content-related preparation), and 5 (focus of semester up until trip). Stern *et 01.* found that 6% of teachers rcported no pre-visit preparations, 18% reported discussing only logistics, 18% reported minimal content-related preparation, 52% reported moderate content-related preparation, and 6% reported

extensive content related preparation. The data suggest a statistically significant correlation between degree of pre-visit preparation and students' scores in "interest in learning and discovery" post-trip. There were no significant correlations between pre-visit preparations and scores in other categones (Stern *el al., 2008).*

One of the primary limitations of this study is that teachers self-ranked the degree to which they prepared their students. It is unclear how each teacher defined "minimal" versus "moderate" versus "extensive" pre-trip preparations. It is possible that what one teacher considered "extensive" another teacher considered "minimal". A larger sample size and a more rigorous system for determining and ranking the degree of pre-trip preparation, would better promote an understanding of the relationship between degree of pre-trip preparation and student environmental awareness and connection with nature. Another limitation of the study is its failure to investigate the impact ofOEE follow-up activities.

All of the studies above address the impact of the integration of classroom curricula with OEE experiences (or nature-based fieldtrips). Despite the studies' various limitations, the data clearly suggest that curricular connections pre-trip and post-trip enhance students' environmental knowledge and respect, and their interest in discovery and learning. My literature search did not reveal any studies that concluded the contrary. However, despite the demonstrated positive impact of classroom-OEE curricular integration on students' environmental knowledge and attitudes, no study has provided specifics about the range of existing integrative endeavors. Further, no study has explored the challenges and barriers to such integration or identified the ways in which these barriers can be overcome. Both a lay-of-the-land exploration of current integrative practices and an assessment of real-life barriers to such integration remain critical literature gaps.

RESEARCH METHODOLOGY

Research Approach

In order better understand curricular integration between OEE and the classroom, including present realities, challenges, and barriers, I decided to employ a case study approach. A case study involves an in depth examination of a single

event, situation, person, community, or program (Stake, 1995). In this case, I chose to delve deeply into OEE Camp Colman. I chose the case study approach because an in depth exploration of current OEE-classroom curricular integrative practices, and an assessment of barriers to this integration, remain key literature gaps. Time and resource limitations prevented me from thoroughly investigating dozens, hundreds, or thousands of OEE programs, and a cursory overview of hundreds of programs would likely prove too superficial to uncover complex realities. Accordingly, I chose to concentrate on one program in depth. I chose OEE Camp Colman in particular because (a) it is a local program that I already had some familiarity with (I worked as an OEE instructor there in 2004), and (b) the program's new director is interested in and dedicated to making positive change; she is open to an outsider's insight into curricular integration and is motivated to take constructive action that will benefit her own organization and participating school groups.

Case studies incorporate information from multiple sources such as field observations, interviews of key stakeholders, surveys, peer-reviewed journal articles, and documents (Stufflebeam *et al.*, 2000). These muitiple sources of information enable case study researchers to employ triangulation. By comparing and contrasting information pertaining to complex phenomena from each source, they can establish meaning (Stake, 1995). In this case,1 built my facts and conclusions around the consistencies and inconsistencies (both subtle and transparent) of data from several sources. I gathered both qualitative and quantitative data; triangulate information gathered from OEE directors, participating teachers, and journal articles; and express facts and conclusions in both qL;alitative and quantitative terms.

Not only have I employed a case study methodology, I have also attempted to incorporate illuminative evaluation methodology. "Illuminative evaluation," coined in 1970, grew out of a dissatisfaction with more traditional approaches to program evaluation. Traditional evaluation approaches pre-specify problems to be researched and tidily address only those discrete issues in their findings. As a result, their findings are arguably too contrived and restricted in scope to adequately address complex programs or problem areas. Illuminative evaluation

allows more flexibility to post-specify problem areas. It allows the researcher to discover key tangential information along the way and weave that information into the larger story. Furthermore, whereas traditional evaluation relies primarily on quantitative data and test scores, illuminative evaluation incorporates interviews, surveys, documents, and background information as well (Parlett and Dearden, 1977). My goal in utilizing illuminative evaluation was to examine curricular integration between Camp Colman and the classroom via data from numerous sources in order to "il1uminate" the realities of and barriers to curricular integration. I also wanted to determine how those barriers could be circumnavigated or broken. Using illuminative evaluation I had the flexibility to discover information and perspectives tangential to my original questions and to incorporate these findings into my discussion and analysis in order to produce a complete story.

My research incorporated numerous methods, the first of which was a literature review of peer-reviewed journal articles. Secondly, I interviewed two groups of people (1) teachers who bring their middle school students to OEE Camp Colman, and (2) educationa: directors ofOEE programs in western Washington (including the OEE director of Camp Colman). Additionally, I administered oral surveys to the teachers I interviewed and to the OEE Camp Colman director. Finally, I examined curriculum samples from teachers and OEE directors, and I investigated publicly available information on the websites ofOEE programs and participating schools. Ultimately, I have attempted to integrate, in a converging fashion, data from all of these sources to produce a nuanced description of present day curricular integration between OEE Camp Colman and classrooms, to identify challenges and barriers to curricular integration, and to suggest realistic means of enhancing curricular integration based on the goals, needs, and concerns of OEE Camp Colman and participating classroom teachers.

Interviews with OEE Education Directors

In January and February 2009, I conducted on-site, in person interviews with the education ciirectors/coordinators of four well-established OEE programs in western Washington:

(1) Camp Colman

(2) IslandWood

(3) Olympic Park Institute (OPI)

(4) North Cascades Institute (NCI)

The locations of these programs are marked on the map below (see Figure 1). chose to interview Camp Colman's OEE director for two reasons. First, in fall 2004, I worked at Camp Colman as an OEE instructor and am thus familiar with its OEE program. Second, Camp Colman employed a new OEE director in fall 2008 who is not only passionate about OEE, but remains dedicated to making positive changes to Camp Colman's OEE program. She committed to putting me in contact with teachers who bring their students to OEE Camp Colman so that I could interview them. Further, she expressed genuine interest in learning from and acting on the findings of my thesis. I chose to interview education directors/coordinators at IslandWood, the Olympic Park Institute (OPI), and the North Cascades Institute (NCI) in order to explore the realities and challenges of curricular integration at other OEE programs in western Washington. IslandWood} OPI, and Ncr are not only well-respected institutions in the region} but provide OEE programs with duration, audience, and focus similar to that of Camp Colman. Furthermore, IslandWood and opr are in-session during the winter months such that r was able to observe their OEE programs *in* action.

In-person interviews with OEE directors/coordinators ranged in length from 40- to 64-minutes. Additionally, r conducted a 90-minute informal} in-person, informational interview with Camp Colman's OEE director in January 2008, prior to conducting the formal interviews. After obtaining consent, I recorded each interview with a voice recorder and then transcribed the interviews onto my computer. I did not know any of the subjects prior to the interviews; rather, I obtained the subjects' names and contact information from the websites of their respective organizations. Prior to each interview, r e-mailed or talked briefly (over the phone) with each subject to arrange the interview. In order to maintain confidentiality, I will identify the OEE directors/coordinators that I interviewed by a letter (rather than by their real name). The letters [have chosen are as follows:

"MH" indicates Camp Colman's OEE Director; "DD" indicates IslandWood's Head of Graduate Program; "KH" indicates OPI's Education Director; and "JC" indicates NCI's Mountain School Coordinator. My subjects are all female and range in age from twenty-six years to middle-aged. I asked each OEE Director/Coordinator 7 quantitative questions and 11 qualitative questions (see Appendix A). In some cases, I asked my subjects additional follow-up questions, inviting them to clarify or elaborate on key points.

In many cases I was able to verify the quantitative data I obtained from my subjects during the interviews with data provided on the organizations' websites; however, not all data was available in writing. In order to analyze the quantitative data, I arranged them into a table and then employed demographic statistical analysis. To analyze the qualitative data, I coded the transcribed interviews and then organized the data into themes and sub-themes.

Map of Participating OEE Programs and Schools

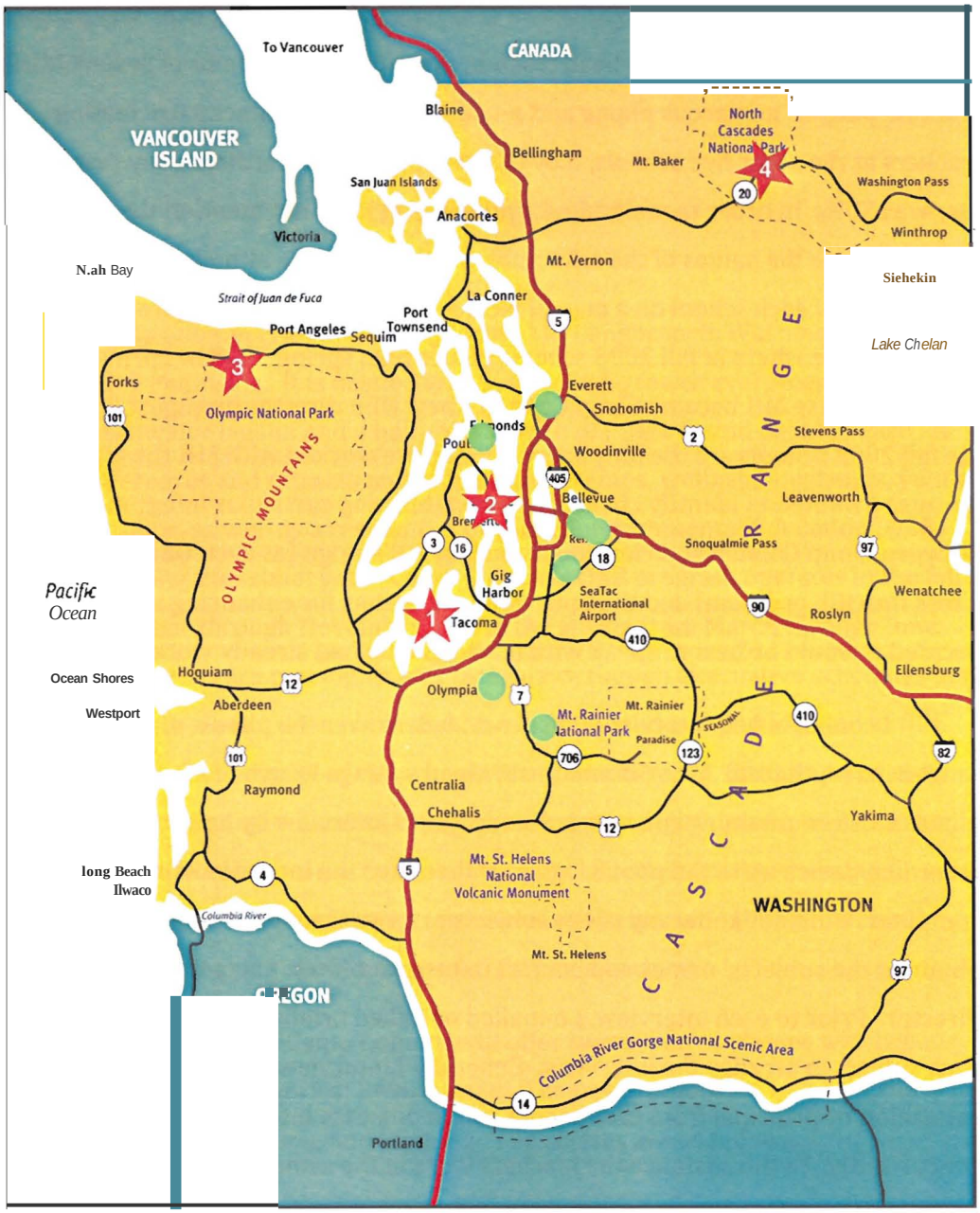

Figure 1. This map of western Washington depicts the locations of the schools and the GEE programs that [included in my study. GEE programs are denoted with red stars. (1 =GEE Camp Colman; 2 =IslandWood; 3 =Olympic Park [nstitute; 4 = North Cascades Institute). Schools are denoted with green circles.

Interviews and Surveys of Teachers. **Principals, and Counselors**

Camp Colman worked with twelve schools in fa112008. In February and March 2009, I interviewed the head teacher, principal, or counselor of seven of these schools. Despite numerous phone and e-mail attempts to contact participating teachers at the other five schools, they did not respond. Accordingly, my response rate was 58%. In order to maintain confidentiality, I will not mention the names of my subjects or the names of the schools at which they work, although I have marked the location of each school on a map of western Washington (see Figure 1). I interviewed teachers at fall 2008 schools rather than spring 2008 or spring 2009 schools because MH became Camp Colman's new GEE director in August 2008, so the fall 2008 schools are the only schools that have worked with MH thus far Because I wanted to identify challenges to establishing curricular integration between Camp Colman and classrooms during MH's reign (as each GEE director alters the GEE program) and then provide suggestions for enhancing integration, I decided it would be best to speak with teachers who had already worked with MH.

I conducted all interviews of school leaders over the phone. Interviews ranged in length from 31 to 50 minutes with an average length of 40 (+/- 8) minutes. After obtaining consent, I recorded each interview by holding a hand-held recording device up to the phone. I then transcribed the interviews onto my comnuter. I did not know any of the subjects prior to the interviews; rather, J obtained the subjects' names and contact information from Camp Colman's OEE director. Prior to each interview, I e-mailed or talked briefly (over the phone) with each subject to arrange the interview. Generally I interviewed one teacher, counselor, or principal from each school, but in one case interviewed two teachers concurrently In this instance the teachers were in the same room talking to me on speakerphone

Each interview consisted of8 quantitative questions and 13 4ualitative questions (see AppendiX B). I asked additional clarifying questions if the subjects' responses were vague or unclear. At the conclusion of each interview I asked subjects to complete a verbally administered survey. The survey asked subjects to rate their interest in employing 19 hypothetical means for enhancing curricular integration between GEE Camp Colman and the classroom on a scale of 1 to 5, 1

meaning "Not Interested", 5 meaning "Extremely Interested" (see Appendix C). Additionally, I verbally administered the same survey to MH, Camp Colman's OEE director.

OEE PROGRAMS

Camp Colman

Camp Colman is a YMCA camp located in Longbranch, Washington, on Puget Sound's Key Peninsula. It is nestled within a second-growth evergreen forest and boasts a saltwater lagoon and a half-mile stretch of Puget Sound pebble beach. It hosts conferences and retreats and offers family camps, wellness weekends, youth summer camps, as well as a residential Outdoor Environmental Education (OEE) program during the school year. Camp Colman's OEE program operates in the fall from September through November, and in the spring from March through June. Most OEE sessions are two nights and three days, though alternative schedules may be arranged. Last year, 41 schools and nearly 3000 students participated in OEE Camp Colman; the majority of the schools bring fourth grade, fifth grade, or sixth grade students, though a handful bring seventh grade, eighth grade, or high school students. Camp Colman can accommodate up to 182 students, teachers, and chaperones at a time, with sleeping accommodations in rustic (but winterized] wooden cabins housing about a dozen participants each.

This spring OEE Camp Colman will offer twenty-three classes which it classifies into four categories: Environment/Science, Outdoor, Challenge/Communication, and Evening. The classes are as follows:

ENVIRONMENT & SCIENCE:	CHALLENGE & COMMUNICATION:	
Super Salmon	Challenge & Teamwork	EVENING ACTIVITIES:
Birds of Puget Sound	Climbing Wall	Night Hike
Beach Walk	Vertical Playpen	School-Led Fires
Marine Invertebrates	The Beast	Combi-Fire
Forest Ecology		Dork Dance
Micro Forest	OUTDOOR ACTIVITIES:	Alpha Wolf
Garden & Sust. Living	Orienteering	Bizarre Bizarre
Plant Exploration	Outdoor Living Skills	
Geology	Canoeing	
Life/Death in Forest		

The "Environment/Science" courses introduce basic ecological concepts through exploration of the natural environment. These courses encourage respect for the environment, an understanding of human impact on the environment, and an appreciation of each individual's ability to make a difference with respect to environmental stewardship and care. The "Outdoor" courses introduce outdoor wilderness skills and foster self-esteem and teamwork. The "Challenge/Communication" courses promote team building and personal growth in a supportive atmosphere. These classes incorporate the climbing wall and the low elements initiative courses. The "Evening Activities" vary from purely fun to educational. The educational *evening* activities include the "Night Hike" in which students learn about nocturnal animals, bioluminescence and color perception on a night hike, and "Alpha Wolf," in which students learn about *wolves* and then participate in a simulated game, role-playing a wolfpack searching for the alpha wolf. The "Campfire and "Combi-fire" *involve* songs and skits; they mayor may not incorporate environmental themes depending on the desires of students and teachers. In "Bizarre Bizarre" students act out words and phrases that are science-based or environmental in theme. "Dork Dance" is purely fun; it is a high-energy conglomeration of music and dancing (YMCA Camp Colman, 2009b).

Several months prior to their Camp Colman experience, a teacher or school staff member completes a five-page group information packet in which they select *five* daytime classes and two *evening* activities for their students. Each daytime class ranges in length from 1.5 hours to 2 hours; each *evening* activity lasts 1.25 hours. Upon arrival, teachers divide students into study groups (with an average size of 15 students).

Each study group is led and taught by the saine Camp Colman OEE instn ctor for the duration of the *visit.* These OEE inst "Jctors arE:: hired and trained by the OEE director; instructors commit to teaching for one season (fall or spring) but may elect to stay for *several* seasons. In fall 2008, Camp Colman's instructional staff consistec of eight instructors, the OEE director, and the assistant OEE director. All ten instructional staff members were new to OEE Camp Colman that fall, though some instructors had worked as Camp Colman summer camp counselors during summer 2008. Because Camp Colman's OEE director, MH, was new to Camo Colman in fall 2008, she did not hire her own instructional staff that season; rather the interim director who preceded her did. Most of the fall 2008 instructors were in their early twenties and had completed a couple of years of college; one was an "intern" getting college credit for her work as an OEE instructor. In spring 2009, MH (who is 26 years old with no prior OEE director experience but several years ofOEE instructor experience both at Camp Colman's sister camp on Orcas Island, OEE Camp Orkila, and at Nature's Classroom in Ohio) plans to hire instructional staff"with at least a bachelor's degree, course work in science, and some OEE experience" (MH, 2009). For fall 2008, she developed a 1-week training program for instructional staff pre-season; she has elected to lengthen staff training to 2.5 weeks in spring 2009. In addition to one OEE instructor per study group, one or two teachers, parents, or high school students (chosen and trained by the participating school) accompany each group. The OEE instructors teach the classes, but the chaperones may assist or help moderate student behavior as needed.

OEE Camp Colman lacks a clear, concise mission statement. Currently its "mission" consists of one page of OEE-related quotes from uncited authors as well as a one-page description of the role environmental educators play, written by John Hug of the Ohio Department of Education. Despite its nebulous mission, OEE Camp Colman identifies *five* clear goals:

> (1) To promote students' understanding of ecological principals, environmental components, and their interactions;
>
> (2) To promote students' respect for the environment as the source of community heaith and quality of life;

(3) To teach students how choices and actions affect the environment;

(4) To develop students' communication and cooperation skills;

(5) To encourage students to reach their full potential and become self-aware through development of spirit, mind, and body in the YMCA tradition.

GEE Camp Colman seeks to accomplish these goals by catering to a variety of learning styles. Activities include role-playing; immersion in the environment; use of smell, touch, sight, and sound; group discussions; and active demonstrations, participation, and observation. Interestingly, both the GEE Camp Colman "Mission" and "Goals" are written only in the *YMCA Camp Colman DEE Staff Manual* (2003) and not on the YMCA Camp Colman webpage or in the information provided to teachers, parents, and students.

According to my informational interview with Camp Colman GEE Director, MH, Camp Colman is interested in enhancing the level of integration between GEE curriculum (at Camp Colman) and curricula in the classroom (at students' schools). In fact, the Camp Colman GEE Teacher Packet states:

> "We strongly suggest that you do pre-activities to help your students prepare for their resident experience as well as post-activities to help them follow-up and build upon the experiences that happened during their trip. Expanding the experience in this way will make their trip much more meaningful than an intense but isolated 3-5 days" (YMCA Camp Colman: GEE Teacher Packet, 2009).

Currently, Camp Colman's efforts to integrate the two include:

(1) Curriculum Incorporates Washington State's EALRs. Within the 34-page GEE Teacher Packet there is a comprehensive guide to each class and activity. This guide includes the possible learning outcomes, the possible activities in which students will engage at Camp Colman) and the possible connection to Washington State's Essential Academic Learning Requirements (EALRs) for each class. Note that this comprehensive guide to Camp Colman classes and the EALRs that each addresses, is new for spring 2009. The teachers whom I interviewed who hrought their students to Camp Colman in fall 2008 did not have access to this information.

(2) Pre-Trip Curriculum Ideas. Within the GEE Teacher Packet there is a half-page list of pre-trip activities in which teachers can engage students. Again, this is new

for spring 2009; teachers Imterviewed who brought their students to Camp Colman in fall 2008 dId not have access to this information. The suggestions include:

- Letter to Myself. (Pre-trip, students write a letter to themselves about their Camp Colman hopes and fears. Teachers return the letter to the students after the trip).
- journal Writing. (Journals can be used before, during, and after the trip)
- Photo Board or Collage
- News Reporting. (Student groups can report on Camp Colman topics such as classes, meals, or instructors).
- Vocabulary. (Specific vocabulary is not provided here but teachers are encouraged to talk with the OEE director if they would like ideas).
- Environmental Club

(3) OEE Director Talks (On Phone) with Teacher Pre-Trip. Camp Colman's OEE Director talks on the phone with a staff member from 75% of the schools before they arrive to discuss the upcoming program and answer questions.

(4) OEE Director Visits School Pre-Trip. Camp Colman's OEE director visits 30%-35% of the schools prior to their Camp Colman trip. Typically she goes to the schools' parent nights to explain the program to parents and answer questions. Sometimes she meets with individuaj teachers or groups of teachers as well. This visit is included in the cost of the program and Camp Colman's OEE director is happy to visit all participating schools that are interested.

(5J Teacher Planning Questionnaire. One page of the five-page Group Information Sheet asks teachers to describe the curricular connections they make between Camp Colman and the classroom and to identify their Camp Colman goals. More specifically, teachers are asked to respond to five questions such as: "How do the Colman classes you have selected correspond to what you are doing in the classroom?"; "Is there a particular activity you are hoping to see in any of your classes"; and "Are you students bringing a journal? How would you like instructors to utilize them in Class?" (Camp Colman Group Information Sheet, 2009J. *It* is important to note that these questions are new for spring 2009. The teachers I interviewed who brought their students to Camp Colman in fall 2008 were not asked to complete such a form.

Other OEE Programs

The other institutions that I investigated ([slandWood, Olympic Park Institute, and North Cascades Institute) operate OEE programs similar to Camp Colman's. Tables ia and ib summarize and compare characteristics of these four OEE programs including the year each was founded, the number of schools each works with yearly, the number of students each works with yearly, the typical grade levels of the students each works with, the percent of public versus private schools each works with, the number of days each school group stays, the months of the year that each OEE program operates, and the cost per student.

Comparison of DEE Programs (a)

OEE Program	Year Founded	Schools PerYear	Students Per Year	Typical Grades	% Public School
DEE Camp Colman	1995	41	3000	4th-6th	83%
IslandWood	2002	70	3350	4th-6th	66%
Olympic Park Institute (OPI)	1987	122	4000	4th-12th	50%
Mountain School (NCI)	1990	44	1482	4th-6th	86%

Table lea).

Comparison of DEE Programs (b)

DEE Program	Average Stay (# of days)	Months of Operation	*CostjStudent (2 nights, 3 days)
DEE Camp Colman	3	Sept-Nov; Mar-fun	$104
IsIandWood	4	Sept-Jun	$157
Olympic Park Institute (OPI)	3	Sept-Nov; Jan-Aug	$190
Mountain School (NCI)	3	Sept-Nov; Mar-Jun	$300 (private sch.) $150 (public sch.)

Table l(b). Tables l(a) and l(b) compare OEE Camp Colman with three other OEE programs in western Washington (IslandWood, Mountain School (at NCI), and Olympic Park Institute). Data describing OEE Camp Colman is highlighted in red.
* Note that the costs listed are unsubsidized costs. All of the OEE programs offer discounts to schools with a high percentage of students in the free and reduced lunch program.

IslandWood

IslandWood consists of 249 acres of forested land as well as 6 acres of conference centers, classroom buildings, and lodges. It is situated on the south side of Bainbridge Island in western Washington's Puget Sound. IslandWood is guided by a clear, concise mission: "To provide exceptional learning experiences and to inspire lifelong environmental and community stewardship". To this end, IslandWood was constructed and is operated with the goals of energy conservation,

the harnessing of alternative energy sources, recycling, and composting in mind. lslandWood hosts teacher in-services, summer camp programs for children and families, a ten-month residential graduate program in "Education, Environment, and Community" in partnership with the University of Washington, and an OEE program for middle school students termed the "School Overnight Program." IslandWood opened in the summer of 2000, and its OEE program began in the spring of 2002. Whereas Camp Colman is closed to school groups for four months during the winter (from *mid-November* to mid-March), IslandWood's OEE program operates from September through June with a one-month break from mid-December to mid-January. Last year, IslandWood *served* 3350 students, 9% more than Camp Colman.

Unlike Camp Colman, IslandWood does not hire OEE instructors. Rather, IslandWood's graduate students, under the supervision and coaching of experienced environmental education professionals, teach the School *Overnight* Program. These graduate students *receive* graduate credit toward a masters' degree rather than monetary compensation in exchange for the *extensive* teaching that they do. Last year there were 23 graduate students at IslandWood. In order to enable IslandWood's graduate students to both take courses at IslandWood from IslandWood faculty and teach the School Overnight Program, they are split into two groups. One graduate student group spends a week teaching in the School Overnight Program while the other group takes courses. The next week, the groups switch roles. Accordingly, all instructors of IslandWood's OEE program are graduate students pursuing a career in environmental education or a related field. (lslandWood, 2009; 00,2009).

Like Camp Colman's OEE program, IslandWood's program is geared primarily toward fourth through sixth grade students. At IslandWood, school groups typically come for three nights and four days (as opposed to two nights and three days at Camp Colman). Whereas Camp Colman groups classes into three themes: environment/science, challenge/communication, or outdoor, and asks teachers to select 5 of 23 classes in which their students will participate during their visit, IslandWood groups curriculum into two themes: ecosystems and watersheds. Half of each school's students participate in the ecosystems thread for the duration of their visit; the other half participate in the watersheds thread. Teachers do not

select a handful of classes for the:r students to engage in; rather IslandWood's gracuate student inst'uctors plan each day as they see fit. However, instructors do seek to understalld the goals and objectives of teachers.

Like OEE Camp Colman, IslandWood believes that curricular integration between the SC:1001 Overnight Program and the classroom is important In fact, IslandWood's School Overnight Program website states: "When visiting schools schedule their Four-Day Residential Experience, they enter a partnership with our fuL-time faculty that creates a year-long :earning progression for students and teachers" (IslandWood, 2009).

At IsIandWood, efforts to integrate the School Overnight Program with classroom curricula include the following:

(1) Curriculum Consultation and Orientation Workshop for Teachers. This enables teachers to voice their goals, objectives, and desired focus for their OEE experience.

(2) Orientation Presentation about IsIandWood. Schools can request presentations for parent groups or others pre-trip. Orientation PowerPoint presentatIOns are also available for dow 'load on IslandWood's website.

(3) Instructor Pre-Trip School Visits. An IslandWood instructor visits each schoe' at least once, and sometimes several tunes, pre-trip. Instructors gel acquainted with the teachers and students, help teachers prepare for the experience, and ensure alignment of the curricula. Depending on the needs and desires of the teacher, the ISlandWood instructor may simply orient students to the upcoming experience, or they may teach lessons that integrate IslandWood curricula with classroom curricula.

(4) Instructor Post-Trip School Visits. IslandWood instructors return to the classroom post-trip to reinforce learning and to help students implement related projects. Last year, instructors visited each school two tv three tilnes on average, including both pre-trip and [lost-trip visits.

(5) Professional Development for Teachers. During each 4-day OEE session, teachers can elect to participate in a free 2.5-'lOur professional development workshop to help them plan a classroom project based on or related to the

IslandWood experience. Additionally, three times per year, IslandWood hosts a complementary, full day professional development workshop for teachers called "Connecting Classrooms." Teachers who participate in this workshop are eligible to receive 5.5 clock hours. Finally, IslandWood hosts a multiday summer teacher's conference annually. Last year 195 teachers participated in a professional development workshop or conference at IslandWood.

(6) Curriculum Kits. IslandWood has created four curriculum kits that teachers can borrow pre-trip or post-trip. The kits have four themes: soil, water, waste, and garden, and contain the lessons, worksheets, and equipment necessary to carryout the activities. Last year, 26 out of 70 schools used the kits.

(7) Make a Difference Summit. Each spring IslandWood invites teachers and student representatives from each school to return to IslandWood to present their work on a community stewardship project inspired by or related to their IslandWood experience. Last year 20 schools engaged in IslandWood-inspired community stewardship projects, and 10 schools participated in the Make a Difference Summit.

(8) Educational Media. IslandWood's website includes a page with links to five 11- to 60-minute films that explore cultural stories related to IslandWood.

(9) Kids Web Page. This page includes links to IslandWood songs about decomposers, producers, and banana slugs. It also includes word searches with vocabulary acquired at IslandWood, a list of commonly seen animals on IslandWoou's campus, a list of the Puget Sound fish species that lslandWood's lodge rooms are named after, a resource to help identify invertebrates found in local compost and soil, a link to past IslandWood data measurements of macro-invertebrates found during water quality testing, and a list and plotted sightings of mushrooms found at IslandWood. Finally it contains links to 45 different kids websites related to science, technology, the environment, and the arts.

(10) Children's Book. IslandWood recently published its first hook: *The Tree that Came Home.* This book is told through the eyes of a Douglas fir tree that lived in the Puget Sound region hundreds of years ago.

(11) Student tournaI. IslandWood provides all students with a 43-page journal containing a wide variety of information and activities related to IslandWood. Additionally, the journal contains a list of key vocabulary with definitions, as well as a checklist of IslandWood flora and fauna. The IslandWood Teacher's Manual contains a teacher's edition of the journal with answers to the questions in the student journal. The teacher's edition also contains suggestions of ways to expand on each journal activity back in the classroom.

Olympic Park Institute (OPI)

The Olympic Park Institute (OPI) is part of Nature Bridge, which has three campuses in National Parks of western states; OPI's campus is located on the shores of Lake Crescent in Washington State's Olympic National Park. Olympic Park Institute offers facilities for seminars, retreats, and weddings, as well as wilderness medical trainings, professional development workshops for teachers, summer youth programs, an Elderhostel program, and a residential OEE program, which it terms its "Field Science Program". Founded in 1987, the OEE program serves groups of students in grades 4 through 12. Unlike the other three OEE programs I explored (which cater to students in grades 4 through 6), opr serves junior high and high school groups on a regular basis. Typically student groups stay for two nights and three days, but they may opt to stay for four nights and five days. At its core, the mission of OPI's Field Science Program is similar to that of Camp Colman's OEE program, IslandWood's School Overnight Program, and the North Cascade Institute's Mountain School (described below). The Olympic Park Institute is "dedicated to providing educational adventures in nature's classroom, to i'lspire personal connection to the natural world and responsible actions to sustain it" (Olympic Park Institute, 2009). However, OPI emphasizes science learning more heavily than do the other programs.

The Olympic Park Institute employs twelve to thirteen Field Science Educators who all have at least a bachelor's degree and one year of teaching experience. Field Science Educators teach the same study group (12 students on average) for the duration of the program, as they do at the other three institutions I

researched. Students participate in one of four curriculum tracks at OPI: forest ecology, watershed science, geology and earth science, or Elwha River science and geography. Although teachers choose the curriculum track for their students and may make general requests regarding the activities their students engage in at OPI, teachers may not elect specific classes or activities from a list as they do at Camp Colman. Instead, OPl's educators create a unique program for each group of students with whom they work

Like Camp Colman and IslandWood, The Olympic Park Institute recognizes the benefits of integrating the classroom experience with the OEE experience. In fact} OPI has an entire webpage dedicated to providing links to resources and curriculJ that enhance curricular integration between the classroom and OP!. The integrative ideas are as follows:

(1) Environmental Science Activity Kit Web-Link. Olympic Park Institute provides Jinks to three websites that sell activity kits and classroom supplies for environmental science related activities.

(2) Vocabulary and Species Lists. Olympic Park Institute provides a link to a list of vocabulary relevant to the OPI experience as well as a link to a list of plants and animals commonly found at OP!.

(3) Books and Web-Resources. Olympic Park Institute provides a link to relevant Internet resources and an annotated bibliography of 30 relevant books. The books are grouped into the following themes: general reference, earth sciences, marine science, plants and animals, and pioneer and Native American history.

(4) Pre-Trip Curriculum Ideas. Ten pre-trip lesson plans are grouped into nine different categories including: preparing for outdoor exploration, art, cooperation and teamouilding, critical tninking and problem solving, mathematics, observation activities, physical education}science, and writing. Each lesson plan is thorough and well-organized. Each includes target grade level, expected lesson duration, goals and learning objectives, background infor:11ation, materials} procedures} extensions, as well Washington State Essential Academic Learning Requirements covered.

(5) Post-trip Curriculum Ideas. The OPI website posts two thorough post-trip lessons as well as four discussion questions and four observation activities. All are designed for classroom teachers to build on the OPI experience. OPt has yet to evaluate whether, or to what extent, teachers use pre-trip and post-trip curriculum ideas.

(6) Teacher Planning Questionnaire. Two pages of this five-page Teacher Planning Questionnaire are dedicated to asking teachers about curricular connections between OPI and the classroom.

Mountain School (NCI)

The North Cascades Institute (NCr) is located on the shores of Diablo Lake in North Cascades National Park. The institute hosts family getaways, summer youth programs, a volunteer stewardship program in partnership with the U.S. Forest Service, a Masters of Education graduate program in partnership with Western Washington University, and an OEE program for middle school students termed "Mountain School". Mountain School works primarily with fourth through sixth grade students who participate in a program called Ecosystem Explorations that introduces students to diverse ecological communities in the North Cascades. Mountain School also serves some seventh through twelfth grade student groups who participate in a program called "Field Science and Leadership" that provides students with firsthand experience with scientific forestry equipment and field study techniques. These students follow either a water quality or a carnivore track Most ufMountain School's OEE groups come for three days and two nights, but they may elect to come for four days and three nights.

The majority of Mountain School's instructors are graduate students simultaneously obtair.ing a Masters of Environmental Education from Western Washington University. The North Cascades Institute does not compensate these instructors monetarily, but rather with graduate credits. Additionally, Mountain School hires two intern instructors and two North Cascades Park Rangers each season to instruct the OEE student groups. The Park Rangers meet each incoming

group at the National Park's visitor center for a tour and a scavenger hunt immediately prior to their arrival at the North Cascades Institute.

Just as the Camp Colman, IslandWood, and OP] websites and OEE directors explain their interest in providing students with an experience that extends beyond the three days at camp, so too does Mountain School's website and OEE director. Mountain SC!'100l'S methods of promoting integration between OEE curriculum and classroom curricula include the following:

(1) Pre- and Post-Trip Curriculum Resources. These can be found **in** the Mountain School Teachers Guide; they are not available on-line. Rather than providing specific lesson plans, the Teachers Guide directs teachers to the following curriculum guides and websites: *Living with Mountains, Teaching for Wilderness, Project Learning Tree, Forests of Washington,* and *Project WILD*. It encourages teachers to build a unit about mountain and forest ecosystems using the ideas those resources provide. Additionally, the Teachers Guide lists many of the activities and concepts covered during Mountain School so that teachers can introduce and build upon them

(2) Curriculum based on EALRs. Mountain School's webpage has a link to a 26-page document that charts Washington State's Essential Academic Learning Requirements (EALRs) for fifth grade students in reading, writing, communicatio;1, mathematics, science, history, geography, civics, economics, arts, and health and fitness. The document outlines the Mountain School activities that address each EALR.

(3) Mountain School Coordinator Visits School Pre-Trip. The Mountain School Coordinator visits every school pre-trip. These visits include a pre-trip slideshow to introduce students to Mountain School and the North Cascades Nationai Park, as well as a question and answer session with students. There is also a curriculum component; the Mountain School Coordinator introduces students to the concepts "biotic" and "abiotic," and talks with students about how all things are connected. Sometimes instructors visit the schools along with the Mountain School Coordinator.

(4) Students Write Postcards to Themselves. On the last day of Mountain School students write postcards to themselves about their experience. These postcards are returned to the students months later during the post-trip visit.

(5) Mountain School Coordinator Visits School Post-Trip. Mountain School staff visit over 90% of participating schools post-trip. During these visits they bring each student the postcard they wrote to themselves at Mountain School as well as a letter from North Cascades National Park. They answer students' questions about present Mountain School happenings, and talk with students about their memories of their Mountain School experience. Currently follow-up curriculum *is* not apart of post-trip visits, though the Mountain School Coordinator is considering adding a curriculum component in the future.

(6) Student lournals. Mountain School provides all students with journals.

OEE DIRECTORS

As a result of my interviews with OEE Directors DO (lslandWood), KH (Olympic Park Institute), lC (North Cascades Institute), and MH (Camp Colman), I came to understand the range and scope of their definitions of successful curricular integration, as well as the challenges and barriers that limit curricular connections between these OEE programs and classrooms. My interview with and verbally administered survey ofMH (IslandWood) was particularly informative. [gained insight into the present reality of Camp Colman's curricular connections with participating classrooms, the level and scope of MH's interest in expanding curricular connections in the future, her reasons for preferring certain types of integration over others, and the factors currently hindering curricular connections. These findings are presented below.

Definitions of Successful Curricular Integration: DEE Directors' Perspectives

Interviews with DO, the Head of IslandWood's Graduate Program, KH, the Education Director at Olympic Park Institute, MH, Camp Colman's OEE Director, and lC, the Coordinator of North Cascades Institute's Mountain School, revealed four

similar and telling perceptions of "successful curricular integration". The leaders at all four OEE institutes stressed the importance of forging "connections" between the residential OEE experience and life at school and at home. IslandWood's DD noted, "The important thing is that the IsIandWood experience is not isolated. The important thing is that it is *connected* to the students' everyday lives and to their classrooms" (DD, 2009). The Olympic Park Institute's KH voiced a remarkably similar sentiment: "We don't want the residential experience at OPI to be a bubble for students. We want the OPI experience to *connect* to students' home-lives and school-lives" (KH, 2009). Camp Colman's MH added, "We want to instill students with knowledge and concern for the environment that transcends camp and *connects* to school and home (MH, 2009). Mountain School's JC noted, "When the Mountain School experience and the classroom experience are *linked,* the learning the kids do is expanded so much" (JC, 2009). Clearly, an OEE experience that is isolated from the classroom experience describes the antithesis of successful curricular integration and a successful overall outdoor school program.

Three of the four OEE leaders not only emphasized the importance of bridging OEE curricula and classroom curricula, but they underscored the relationship between degree of curricular integration and the duration of the program's impact on students. Mountain School's JC stated, "lfwe want to Jffect the kids' *long-term* beliefs and behaviors, we have to connect their Mountain School experience to their home and classroom experiences" (lC, 2009). IslandWood's DD concurred: "]n order to impact the kids *long-term,* we aim to make the IslandWood Experience part of a year-long learning progression" (DD, 2009). Although these two OEE leaders did not define "long-term," MH of Camp Colman suggested that the impact of the OEE experience could last a lifetime. "We want kids to have experiences in an outdoor setting that create a lifelong connection to and respect for the natural world" (MH, 2009).

Interestingly, three of the four OEE leaders intimated that, ultimately, the classroom teacher plays a significant role in fostering curricular connections for students; they suggested that OEE institutions should work to support teachers in this endeavor. IslandWood's DD stated, "Our goal is to support teachers in making connections between IslandWood and the classroom" (DD, 2009). The Olympic

Park Institute's KH described the unique but complementary roles of classroom teachers and OEE staff stating, "Ideally our curricula would support teachers' goals, and classroom curricula would prepare students for OP!" (KH, 2009). Camp Colman's MH pointed out the complementary roles of not only classroom teachers and OEE staff, but parents as well. "Successful curricular integration would *involve* teachers running preparation *activities* pre-trip and reflection and extension *activities* post-trip, Camp Colman integrating concepts from the classroom into the OEE setting, and then parents talking with their children about the camp experience so parents and kids can share and learn together" (MH, 2009). In order for the OEE experience to maximally impact students' learning and growth long-term, it is important to promote communication and partnership between students, teachers, OEE staff, and parents.

The OEE leaders I interviewed described multiple benefits of successful curricular integration; two of the leaders stressed the academic benefits. The head of the IslandWood's graduate school *believes* that successful curricular integration encourages students to "use what they Jearn [at IslandWood] in their daily lives". She believes that successful curricular integration enhances academic Sliccess as well. Most likely the kids are "more successfu1on their science and social studies WASLS" as a result of curricular integration between IslandWooc and the classroom (00,2009). The Oly:npic Park Institute's Education Director agreed that curricular integration augments academic performance and critical th:nking skills. "It is neat when schools really academically prepare their students for OPI because their *level* of critical thinking and academics starts at a much higher *level* and we can take them so much further [than we could otherwise]" (KH, 2009). Clearly, the leaders of both or! and IslandWood recognized that curricular preparation and follow-up in the classroom expand knowledge and heighten academic performance.

The leaders of Mountain School and OEE Camp Colman focused less on the relationship between curricular integration and academic performance, and Inore on the relationship betweei1 curricular integration and long-term impact on beliefs and behaviors. Camp Colman's OEE director explained that OEE Camp Colman seeks to foster respect in students, a respect that extends beyond the OEE experience to home-life and school-life. When teachers and parents reinforce and

expand upon the OEE experience pre- and post-trip, the positive value and *behavior* influences ofOEE are heightened.

> "Our curriculum focuses on outdoor education, environmental/science education, and challenge education, but throughout all of it, we emphasize the underlying values of respect for self, respect for others, respect for the natural environment, and respect for the broader community.. .. When teachers integrate the camp experience into their classrooms the impact of the program will be stronger. We want kids to leave OEE and go home and remember the respects and make positive choices in their *lives.* Teachers and parents can help" (MH, 2009).

Camp Colman's OEE director recognizes that academic *achievement* is important and she wants to foster that achievement *via* curricular integration between OEE and the classroom, but more than anything she *believes* that OEE is an experience that fosters respect and self-awareness.

Challenges and Barriers to Integration: OEE Directors' Perspectives

Leaders of OEE programs described a *variety* of barriers to implementing and deepening curricular integration. The primary challenges for all programs were time and money. [t takes time to effectively communicate with and understand the unique needs of each school group, and it takes time to tailor curricula accordingly. It also takes time to develop pre-visit and post-visit curricular suggestions for teachers to implement in their classrooms. Because time and money are limited resources for all OEE programs, OEE staff have to set priorities. All OEE leaders I spoke with avidly support curricular integration between OEE and the classroom, but implementation of integrative measures is just one of many OEE priorities (DO, 2009; lC, 2009; KH, 2009; MH, 2009). The director ofOEE Camp Colman stated:

> "The biggest barrier to curricular integration is time. Time is number one. From February through November I am go, go, go; that only gives me a couple of months in December and January to catch my breath and develop the program. Money is another barrier though. This summer I am going to write grants to try to get money to develop a new plankton class. I'm not sure how much grant money is available right now though" (MH, 2009).

Time and money were primary limitations for all program directors.

In addition to time and money, two OEE leaders identified "instructor quality" as a potential limitation to successful curricular integration. Camp Colman's OEE director, MH, spoke extensively about the importance of mature, experienced instructors in the implementation of successful curricular integration. Fall 2008 was MH's first season as Camp Colman's OEE director. When she arrived she noticed that:

> "Her instructors were the youngest OEE instructors she had ever worked with or seen in any OEE program. Half of them weren't even out of college. A lot of them came to Camp Colman as summer camp counselors and stayed on as OEE instructors. They were great camp people, very dedicated to kids, and very hard-working. They just didn't have a strong science or environmental knowledge base, or the maturity, life-experience, or teaching experience that a lot of other OEE staff have" (MH, 2009).

Accordingly, MH hopes to enhance the quality of her staff next season by hiring instructors with at least a bachelor's degree and some field and teaching experience. Camp Colman's OEE director recognizes that instructor qualifications are key, but so too is effective instructor training. Thus, MH plans to increase pre-season instructor training time from one week to two-and-a-halfweeks and provide trainings and evaluations throughout the season as well. Camp Colman OEE Director, MH, intimated that as instructor quality increases, so too does successful curricular integration because quality, experienced instructors can find out what each group of kids already knows and then build upon that base (MH, 2009). The Head of the Graduate Program at IslandWood concurs that high-quality instructors are invaluable in implementing successful curricular integration.

> "At IslandWood, the kids stay with the same instructor all day each day, so the instructor has time to get to know the kids and build an experience. In my opinion, nothing outweighs the value of an instructor who really takes the time to get to know her students. One of the hardest things to teach new educators is how to read students and how to recognize what is working for them and what is not. Instructors need to learn to find out what kids already know and read what they are most interested in. They need to be able to appeal to the kids' interests and achieve their goals as educators simultaneously. That is the art of teaching. Our graduate students get better and better throughout their year here. They improve in part because of practice and in part because they apply the theory they learn in graduate school to their teaching. Every week, faculty mentors observe them teach for at least an hour, give them some

> feedback, and discuss the teaching experience with them" (DO, 2009).

There is always more that an OEE organization can do to tailor its program to individual groups, but quality, experienced instructors playa key role.

In addition to limitations of time, money, and instructor experience, informational limitations significantly hinder curricular integration between OEE programs and the classroom. Informational limitations take two forms. First, the OEE staff lacks important information about the school groups (including information about group dynamics, classroom curricula, and teacher goals and objectives). The education director ofOPI noted that OPI's fieid educators are unable to visit schools pre- or post-trip because the classrooms are too far away.

> "I think one huge challenge with regard to successfully integrating OPI and classroom curricula is that we are far away from the classrooms. We are not in the same watershed. We are in a national park which has a different kind of scenery form student's homes. A lot of our staff haven't seen the places our students are coming from. I think that is a huge challenge. Our educators don't know what it is like in Port Orchard, for example. We have to have some base knowledge on which to build connections, and building that base knowledge is one of our biggest challenges" (KH, 2009).

The Olympic Park Institute is nestled at the north of Olympic National Park such that visiting schools in the greater Seattle area requires four hours of driving each way. This is an unreasonable distance due to time and money constraints (as described above). Not only OPI's director, but the Mountain School coordinator and the OEE Camp Colman director, also lamented their lack of information about incoming schools. Both MH of Camp Colman and JC of Mountain School commenced their respective jobs in Fall 2008, and thus have not yet had the opportunity to get to know all of the teachers and their classroom curricula. Mountain School's JC notes:

> "We do not know a whole lot about the schools. We know their medical information and a little bit about where they are coming from, but not much more" (JC, 2009).

Over the next several years both MH and JC expect to grow to know each teacher and school community. Explaining her goal, MH recalls:

> "At Nature's Classroom in Ohio where I was previously an instructor, they know what every school wants like the back of their hand and they are always great at communicating this information to instructors. It is amazing. Over time I hope to come to know the teachers and their goals as well"(MH, 2009).

Even though MH and JC recognize that they will come to understand teachers' unique objectives over time, they don't want to "just sit back and develop connections slowly over the years" (MH, 2009). Rather, MH hopes to "nail down what each school wants from the get-go" (MH, 2009). However, gathering comprehensive information about school groups and classroom curricula from some teachers can be challenging. "Some teachers are *very* open to meeting with me. These teachers diligently complete their paperwork on time too. Other teachers are much harder to get in touch with" (MH, 2009). Both the directors of Mountain School and OEE Camp Colman recognize the value of classroom visits for communicating with teachers and better understanding (and thus developing connections with) classroom curricula. Although the Mountain School director already visits most schools, she would like instructors to visit the schools as well. Camp Colman's MH is also interested in bringing instructors along on pre-trip *visits.* In this way, instructors and students can meet one another, instructors can find out what the students already know and what the teacher would like them to learn at camp, and instructors can present introductory curricula and initiate teambuilding games.

Clearly OEE staff lack information about the curricula and group dynamics of participating schools pre-trip; a second informational limitation stems from a lack of formal evaluation and assessment. Without such assessments, OEE programs do not know whether or how curricular integration is taking place, or how effective those integrative measures are. In fact, KH at OPI states:

> "We don't have a formal assessment in place [to find out how the OP] Field Science Program connects with classroom curricula]. I *have* no idea what percentage of teachers engage in pre-visit preparations and post-visit follow-up activities. Interestingly, a new school arrived today that completed all of the pre-trip activities that we suggested on-line. That is *very* unusual, I think" (KH, 2009).

The head of IslandWood's graduate program indicates that formal *evaluation* of curricular connections between IslandWood and the classroom (which IslandWood terms the "School Partnership Program") is likewise limited:

> "We *have* a big assessment grant but it is not specifically focused on our School Partnership Program. I think feedback from teachers about whether and how the School Partnership Program is working has beerl pretty informal so far" (DO, 2009).

Despite the explicit lack *offormal* evaluations of curricular connections between the OEE experience and the classroom, all four outdoor schools do engage in some *informal* assessment of curricular integration. First, all programs ask teachers to complete a pre-trip packet which includes questions about how OEE connects with student learning in the classroom (YMCA Camp Colman, 2009a; Olympic Park Institute, 2009b; North Cascades Institute, 2009b; and lslandWood, 2009b). Unfortunately, not all teachers answer these questions.

> "Half the teachers fill it out and half don't. And some of those who do fill it out don't do so *very extensively*. They just say 'OEE supplements our science kits.' Other teachers are great about providing information and really go into detail. This really helps us provide a program that caters to their school, their needs, and their goals" (MH, 2009).

In addition to pre-trip questions about curricular connections, all four programs ask teachers to complete post-trip written *evaluations* and post-trip exit interviews. At Camp Colman, teachers complete the post-trip written evaluatiors during IU'1ch on the last day of camp. The evaluations are less informative than they could be, MH notes. "J don't think teachers *have* enough time or focus at lunch that day to really think about the questions and write thorough answers" (MH, 2009). During the exit interviews, teachers meet with OEE directors to *give* immediate *verbal* feedback about the program. Currently Camp Colman's OEE director does not specifically ask teachers about their plans to forge connections between OEE and the classroom, but she is interested in asking such questions in the future. Although pre-trip questions, eXit interviews, and post-trip teacher evaluations provide OEE directors with some information about the scope and extent of curricular integration between OEE and the classroom, the information provided is limited because curricular integration is not typically the focus of the questions and because many teachers do not answer the questions thoroughly. Without formal assessments of curricular connections

between OEE and classrooms, OEE programs cannot reliably determine the relative impact of different integrative activities. Accordingly, OEE programs have no means to determine which integrative measures to adopt and which to scrap.

In addition to limitations of time, money, instructor experience, and information, curricular integration between OEE programs and the classroom is challenging because it depends upon a partnership between OEE staff and classroom teachers. OEE programs can encourage teachers to implement curricular connections, but the classroom teachers must do their part too. The education director at OPI states:

> "Not every teacher uses our on-line activities. In fact, I don't think very many schools actually use them. But some schools go through all of the integrative curricula we provide" (KH, 2009).

All four OEE programs provide teachers with a list of suggested classroom activities related to the OEE experience (though these suggestions range from thorough and well organized Jesson plans complete with target grade level, expected lesson duration, goals and learning objectives, background information, materials, procedures, extensions, as well Washington State Essential Academic Learnmg Requirements (OPI and IslandWood), to shorter lists of less-developed suggestions (Mountain School and Camp Colman)). However, even though all four OEE programs provide integrative suggestions, curricular integration cannot succeed unless classroom teachers are likewise dedicated to making it happen.

Finally, a significant challenge to curricular integration is the relationship between the varying curricular requirements of schools, and the limited and unique programs that OEE institutions offer. Schools have to teach specific units to students and those units mayor may not have explicit connections to the OEE programs the institutions offer. Although Camp Colman would like to provide curriculum that connects with the classroom curricula of participating school groups, Camp Colman also recognizes the importance of "taking advantage of the resources we have here at camp. We don't have a pond or a lake or a river in our backyard, but we have a salt-water lagoon and a beautiful beach with an outdoor marine center" (MH, 2009). She wants to develop OEE curriculum that takes

advantage of Camp Colman's unique resources and ecosystems; unfortunately not all classrooms are studying curricula related to these resources and ecosystems.

In order to successfully expand curricular connections between OEE Camp Colman and the classroom, there must first be a clear understanding of the present challenges and the reasons for these challenges. As delineated above, the primary challenges include limitations of time, money, and information; instructor inexperience; and less than optimal communication between OEE staff and classroom teachers.

Interest in Expanding Integration in the Future: Camp Colman's Perspective

When I interviewed MH (Camp Colman's OEE director) and administered the verbal survey (see Appendix C), I discovered that MH is very much interested in augmenting and deepening curricular connections between OEE and classrooms.

In order to determine MH's specific integrative inclinations, I asked her to rate her interest in 19 integrative ideas on a scale of 1 to 5, 1 indicating no interest (and 5 indicating extensive interest. MH gave sixteen ideas a 5; she gave the other three a 4. Clearly, MH is extremely interested in fostering a wide variety of curricular connections. However, I wanted to determine not only MH's interest in each idea, but also her perception of the feasibility of each idea. Accordingly, I asked her to rate her interest in the 19 integrative ideas again, this time taking feasibility into account. A summary of the results follows (see Table 2). The integrative ideas highlighted in red identify the ideas that the teachers I interviewed rated at least a 4 (on average) on the same 1 to 5 scale.

Camp Colman's OEE Director's Interest in Various Integrative Ideas

ID	Integrative Idea	MH's Rating
A	**Pre/Post Curricular Ideas Posted on Web**	**5**
R	**Related Books & Websites Posted on Web**	**5**
M	**Phone Conversation w/ OEE Teachers Pre-Trip**	**5**
P	**Instructor Attends School's Parent Night**	**5**
Q	**Related Vocabulary and Species Posted on Web**	**5**
K	More Extensive Post-Trip Evaluation	5
L	In-Person Conversation with Teachers Pre-Trip	5
I	"Dear Camp Colman" Letter	5
J	More Extensive Pre-Trip Goals Sheet	5
H	Kids Conference	5
O	**Field Journal**	**4**
N	Students Send Postcard to Selves	4
E	Teachers Check-Out Activity Kits	4
G	Teacher In-Services	4
D	**Instructor Visits School Post-Trip**	**3**
C	**Instructor Visits School Pre-Trip**	**3**
S	**Stewardship Project**	**3**
F	On-line Teacher Blog	3
B	Pre/Post Curricular Ideas Mailed	2

Table 2. This table summarizes the ratings that MH, Camp Colman's OEE director, assigned each integrative idea in the survey. The left column provides the letter that corresponds to each survey question (see Appendix C). The middle column briefly describes each integrative idea. The right column provides the rating MH gave on a scale of 1 to 5; 1 indicating "no interest" and 5 signifying "extensive interest". The integrative ideas I highlighted in red are the ideas that the teachers I interviewed rated at least a 4 on the same 1 to 5 scale.

During the interview, MH explained her reasons for many of her answers. I have summarized these below. Note that each idea is labeled with the letter that corresponds to the respective question in the verbal survey (see Appendix C).

(A) Pre/Post Curricular Ideas Posted on Web. (MH's Rating = 5). In winter 2009, MH developed and posted integrative curricular ideas for teachers on the OEE Camp Colman website for the first time. "I think giving teachers access to ideas for pre-trip preparation and post-trip follow-up is really going to help make curricular connections a reality" (MH, 2009). Currently, the six suggestions, though helpful, lack substance; each consists of a mere phrase or a couple of sentences. Camp Colman's director would like to add to and expand upon these ideas in the future; she is interested in learning what other OEE programs provide and to what extent teachers find the suggestions and lesson plans useful.

(B) Pre/Post Curricular Ideas Mailed. (MH's Rating = 2). Camp Colman's OEE director prefers to post the ideas on-hne (see "A" above) because it saves time (no printing, compiling, stapling, or mailing), resources (no paper), and money (no postage). Also, if the ideas are posted on-line, "teachers won't have to worry about loosing the piece of paper" (MH, 2009).

(C) Instructors Visit School Pre-Trip. (MH's Rating = 3). According to MH, "This would be really cool! It would improve our program quite a bit" (MH, 2009) She is not concerned about the added transportation costs associated with instructor visits. Rather, she states, "My main concern is that we have a limited number of staff and we usually need most or all of them on-site" (MH, 2009). After further thought MH proposed the idea of designating one week of pre-season instructor training to these school visits.

(D) Instructors Visit School Post-Trip. (MH's Rating = 3). Like pre-trip visits, post-trip visits would be logistically challenging because all instructors are tynically needed on-site. However, during weeks with fewer than average students on camp, MH believes such visits could be arranged. "It would be somewhat difficult to do logistically, but it would benefit students and our instructors would enjoy it" (MH, 2009).

(E) Teachers Check-Out Activity Kits. (MH's Rating = 4). OEE Camp Colman's director believes that quality activity kits would take her a year or two to implement because she only has program development time in December and January. She is curious what percentage of teachers find other OEE programs' activity kits useful because she does not want to devote significant time and energy to a project that teachers do not utilize and appreciate.

(F) On-line Teacher Blog. (MH's Rating = 3). MH mentions that she has limited control over the OEE Camp Colman website; it is designed and controlled by the greater Seattle YMCA. She notes that she could ask the greater Seattle YMCA to add a teacher blog to the Camp Colman website, but such changes are typically slow.

(C) Teacher In-Services. (MH's Rating = 4). Teacher in-services would be feasible for MH in Oecember, January, and April. "I feel like we could give teachers a lot of suggestions of simple activities they could do with students pre-trip. These

activities would give students background information so that Camp Colman instructors could go deeper into topics with students. . . . Besides, [during in-services] we could get teachers more excited about the information. My best teachers have always been the ones who are so passionate about their subject" (MH, 2009).

(H) Kids Conference. (MH's Rating = 5). "Oh, that is cool. To be honest, it would probably be less work on our part and more on the teacher's part. We are providing the background and the impetus and the space; the teacher is making the project happen" (MH, 2009). Camp Colman's director is interested in initiating such a conference, but she wonders whether many teachers would *have* the time and dedication to make it happen.

(I) "Dear Camp Colman" Letter. (MH's Rating = 5). "I am very much interested in asking students to write us letters pre-trip. Our instructors are always really excited to get letters from students. It makes them feel like what they are doing is valued" (MH, 2009). Not only does MH think instructors would enjoy hearing from students, she appreciates that student letters would enable instructors to learn about students pre-trip through students' own voices and thus better prepare to teach each group. She wonders whether the letter should be open-ended or whether she should ask students to respond to specific prompts.

(J) More Extensive Pre-Trip Goals Sheet. (MH's Rating = 5). In winter 2009, MH added a "goal page" to the Teacher Packet. This page asks teachers to describe curricular connections between Camp Colman and their classroom and to identify their Camp Colman goals. Although not all teachers complete this form, and not all who complete it do so thoroughly, MH says she gains important information (that she would not otherwise have) from those who take the time to write thoughtful answers. She would like to ask more probing questions about teachers' goals and classroom curricular connections.

(K) More Extensive Post-Trip Evaluation. (MH's Rating = 5). Camp Colman's OEE director is considering asking teachers to complete post-trip evaluations after they return to their classrooms rather than during lunch on the last day of camp. Hopefully this change will allow teachers the time and focus to write more

thoughtful answers. "We want quality feedback and I think we need to give teachers more time to think and write [posHrip evaluations]" (MH, 2009).

(L) In-Person Conversation with Teachers Pre-Trip. (MH's Rating =5). "I would love to go to each school and meet with teachers pre-trip.] think it is so important that j am on the same page as the teachers. In the OEE Teachers Packet] encourage teachers to request in-person visits, but maybe] need to be more proactive about setting these up with teachers" (MH, 2009). MH believes that :n-person visits are especially important with head teachers she has not worked with before; next year MH will have experience working with many of the teachers, so pre-trip, in-person conversations will be less important, in her opinion.

(M) Phone Conversation with Teachers Pre-Trip. (MH's Rating =5). Conversations via phone are more time efficient than in-person conversations. She would like to have a phone conversation with each head teacher she does not meet with in person.

(N) Students Send Postcard to Seives. (MH's Rating = 4). Camp Colman's OEE director is interested in exploring this idea. She is curious when other OEE progrdms allow students to write open-ended reflections on their postc2rds or whether they ask students to respond to specific questions.

(U) Field lourna!. (MH's Rating = 4). MH noted that half of the schools that come to OEE Camp Colman already requ;re their students to bring journals. Some of these schools ask students to bring hlank Journals and openly reflect on the experience; other schools design journals with specific questions and activities. Many school leave her an extra copy of their journal and she has been saving them. MH was extremely II1terested in creating a Camp Colman journal but noted that it would be difficult to find the time to develop such a journal in the near future. She was also concerned about the cost of mailing all of the journals. Subsequently, MH came up with the idea of putting the journ2:s online such that interested teachers could download and print them on their own time.

(P) Instructor Attends School's Parent Night. (MH's Rating =S). Camp Colman's OEE director already :Jresents Illformat1on about the OEE experience at the parent nights of ;,1] ;chools that request her presence (about 35% of participating schools).

It is difficult for MH to combine classroom visits and parent night presentations into one school visit because schools are typically dismissed at 3pm and parent nights do not begin until 6pm or 7pm. "This *leaves* 3 to 4 hours of wasted dead time in-between" (MH, 2009).

(Q) Related Vocabulary and Species Posted on Web. (MH's Rating = 5). In winter of 2009, MH added a curriculum guide with class abstracts to the OEE Teacher Packet. The guide includes two to four "main vocabulary and concepts" for each of the 23 classes. She has not defined the vocabulary words in the Teacher Packet but recognizes that compiling a list of key vocabulary and definitions would be a simple "cut-and-paste" operation because the Camp Colman Instructor Manual already has a glossary in the back. Although MH does not *have* a list of common Camp Colman species, she *believes* that creating one would be relatively simple.

(R) Related Books & Websites Posted on Web. (MH's Rating = 5). "This is a great idea and it would be easy to implement. We already have tons of books here at camp that we could add to the list" (MH, 2009). MH was enthused that such a list would not only benefit teachers and students, but new instructors as well. Her new hires last season wanted access to resources and lesson plans before they came to Camp Colman. "Our new instructors would find a list of relevant books and websites really helpful" (MH, 2009).

(S) Stewardship Project. (MH's Rating = 3). Although MH loves the idea of a stewardship project because it would help students connect their OEE experience with their school and community, she feels she does not have the time to develop such a program at present. She is, however, excited about implementing a Camp Colman stewardship project in fall 2009 whereby schools adopt a Camp Caiman tree or section of camp and vow to maintain it ivy-free. She plans to put a copper leaf cutout with the school's name on the tree they adopt. Each year students from the school could rip ivy off their tree during open recreation time.

After I asked MH to rate and discuss her interest in the previous 19 integration ideas, MH mentioned that the suggestions in the survey made her realize the extent to which OEE Camp Colman can expand the resources they provide teachers.

> "Getting knowledge, tools, information, and *activity* ideas into teachers hands will help pre-trip and post-trip connections happen. There were several questions that touched on that. I guess it was a false assumption, but I assumed that the teachers who are excited about camp know what they are doing and *have* the connections figured out. But in reality, the teachers are constantly seeking to improve what they are doing too" (MH, 2009).

Clearly, MH recognizes the importance of helping teachers forge OEE-classroom connections. She is interested in and motivated to implement some of the *survey* suggestions.

In addition to implementing some of the *survey* suggestions, MH noted two positive program changes that she plans to make in the next year. First, she plans to work to expand OEE Camp Colman's "Friends of Camp" list.

> "At each school there are a few parents or chaperones or teachers who are particularly gung-ho about camp. They are so appreciative of camp and what it offers and they are so invested in camp. We want to start taking down their contact information so that we can keep them updated and invite them to alumni barbecues and volunteer nights and other events. We want to keep them interested and spread the word about Camp Colman" (MH, 2009).

An expanded "Friends of Camp" list could aid curricular connections between OEE and the classroom because it could provide Camp Colman with the funds and volunteers necessary to make more extensive curricular connections a reality. In addition to expanding the "Friends of Camp" list, MH is working to provide participating schools with more information about where they can find scholarship and grant money for OEE. Not only will this enable schools with shrinking budgets to cortiilue to send students to OEE, but it could provide teachers with a little extra money to develop curricular connections between OEE and the classroom.

TEACHERS/COUNSELORS/PRINCIPALS

My interviews with OEE directors provided insight into the realities and challenges of curricL;ar connections between OEE and classrooms, including MIl's specific curricular integration interests. In order to compare and contrast OEE directors' insights regarding curricular integration with insights from teachers, I

interviewed eight teachers, principals, and counselors who took their students to GEE Camp Colman in fall 2008.

Teacher Demographics

A summary profile of the teachers, principals, and counselors interviewed follows (see Table 1). I will not refer to these school leaders by name to maintain confidentiality. Rather, I will identify each as "the principal at School #1", or "the teacher at School #2", or "the teacher at School #3" etc.

Summary Profile of Interview Subjects

Titles of Subjects:	6=Teach; 1=Princ; 1=Couns
# Years School Leadership Experience:	18 (+/- 8) years
# Years Bringing Students to GEE Programs:	9 (+/- 2) years
# Years Bringing Students to GEE Camp Colman:	6 (+/- 2) years
% Public School vs. Private School Leaders:	86% Public
Grade Level of Students Brought to Camp Colman:	5=Fifth; 1=Sixth; 1=Mid. Sch.
Level of GEE Training Before Becoming a Teacher:	2(+/-1)
Level of GEE Training Since Becoming a Teacher:	3(+/-0)
Level of OEE-Classroom Curricular Integration:	3 (+/-1)

Table 3. This table provides a summary profile of the eight school leaders I interviewed. The last three numbers reflect school leaders' self-ratings on a scale of 1 to 5. All numbers in parentheses denote standard deviations.

Curricular Integration as it Presently Exists: Teacher Perspectives

The school leaders I interviewed described a wide array of curricular connections between Camp Colman and classrooms. After the interviews, several teachers mailed me handouts, lesson plans, and student work related to the OEE Camp Colman experience; these enabled me to see and better understand the scope of the integrated curriculum they described. I will begin by describing science curriculum integration at each school; I will then describe non-science curriculum integration at each institution. Finally, I will describe key non-curricular OEE-classroom connections that teachers routinely discussed without prompt.

Science Curriculum Integration

School leaders at five of the seven participating schools indicated that the OEE Camp Colman experience aligned with their science curriculum to some extent.

School #1 is a public elementary school in Everett, Washington, bringing fifth grade students to Camp Colman, sixty-two percent of whom qualify for free lunch under the National School Lunch Program. I interviewed the school principal. During my interview I discovered that the principal at School #1 believes OEE Camp Colman to be a stand-alone program without curricular integration, though she touts the potential benefits of enhanced curricular integration. "At my school, scores on the science WASL [Washington Assessment of Student Learning] are abysmal ... . My kids are scoring thirty-two percent on average. That is horrific! If the camp experience can grow from an isolated three day experience to a continuum of learning throughout fifth grade, the kids will see the connection between the camp and the real world they will inherit" (School #1, 2009). Although she does not directly say that students will perform better on the science tests if the connection between camp and the classroom is heightened, she implies that this is likely to he the case.

Despite the principal's belief that OEE-c1assroom curricular integration is laCking, one of the school's fifth grade teachers at School #1 noted some connections between OEE and science class. Each year, these fifth grade students complete two Full Operations Science System (FOSS) kits, a science curricula developed for kindergarten through eighth grade students by the Lawrence Hall of Science at University of California, Berkeley. The kits emphasize hands-on, inquiry-based learning, and each is designed to be carried out over one school term. For grades three through six, there are twenty FOSS kits (Lawrence Hall of Science, 2008). Fifth grade students from School #1 explore the "Landforms" and "Variables" FOSS kits [Mukilteo School District 6,2009; School #1, 2009). Via the Landforms kit, these students gain experience making and reading maps. They also learn about concepts such as erosion, deposition, elevation, and contour. Because School #1 attends Camp Colman early in the school year, they do not begin these science kits until after returning from camp. "We weren't able to pre-teach any of the concepts or anything like that" [School #1, 2009). However, the teacher makes a point of talking to the

kids about erosion during their free time "beach walk" at Camp Colman. "This way, our kids can better understand the concept of erosion when we do learn it in the classroom because they will be able to think back to what they saw with their own eyes at camp" (School #1, 2009).

Schoo! #2 brings students belonging to a significantly higher socio-economic group than School #1. School #2 is the only private school included in my study. It is located in an affluent suburb of Seattle and charges an annual tuition of $19,700. This school engages sixth grade students in two OEE programs each year: OEE Camp Colman (for one-night and two-days in September), and OPI (for four-nights and *five-days* in the spring). For this school, "Camp Colman is just as much about an *overnight* retreat away from school as it is about science education" (School #2, 2009c). *However,* curricular integration between the OEE experience and the classroom is important. "I feel like the experience at Camp Colman is richer and more relevant when the kids *have* some activities to get them ready for the trip" (School #2, 2009c). Despite this language arts teacher's recognition of the benefits of curricular connections, he admitted, "I probably integrate the Camp Colman experience into my curriculum less than the science teacher does" (School #2, 2009c). Referencing the science teacher's efforts to connect OEE and classroom curricula, he stated, "Our science teacher's big thing is getting the kids ready for a type of science they *have* not had before. To get the kids ready for the outdovr environmental education experience, he creates a field journal and walks the kids through it. But there is not time for much more [because the Camp Colman trip is the second week of school]" (School #2, 2009c). The eight-page journal asks students to think critically about and reflect in writing upon Camp Colman classes including the climbing wall, forest ecology/micro forest, and beach walk/marine invertebrates. After the Camp Colman experience, the science teacher grades the student journals. Examples of journal *activities* include reflective responses to questions about Camp Colman experiences such as "How can the wall be a metaphor for your experience in middle school this year?"; identification, description, and drawing activities such as "name and draw three marine invertebrates and their special adaptations for finding food, protection, and *movement";* and *scavenger* hunt *activities* (School #2, 2009a). At School #2, the sixth grade science curriculum encompasses four units of study: "Puget Sound Geology", "Climatic Zones and

Adaptations", "Puget Sound Weather", and "Planetary Motion" (School #2, 2009b). Interestingly, the Camp Colman curriculum relates to at least one subtopic of each unit. School #2 not only brings sixth grade students to Camp Colman, but seventh grade students as well (such that the seventh grade students arrive at camp as experienced OEE Camp Colman students). One of the school's seventh grade science units relates particularly well to Camp Colman: "Oceanography jMarine and Freshwater Life". Unfortunately, although he assured me that the classroom and OEE curricula overlap, the sixth grade language arts teacher I spoke with was unable to address specific integrative activities between OEE and seventh grade science (School #2, 2009b).

School #3 is a public school on the Issaquah plateau east of Seattle that brings fifth grade students to OEE Camp Colman each year. The students come from a range of socio-economic backgrounds from "low income to fairly well off' (School #3,2009). The fifth grade teacher I interviewed from School #3 believes that "the [Camp Colman and classroom] curricula don't have to be completely linked, but some linkage is important." She considers curricular linkage particularly important not only because it heightens parent and administrative support for the OEE experience, but also because "when we go to camp we miss classroom instruction for three days so we need to be sure that Camp Colman ties into classroom curriculum somehow" (School #3, 2009). Last year the school considered eliminating the Camp Colman experience to save money, but "when we realized that Camp Colman relates to our oceanography unit, we felt better about continuing to take our students to camp" (School #3, 2009). Fifth grade students at School #3 participate in four science modules: "Human Body," "Family Life and Sexual Health," "Simple Machines," and "Oceanography." These modules are taught via science kits deveioped for and by the Issaquah and Highline School Districts. The kits include a variety of labs and assume an inquiry-based approach to learning (Issaquah School Oistrict 411,2009). Interestingly, this teacher chooses not to build curricular connections hetween the classroom and Camp Colman pre-trip. "We start the oceanography unit one week after we return from Camp Colman. We don't tell the kids a Jot about the Camp Colman classes before we go because we want them to be kind of surprised. I guess we could do a bit of pre-teaching but I don't really think it is needed" (School #3, 2009). During the oceanography unit that follows the Camp

Colman experience, students engage in nearly a dozen hands-on activities. Two of the activities that the teacher believes to be most connected to the Camp Colman experience include an activity called "Tides" and an activity called "Adapting to Life in the Ocean." Camp Colman introduces these concepts OEE-style while the students are on the beach observing the tides and while they are touching marine creatures in invertebrate tanks, and School #3 expands on these concepts inside the conventional classroom. Despite her initial denial of pre-trip curricular preparation in the classroom, I discovered upon further inquiry that the teacher *does* engage students in curricular preparations, though in language arts rather than science class. I will describe this teacher's non-science curricular integrations in the subsequent section.

School #4, is an elementary school in North Kitsap County with a significant low socioeconomic student population. Over forty percent of students receive free and reduced lunch under the National School Lunch Program. It is also relatively ethnically diverse; nearly twenty-five percent of students are of Native American heritage. I interviewed two teachers from this school concurrently via speakerphone, both of whom spoke excitedly of curricular connections between OEE Camp Colman and the classroom science curriculum. One teacher noted:

> "Camp Colman curriculum lines up well with the fifth grade science curriculum. We have a yearlong unit called 'Buck Lake' which revolves around a nearby lake [of the same name]. In this unit students learn about things like forests, meadows, and ponds. So Camp Colman goes really well with the Buck Lake unit" (School #4, 2009).

Accordingly to the North Kitsap School District website, one of the main messages of the Buck Lake Unit is that "the earth is our life support system and we need to learn how it works in order to take good care of it"; students also learn that "literally, everything is connected" (North Kitsap School District, 2009). These messages support and are supported by Camp Colman's goal of "encouraging respect for the environment" (YMCA Camp Colman, 2003).

School #5 is an elementary school located in Issaquah, WA serving primarily middle to upper-middle class Caucasian students. Because it is located in the same school district as School #3, it engages fifth grade students in the same four science

modules. The "Oceanography" unit is the science unit most closely connected with Camo Colman's curriculum. "We could do our oceanography unit without Camp Colman but [at Camp Colman] the students look at the ocean, touch creatures in the touch tank, and explore the beach so [Camp Colman] really is an important part of our curriculum" (School #5, 2009). Teachers *have* numerous classes from which to choose at Camp Colman; this teacher selects primarily marine classes "because they match our curriculum" (School #5, 2009). The teacher *believes* that linking Camp Colman curriculum with classroom curriculum is important because "there is not a lot of time. It is great to do fun things like go to camp but these *activities have* to be purnosely fun because there is not a lot of extra time" (School #5,2009).

School #6 is a rural, public elementary school in the Bethel School District. Fifty-six percent of students *receive* free and reduced lunch *via* the National School Lunch Program. The school is not particularly ethnically *diverse.* "Our student body is primarily Caucasian" (School #6). Here, I interviewed the school counselor rather than the school principal because during her nine years at the school, the counselor has been particularly *involved* with organizing and carrying out the Camp Colman trip. When asked whether linking Camp Colman curricula with classroom curricula is important, the school counselor explained that curricular connections are important for two reasons: student learping and administrative parent, and PTA support.

> "Classroom time is really at a premium these days. Integration is important for student learning, but it is also important because it enables us to go on the trip. I cannot imagine being able to go to camp if camp was not a clear extension of our academic curriculum. . . . The principal and the school board and the community might think camp frivolous ... especially hecause there is so much pressure to succeed academically and on the WASL. The PTA supports us generously . . . but much of that is because camp connects *very* well with science standards.. . . While we of course *have* a fabulous time at camp, more importantly, we are learning at camp. We talk about those connections constantly" (School #6, 2009).

Because the school counselor is not a science teacher, she could not describe the sixth grade science curriculum. Furthermore, this was the only school that did not post its curriculum on-line That said, the school counselor was able to explain, in considerable detail, how Camp Colman curriculum connects with the sixth grade

curriculum in other subjects. I will explain the non-science curricular connections in the section that follows.

School #7 is a rural, public elementary school that brings its fifth grade students to Camp Colman. According to the teacher I mterviewed, the school teaches students from a range of socioeCOllOmic backgrounds. "Some of our kids definitely live in poverty. Some are middle or upper-middle class. Mostly our kids are white-bread Americans" (School #7, 2009). Interestingly, this is the only teacher I spoke with who reported no connection between Camp Colman and the classroom science curriculum. This school goes to Camp Colman to promote teambuilding and class bonding. They select a variety of "challenge/communication" and "outdoor" classes, but no "science/environment" classes. When asked whether integrating Camp Colman curriculum and classroom cucriculum is important, this teacher responded, "For us it really isn't because we do physical science, not life science, in fifth grade. We don't do a lot with forest ecology or wildlife or adaptations or any of that" (School #7, 2009).

Non-Science Curriculum Integration

At Schools #1 through #5, science was the discipline in which teachers voiced the strongest curricular connections between GEE and the classroom. However, teachers at three schools (Schools #2, #3, and #6) described some curricular connections in other disciplines as well.

The principal from School #1 was unaware of curricular connections between GEE and Camp Colman. At present she considers Camp Colman a stand-alone experience. In fact, she gave a curricular integration rating of J.5 on a scale of 1 to 5; this is the lowest integration rating that any school leader *gave.* The average rating was 3 *(+1- 1).*

The language arts teacher from School #2 mentioned that he engages his students in a lot of writing exercises about nature and life outdoors. Furthermore, on the school website I discovered that the cross-discipline, yearlong theme for sixth grade students at the school is "adaptation"; for seventh grade students, it is

"cultivation" (School #2, 2009b). The Camp Colman curriculum highlights adaptation in the majority of its "science/environment" classes and cultivation in its garden class, so theoretically connections between Camp Colman curriculum and the school themes could be made **in** science and non-science classes, though I do not Know whether or how these connections play out in practice.

School #3 teaches a poetry unit and asks students to write free verse poems about Camp Colman both pre-trip and post-trip. The teacher shared one of her student's poems with me:

Before:	After:
Camp Colman	Camp Colman was pretty nice
Just a week away	At the dork dance I wore a skirt
I hope it's a blast	Tt was comfortable
Hopefully that's what I think	Hee Hee...
\Vhen it's past	The beds weren't half that bad
Who am I going to hang out with	The food was okay
Who in the classroom	The rock wall as a blast
Who in the cabin	All the activities were really fun
Hopefully I'll come back. ..	In Ebert cabin guys were guys...
Reluctantly	literally
	Camp rocked

In addition to scribing free verse poems related to Camp Colman, students read a book called *A Week in the Woods* by Andrew Clements, pre-trip. This book describes a fifth grade boy who, during an overnight environmental fieldtrip with his class, gets mad at his teacher, runs into the woods, and gets lost.

Fifth grade teachers at School #4 and School #5 were unable to recollect curricular connections bet\tveen Camp Colman and the classroom outside of SCIence class Interestingly, on a scale of 1 through 5, these teachers at School #4 rated the level of curricular integration between Camp Colman and the classroom a 3.0, and the teacher at School #5 rated it a 4.5. These are two of the three highest curricular integration ratings. Clearly teachers from these schools pcrce;ved a high level of curricular integration because of Colman connections to science rather than non-science ciasses.

The counselor from School #6 easily rattled off a handful of connections between Camp Colman curriculum and non-science classroom curriculum. She

noted that sixth grade students at her school study letter writing. Accordingly, after returning from Camp Colman, students write letters to the Parent Teachers Association (PTA) about their camp experience. Additionally, the sixth grade classes participate in a Camp Colman related math unit. "Students break into groups and each group has to design a survey question such as 'What was your favorite evening activity?' or 'What was your favorite meal at camp?' Then they report their data on a bar graph" (School #6, 2009). The counselor noted that the school integrates Camp Colman into their technology curriculum as well. The student groups develop PowerPoint presentations of the previously described math surveys. They use Excel to graph their data. On a scale of 1 through 5, the counselor from School #6 rated the level of curricular integration between Camp Colman and the classroom a 4.5. This rating ties for the highest curricular integration rating.

The teacher from School #7 did not report curricular connections between Camp Colman and the classroom in science or any other discipline. "Curriculum-wise, Camp Colman is a stand-alone experience. But as an effective teaching tool it is not stand-a:one" (School #7, 2009). When I asked her to elaborate she stated, "We feel it is more important to focus on teamwork than academics at the beginning of the school year. Camp Colman helps teach kids to work together in teams" (School #7, 2009). Obviously, the teacher at this school believes "teamwork" to be a quasi-curricular connection. Other teachers shared this sentiment as I will explain in the following section.

Teamwork

Describing the importance of the teamwork connection between Camp Colman and the classroom, the teacher from School #7 continued:

> "Our [Physical Education] PE teacher does some follow-up activities. He plays teamwork games with the kids. He calls one of his games 'Mission Impossible.' I can't tell you too much about it but I know it involves teamwork and things like that. Teamwork is important at camp, in PE, and back in the classroom" (School #7, 2009).

Several other school leaders described teamwork connections as well. In fact, without my asking them, six of the *seven* school leaders volunteered that Camp Colman enhances teamwork and class cohesion.

School #2 takes students to Camp Colman both to facilitate hands-on science learning and to promote student bonding early in the school year (School #2, 2009). The teacher from School #3 stated,

> "The kids use the teamwork skills they learn at Camp Colman throughout the whole school year. We do lots of group projects and group activities throughout the school year; and, not to bring teamwork up again, but teamwork is something that kids bring back to the classroom and use all the time" (School #3, 2009).

One of the teachers from School #4 added,

> "Camp Colman is always a *very, very* positive experience for kids. There is a lot of teambuilding that goes on. They come back to school and *have* sometimes made friends they never would *have* thought of having as friends. Basically, Camp Colman helps us build a community in the beginning of the year" (School #4,2009).

The teacher from School #5 also notices that Camp Colman affects positive behavioral changes, particularly regarding teambuilding. "We go [to Camp Colman] in the beginning of the school year for teambuilding. The biggest connections between Camp Colman and the classroom come through teambuilding, though we do tie Camp Colman to our oceanography curriculum too" (School #5, 2009). In this case, it seems that curricular connections between OEE and the classroom are present, but less important to the teacher than teambuilding connections. The counselor from School #6 concurs: "Camp Colman connects *very* will with the classroom as far as building an environment for learning" (School #6, 2009). Finally, School #7 attends Camp Colman specifically for teambuilding. In fact, they usually select only "challenge/communication" and "outdoor activities" classes, forgoing all "science/environment" activities. "Our primary objective in taking kids to Camp Colman is to *give* kids life skills that they can bring to the classroom and beyond like listening and teamwork and paddling a canoe and those kinds of things" (School #7, 2009)

Even though teambuilding is not an academic discipline or curriculum per se, it is a key component of many Cllrricular activities. In fact, the pedagogy of

cooperative learning underscores the value of working as a team (MacGregcr, 2009). Accordingly, it is highly significant that the majority of the teachers I interviewed perceive teamwork to oe an important (and in several cases, the most important) connection between 0 EE and the classroom, and all of them brought it up without my inviting them to do so.

Environmental Awareness and Stewardship

In addition to heightened teamwork and class cohesion, one teacher discussed another OEE-classroom connection without my prompting: enhanced student environmental awareness and stewardship. The teacher from School #4 noted that after Camp Colman, her students were significantly more conscious of how much energy it takes to make things. "Whether ... their clothing or their food... ., they [the students] are more conscious of not wasting. They become very aware of what can and can't be recycled. They talk about what is being wasted in the school cafeteria like crazy. I notice they are very conscious of their lunch waste and of not taking too much. I guess [just notice that they are more awace" (School #4, 2009). Clearly, enhanced student environmental awareness and stewardship was a key OEE outcome and OEE-classroom connection at this school. Other teachers may have noticed related OEE outcomes, but I did not ask them directly and they did not voiunteer the information without my prompting.

Curricular connections to EALRs and GLEs

Clearly, teachers note varying types and degrees of curricular connections between Camp Colman and the classroom. Surprisingly, checking off Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs) is not particularly important to any of the teachers with whom I spoke. The EALRs, developed via the Basic Education Act of 1993, provide an *overview* of what students in Washington State should know and be able to do at each grade level. The GLEs detail what students are expected to know and be able to do at each grade level for each content area (Teaching and Learning, 2009). A teacher from the

private school noted that because their school is private, they are not bound to GLEs; he is thus unconcerned with checking them off. Interestingly, school leaders from all six public schools concurred that checking off GLEs does not play significantly into their decision to take students to camp. One stated, "Honestly, i plead ignorant as to [which EALRs, ifany] we check off at Camp Colman" (Schoo; #5, 2009). Another stated, "I probably could check offGLEs via the Camp Colman experience, but ...." (School #7,2009). Her voice trailed off, suggesting that she does not use Camp Colman to check offGLEs even though she could. Another teacher concurred, "For me, checking off EALRs is not important because the experience the kids get at camp is far greater than an EALR or a piece of paper saying that a learning standard was covered... .But 1think it is important for anyone who is concerned that takirg kids to camp is not valuable (School #3,2009). Despite the fact that the school leaders 1spoke with are not personally concerned with fulfilling state requirements or standards via the Camp Colman experience, three of the leaders recognized that checking off standards may be important to others includilg some teachers, the PTA, some parents, some administrators, and the school board. The principal at School #1 explained, "We have to submit a proposal to the school board to get permission to take this extended fieldtrin. Our rationale includes a list of EALRs covered at camp. I'm not sure how these curricular connections play out in reality, but they are important to the school board" (School #1, 2009). Another teacher noted, "Although it is not important to me, I'm sure [checking off GLEs] is important to other teachers" (School #5, 2009).

Challenges and Barriers to Integration: Teacher Perspectives

As elucidated above, all school leaders 1spoke with noted some type of curricular connection between Camp Colman and their classroom. School leaders from three of the seven schools mentioned that they would like to augment curricular connections, but time and curricular requirements have hindered this effort. School1eaders from the other four schools i!1dicated that they do not experience any harriers to enhancing curricular integration; they simply have not rlon p so.

First, let us look at the challenge curricular requirements present. The teacher from School #7 views Camp Colman as primarily a teambuilding and bonding experience, rather than an academic experience. Outside of Camp Colman, she does not feel that there is time in the school year to engage in fun, teambuilding games. "We have so much to cover, there just isn't time" (School #7, 2009). That said, she does incorporate teamwork into daily activities. So, in that way, Camp Colman and the classroom are connected on a daily basis. The principal at School #1 believes that integration is important, but so too is accomplishing district, state, and national curricular requirements. "The children have to meet standard on the WASL and they are not" (School #1, 2009). She indicates that better integration between Camp Colman and the classroom could enhance students' interest in science and the natural world, thus elevating their science skills and WASL performance. Unfortunately, Camp Colman is a once-a-year, stand-alone experience for her students. She believes that environmental education lacks district, state, and national support and thus is not incorporated into curricular requirements. IfOEE were required for ail students there would naturally be greater focus on curricular connections. As it now stands, teachers have to find or make time for integrative activities.

In addition to curricular requirements, time constraints also created a considerable barrier for some teachers. The counselor at School #6 noted that teachers are busy and the development of strong, integrated activities takes time. "It takes awhile to think up activities from scratch and it would *save* a lot of time if teachers didn't have to totally recreate integrative *activities"* (Schuol #6, 2009). This year teachers at her school have additional Professional Learning Time (PLT) built into the school week so that grade level teams get together to discuss curriculum development. During PLT teachers have some dedicated time to *develop* integrative activities.

Teachers from School #2 through School #5 stated that they did not see any barriers to enhancing curricular integration between Camp Colman and the classroom. The teacher from School #5 stated, "Personally I *have* not faced any challenges. All the teachers and parents participate in all the activities at camp so we know what is going on at camp and when we get back to the classroom we can

expand on it" (School #5, 2009). This teacher felt that curricular integration between Camp Colman and the classroom was already excellent. She gave integration a 4.5 on a scale of 1 to 5. The teacher from School #3 did not see any barriers to integration either. She believes that curricular integration is "just an added bonus" (School #3, 2009). She does not feel that spending a lot of time and energy on developing curricular connections is worthwhile. Currently she rates the level of integration 2.5 and feels that is sufficient. When asked to discuss barriers to curricular integration, the teachers from School #4 say, "I don't think we have any" (School #4, 2009).

Interest in Expanding Integration in the Future: Teacher Perspectives

Some teachers report barriers to developing and carrying out curricular activities that connect GEE to the classroom, and others do not. Regardless, all teachers noted that they were "extremely interested" in implementing several to over a dozen of the curricuiar integration ideas proposed in the survey (see Appendix C). All noted that it would be helpful if Camp Colman helped them heighten curricular integration. Accordingly, I asked school leaders to rate their interest in 19 integrative ideas on a scale of 1 to 5, 1 indicating no interest and 5 indicating extensive interest. The school leaders' average ratings are listed in Table 4 below. The integrative ideas highlighted in red are those ideas that MH, Camp Colman's GEE Director, rated a 5 on the same 1 to 5 scale.

Teacher Interest in Various Integrative Ideas

ID	Integrative Idea	Avg. Rating	Std. Dev.
A	**PrefPost Curricular Ideas Posted on Web**	**4.7**	**0.5**
D	Instructor Visits School Post-Trip	4.6	0.8
R	**Related Books & Websites Posted on Web**	**4.5**	**0.5**
C	Instructor Visits School Pre-Trip	4.4	0.8
0	Field Journal	4.3	1.0
S	Stewardship Project	4.3	1.2
M	**Phone Conversation *wi* OEE Director Pre-Trip**	**4.2**	**0.8**
P	**Instructor Attends School's Parent Night**	**4.0**	**1.4**
Q	Related Vocabulary and Species Posted on Web	4.0	1.5
N	Students Send Postcard to Selves	3.8	1.3
K	**More Extensive Post-Trip Evaluation**	**3.7**	**1.1**
L	**In-Person Conversation *wi* OEE Director Pre-Trip**	**3.5**	**0.8**
I	**"Dear Camp Colman" Letter**	**3.4**	**1.5**
E	Teachers Check-Out Activity Kits	3.4	1.0
G	Teacher In-Services	3.1	1.1
B	PrelPost Curricular Ideas Mailed	3.0	1.2
J	**More Extensive Pre-Trip Goals Sheet**	**3.0**	**1.3**
H	Kids Conference	2.8	1.3
F	On-line Teacher Blog	2.7	1.3

Table 4. This table summarizes the ratings teachers/counselors/principals gave each integrative idea in the survey. The left column provides the letter that corresponds to the survey question (see Appendix *C).* The second column briefly describes each integrative idea. The third column provides the average ratings teachers/counselors/principals gave each integrative idea on a scale of 1 to 5; 1 indicating "no interest" and 5 signifying "extensive interest". The right column denotes the standard deviations of each rating. The integrative ideas highlighted in red are those ideas that MH, Camp Colman's OEE Director, rated a 5 on the same 1 to 5 scale.

Some of the teachers provided an explanation for or commentary about their ratings. Below I will discuss significant comments and comment trends related to these integrative ideas. Note that each idea is labeled with the letter that corresponds to the respective question in the verbal survey (see Appendix *C).*

(A) Pre/Post Curricular Ideas Posted on Web. (Avg. Rating = 4.7). Two teachers were ambivalent as to whether the ideas should be posted on the OEE website, or mailed. The other five teachers asked that the ideas be posted on the website. The majority of the teachers did not offer curriculum content suggestions, but one teacher (School # 7) did express particular interest in pre-trip and post-trip activities that promote teambuilding and group cohesion.

(B) Pre/Post Curricular Ideas Mailed. (Avg. Rating = 3.0). See question "A" above.

(C) Instructor Pre-Trip School Visits. (Avg. Rating = 4.4). Three schools (Schools #3, #6, and #7) would prefer post-trip visits to pre-trip visits. They believe that post-trip visits, complete with teambuilding games and curricular extensions, would help keep the impact ofOEE alive throughout the school year (as the impact of the experience has a tendency to wane with time). One school (School #4J would prefer a pre-trip viSit because meeting Camp Colman staff pre-trip would likely relieve students' anxiety about the camp experience. The other three schools were enthused about both pre-trip and post-trip visits with no preference for one over the other.

(D) Instructor Post-Trip School Visits. (Avg. Rating = 4.6). See question "C" above.

[EJ Teachers Check-Out Activity Kits. (Avg. Rating = 3.4J. Four schools were concerned about the logistics of transporting the kits between Camp Colman and the classroom; all four noted that they would prefer it if the kits could be easily mailed. One teacher asked that the kits complement required curriculum. To this end she suggested that Camp Colman develop several kits with different focuses so that teachers can select the most interesting and relevant one. Finally, one teacher suggested that Camp Colman instructors visit the schools to carry out the kit activities with students.

(F) On-iine Teacher Blog. (Avg. Rating = 2.7J. Several teachers noted that although a teacher blog is mtriguing, they realistically would not take the time to visit the blog often.

(GJ Teacher In-Services. (Avg. Rating = 3.1). Teachers voiced preferred in-service locations. They requested that the in-services be located near their work places rather than at Camp Colman; they were reluctant to drive the signifIcant distance to Camp Colman to participate. One teacher added that ifit were his fIrst year taking students to camp, a pre-trip in-service at Camp Colman would have been ideal; now that he has Camp Colman experience, he considers an on-site in-service to he unnecessary. Teachers not only expressed opinions about the location of the in-services, but about their content as well. Several teachers voiced interest in in-services focused on classroom curricular connections to Camp Colman. They would

like Camp Colman to provide ideas, they would be interested in brainstorming with other teachers, and they would like work to develop activities for use in their own classrooms. Generally teachers were uninterested in listening to Camp Colman staff explain Camp Colman class offerings (as they are already familiar with the offerings). One teacher not only discussed in-service location and content; she recommended a date as well. She explained that she would appreciate it if the in-services were offered on her school's scheduled teacher in-service days. Finally, two teachers suggested clock-hours be offered for participation. "Clock-hours professionalize and legitimize the experience so teachers don't feel they are doing something for nothing" (School #1,2009).

(H) Kids Conference. (Avg. Rating = 2.8). Transportation time and cost could curtail schooi participation as several teachers expressed concern about the logistics of bringing students to Camp Colman for the conference.

(I) "Dear Camp Colman" Letter. (Avg. Rating = 3.4). Several teachers noted that letter writing would fit nicely into their language arts curriculum. Two teachers underlined the importance of developing a template with specific questions such that student letters are focused and useful. Not only were teachers interested in pre-trip letter writing; three teachers voiced interest in post-trip letter writing as well. One of these teachers explained that because the Camp Colman trip is in September, there is not time to engage students in pre-trip letter writing; she believes post-trip letter writing, on the other hand, could be a feasible and powerful reflectiun activity.

en More Extensive Pre-Trip Goals Sheet. *(Avg.* Rating = 3.0). One teacher emphasized that it is critical that Camp Colman staff actually read and respond to teachers' goals and concerns. Teachers must feel that the time spent completing the form is worthwhile.

(K) More Extensive Post-Trip Evaluation. (Avg. Rating = 3.7). Three teachers explained that they would rather complete the post-trip evaluation after returning to school. One of these teachers added that she feels rushed and unfocused trying to complete the evaluation during lunch on the last day of camp. Not only did teachers suggest alternate evaluation times and locations, one teacher advocated an alternate

medium as well. "I would much prefer a *Survey* Monkey evaluation that comes to my e-mail that I can complete in 10 to 15 minutes, to a paper evaluation that will get lost in a folder" (School #2, 2009). This teacher not only requests that post-trip *evaluations* be administered electronically, but that all paperwork be administered electronically.

(L) In-Person Conversation with OEE Director Pre-Trip. *(Avg.* Rating = 3.5). All teachers were "extremely interested" in either pre-trip in-person meetings, or pre-trip phone conversations, with Camp Colman's OEE director. Teachers from two schools (Schools #1 and #4) preferred pre-trip *in-person* meetings. Teachers from two different schools (Schools #2 and #6) desired pre-trip *phone* conversations Both of the teachers who *favored* phone conversations noted that an in-person meeting would *have* been ideal before taking their students to Camp Colman for the first time; now however, they consider a phone conversation to be equally *effective* anO more efficient. The other three teachers had no preference for phone *versus* in-person conversations, but definitely sought to partake in one of the two.

(M) Phone Conversation with OEE Director Pre-Trip. *(Avg.* Rating =4.2). See question "L" *above*

(N) Students Send Postcard to *Selves. (Avg.* Rating = 3.8). Two teachers raved about this idea. One offered, "There is great power in writing to yourself and then hearing from yourself later on" (School #1, 2009). The other teacher concurred that the Jostcard would effectively rekindle the OEE experience for students. Whereas some eachers s.mpJy applauded the self-addressed postcard plan, one teacher (School #7) provided a constructive suggestion. She explained that the prompt is critical. In order for students to benefit from receiving and reading their own self-addressed postcard in the spring, they have to write about a significant OEE growth experience or new awareness about themselves or others. She continued, "The prompt needs to be written in a way that is accessible to students. It also needs to guide and compel the students to write something meaningful" (School #7, 2009).

(0) Field lournal. *(Avg.* Rating = 4.3). One teacher (School #3) lamented that her school cannot allocate resources to pay extr2 money for journals; if the journals are included in the cost of the program she will enthusiastically use them. Another

teacher (School #6) appreciates that journals would provide her with a conventional means of assessing her students' OEE experience - she could evaluate her students' written journal work. She is, however, wary that journals could become a hassle for teachers and OEE staff. Students might loose or accidentally drop the journals in the mud or in the ocean; chaperones and teachers would have to spend time and energy finding and replacing them. To minimize this disturbance, she suggests that instructors collect the journals at the end of each class period. Finally, several teachers asked that the journal not be designed solely for camp. Rather, they recommend that it also include extension activities that can be completed in the classroom pre-trip and post-trip.

(P) Instructor Attends School's Parent Night. (Avg. Rating = 4.0). Several teachers recognized that parent night presentations greatly ease parents' minds about OEE. One teacher revealed that she already presents information about the OEE program at her school's parent night, so it is unnecessary for a Camp Colman staffr:1ember to come do so. She added that, conversely, ifher school (School #6) were attending Camp Colman for the first time, a presentation by a Camp Colman staff member would be exceptionally valuable. Another teacher mentioned that her school (School #1) invites hath parents and students to the presentation. She recommends this strategy because it encourages parents and students to communicate about the experience with one another.

(Q) Related Vocabulary and Species Posted on Web. (Avg. Rating =4.0). One teacher noted that a Jist of key science vocabulary with definitions would help teachers prepare students for OEE and for the science WASL. This teacher continued, "One of the biggest things almost all of our students lack is vocabulary. Many of our students come from poverty or speak English as a second language. To succeed in school they really need to learn vocabulary. School is hard for these children and an improved vocabulary would help them a lot" (School #1, 2009). Two more teachers underscored their excitement about Camp Colman potentially adding relevant vocabulary and definitions to their website.

(R) Related Books & Websites Posted on Web. (Avg. Rating = 4.5). All but one teacher expressed "extreme interest" in this OEE-classroom integrative strategy. Only one teacher provided specific content suggestions. She (School #7) asked that

books and websites related to teambuilding activities to be included on the webpage.

(S) Stewardship Project. (Avg. Rating =4.3). Teachers unanimously expressed excitement about creating a project that would relate to Camp Colman and simultaneously benefit their school and local communities. "Real world applications like this are so important. They really raise the level of learning" (School #J, 2009). Several teachers admitted that they were at a loss for relevant ideas and would appreciate help brainstorming and developing a stewardship project.

In addition to these integrative ideas, some teachers expressed ideas of their own. For example, fifth grade teachers at School #4 hoped to connect Camp Colman to school via the creation of a school garden and the exploration of an existing nature trail or campus. "It would be nice to be able to come up with some activities that we could do outside the walls of the classroom whether it be composting or utilizing the nature trail right behind the school. Anything to extend what the kids do at camp would be great" (School #4, 2009). Although this school has not partaken in the gardering class that Camp Colman offers, they are considering the class for next year. The teacher from School #7 noted that she would like to implement a compass course in the fieid behind the school. She beiieves this hands-on, minds-on activity would engage students and effectively build upon the Camp Colman orienteering class. She has ordered the compasses but has yet to plot the course.

DISCUSSION and RECOMMENDATIONS

The goal of this research was to determine how GEE Camp Colman can best facilitate curricular integration between its program and classrooms. By triangulating data from the literature, participating teachers, and GEE di'-ectors, I have been able to identify ten best practices that Camp Colman can pursue to enhal1ce these curricular connections.

The best practices that I suggest srem, in part, from the results of the survey I administered to teachers and to Camp Colman's GEE director. Survey results

revealed six curricular integration ideas that both Camp Colman's OEE Director and participating teachers ranked at least 4 (on an interest scale of 1 to 5). These include: (1) posting more *extensive* pre-trip and post-trip classroom curricula suggestions on the Camp Caiman website, (2) posting a list of relevant books and websites on the Camp Colman website, (3) posting a list of relevant vocabulary (with definitions) and species on the Camp Colman website, (4) developing a field journal for students, (5) sending OEE Camp Colman staff to the schools' Parent Nights, and (6) engaging in pre-trip phone *conversations* with teachers. Additionally, three more curricular integration ideas were ranked at least a 4 by teachers (on an interest scale of 1 to 5) yet a mere 3 by MH, the director of Camp Colman. Camp Colman's director noted that despite the potential benefits of all three, she did not rank them higher because these ideas strike her as logistically challenging. These include: (7) sending OEE instructors to *visit* classrooms pre-trip; (8) sending OEE instructors to *visit* classrooms post-trip, and (9) working with teachers and students to develop stewardship projects.

The best practices that I recommend below take into account the *above* listed curricular integration ideas that both teachers and MH strongly support (as determined *via* the *survey). However,* I have variously modified, condensed, and expanded upon these ideas in order to creatively incorporate the suggestions of teachers, Camp Colman's OEE director, other OEE directors, and published literature findings. Ultimately, the ten best practices that I identify (a) *advance* the goals of both participating teachers and Camp Colman's OEE Director, (b) address and mollify the concerns of participating teachers and Camp Colman's OEE Director, and (c) incorporate the findings of previously published studies and the successful best practices of other OEE organizations in western Washington.

These best practices are also in line with the Environmental Education Association of Washington's (EEAW) goals and strategies for *environmental,* nature, and outdoor centers. One of EEAW's three goals for the environmental and outdoor centers sector is to "sustain, expand, and improve the sector" which can be *achieved,* in part, by "identify[ing] and sharing best practices within the sector" (Environmental Education Association of Washington, 2008a). Clearly, my research, analysis, and recommendations further this goal.

The best practices I suggest are as follows:

(1) Post more extensIve pre-trip and post-trip classroom curricula suggestions on the Camp Colman website.

One of the six characteristics of successful environmental education programs identified by OSPI's *Environmental Education Report* is an "integrated approach" tr:at connects learning across multiple disciplines (Wheeler *et al., 2007).* The EEAV\llikewise recommends increased multidisciplinary experiences as a strategy for enhancing the quality of environmental, nature, and outdoor centers (Environmental Education Association of Washington, 2008d). Accordingly, I not only recommend deveioping pre- and post-trip activity suggestions geared to Camp Colman's major outdoor lessons, which several studies (Farmer and Wott, 1995, Smith-Sebasto and Cavern, 2006; and Stern *et al.,* 2008) have found to enhance student environmental knowledge and environmental respect, I also advise that least some of these activity suggestions be multidisciplinary in that they not only incorporate science concepts, but also math, language arts, social studies, art, and music concepts. Because different schools have different curricula and focus on different topics through the school year, it is important to provide an array of suggestions such that teachers can select activities that fit well with their reql:irements and their curriculum calendar. For example, with regard to Colman-related science curricu;a, three of the schools I explored have oceanography units, one has a landforms unit (including erosion, deposition, and elevation), one has a forest ami fresh water ecology unit, and one studies Puget Sound weather and geology. Not only should the menu of suggested learning activities be topically varied and multidisciplinary in content, it should include *activities* of various lengths and depths such that teachers can select curricular connections tnat fit their timeframe.

In addition to including thematically diverse lessons, multidisciplinary act;vities, and *activities* ofvarious lengths and depths, I also recommend that some pre- and post-trip activity suggestions explicitly incorporate a pedagogy of cooperative learning along with a focus on teambuilding. This is important because six of the *seven* school leaders I interviewed volunteered that they appreciate that

Camp Colman enhances teamwork and class cohesion; one school attends Camp Colman primarily for team building

Because all of the teachers that I interviewed bring their students to Camp Colman in the fall, they were particularly interested in follow-up (rather than preparatory) activities. One activity suggestion that promotes classroom follow-up that both teachers and MH supported is a "postcard to self." Students write a postcard to themselves on the last day of camp about an especially memorable OEE learning experience; teachers return the postcards to the students several months later as a segue into an OEE follow-up activity. Students can write about or discuss with classmates the OEE experience they penned on their self-addressed postcard, and the ways that experience has since impacted them. Now the students are prepared and excited to begin an OEE-related activity, even months after the camp experience. In this way, teachers who have Colman-related curriculum units scheduled for the spring (months after camp) can encourage students to draw connections between the classroom coursework and OEE.

Since many of the teachers I spoke with expressed interest in linking classroom curriculum to Camp Colman pre-trip, yet lamented their meager pre-trip timeframe, they seek quick yet effective pre-trip activity suggestions. One such activity that both teachers and Camp Colman's OEE director supported, is a "letter to Camp Colman" in advance of the outdoor school visit. Several teachers recommended that a template for the letter be developed in order to focus students. Not only can these letters be incorporated into classroom language arts curricula, but they can aid Camp Colman in forging connections between their program and individual classrooms. When students send letters to Camp Colman pre-trip, Camp Colman instructors gain knowledge about students' expectations, learning goals, and existing knowledge such that they can better tailor the OEE program to fit the needs of the unique group. In turn, students begin anticipating the outdoor school experience and identify for themselves both connections with in-school learning and questions that they might *have*.

Finally, Camp Colman can learn from perusing the pre-trip and post-trip curricula that other OEE programs post online. After exploring the pre-trip and post-trip activity suggestions that three well-respected western Washington OEE

programs offer on their websites, I found that those activities recommended by the Olympic Park Institute (OPI] stand out as particularly thorough and well organized. Each of the lesson plans that OPI posts include target grade level, expected lesson duration, goals and learning objectives, background information, materials, procedures, optional extensions, as well the Washington State EALRs covered. recommend that Camp Colman consider including each of these as well.

(2) Post a list of relevant books and websites on the Camp Colman website.

Camp Colman's OEE director rated this feature a 5 (on an interest scale of 1 to 5) and teachers rated it a 4.5 on average. Accordingly, [recommend that Camp Colman create three web-links with books and websites related to the Camp Colman experience: one link for teachers, one for students, and one for parents.

The web-link for *teachers* could include an annotated list of books, organized by subject matter, which provide more information about the various topics Camp Colman covers. Again, because both OSPI's *Environmental Education Report* and the EEAW tout the benefits multidisciplinary learning, I recommend listing books and websites related to Camp Colman's major lessons and OEE in general, which connect to art, music, science, math, social studies, and language arts classes (Wheeler *et 01.*, 2007; Environmental Education Association of Washington, 2008a). Potential topic headings could include: marine, forests, geology, gardening, salmon, birds, teambuilding, community service and the environment, environmental art, music and the environment/nature (this section could be followed by a list of songs rather than a list of books), math and the environment, and fiction books for youth related to the environment/nature. Teachers could select the most relevant and intriguing books; by exploring these books, teachers would gain knowledge and excitement about these topics such that they could develop in-depth OEE-extension activities for their students. In addition to an annotated list of topically organized books, the web-link for teachers could include an annotated list of topically organized websites (with links). Ideally, this list would include (a) websites of local, national, and international non-profit, for-profit, and governmental organizations that are dedicated to conserving or protcctil1g the environment, or that conduct

environmental research of interest to K-12 students (ideally in which K-12 students can participate); (b) websites that provide information about Colman topics; and (c) websites with specific environmental curriculum suggestions. For example, the North Cascade Institute's (NCI) Mountain School suggests that teachers peruse the websites of environmental education programs such as *Project Learning Tree* and *Project WILD,* which provide environmentally focused curriculum suggestions and resources for K-12 educators. Furthermore, OPI provides links to websites that sell activity kits and classroom supplies for environmental science related activities

I recommend a similar "books and websites" web-link that targets *students* in grades 4-6 (the population Camp Colman typically serves). This web-link can provide an annotated list of books and websites as described above, but it should include only those books of interest to the elementary and middle school audience. The annotations should be written in a style that is accessible and appealing to this young audience. Teachers might specifically ask students to search this website post-trip and pick one book or website to delve into more deeply. Students could then create a brief presentation about their chosen source, providing their classmates with a summary of the source and explanation of why it is interesting and how it relates to Camp Colman.

Finally, I recommend a "books and websites" web-link for *parents*. This web-link should focus on books and websites that parents might enjoy exploring *with* their Camp Colman kids (either pre- or post-trip). A web-link geared specifically to parents would encourage parents to learn about Camp Colman topics and to communicate about and investigate these topics with their kids Such parent-student communication is in line with the *Environmental Education Report's* push for "effective communication" (Wheeler *et al.,* 2007J.

By designing three discrete web-links with Camp Colman-related books and websites, teachers, parents, and students will feel that Camp Colman is reaching out to them specifically. Furthermore, new Camp Colman OEE instructors could peruse these web-links as well, to familiarize themselves with resources that could augment their Colman-related knowledge; MH noted that her new hires last season requested access to such resources.

(3) Post a list of relevant vocabulary (with definitions) and species (of plants and animals) on the Camp Colman website.

80th teachers and MH strongly supported this integrative suggestion; one teacher emphasized her conviction that expanding her students' science vocabulary would significantly improve their typically poor scores on the science WASL.

I would suggest grouping the vocabulary by theme or by Camp Colman lesson title (i.e. marine, forest ecology, teambuilding, the scientific process etc.) such that teachers can easily select vocabulary relevant to their students' GEE experience. Several teachers requested that the words' definitions be included on the webpage as well.

Ideally, the list of plant and animal species commonly found at Camp Colman, would include common and scientific names as well as a drawings or photographs. I recommend that the species list be accompanied by a message to teachers suggesting that, as an GEE-classroom connection activity, they ask students to observe and note similarities and differences between the plant and animal communities at Camp Colman and in their school and home communities.

(4) Develop a field journal for students.

I suggest that Camp Colman create an optional field journal for students to use at camp, and ideally back at school post-trip as well. Teachers should be able to elect whether or not their students use the Colman field journal because some teachers I spoke with have created a field journal of their own that they are pleased with, and one teacher I interviewed wants the GEE experience to be a complete respite from the perceived burden of doing written work. Furthermore, because one teacher lamented that her school could not allocate resources to pay extra for field journals, I recommend providing the journals to students at no extra charge. If this is not possible due to the significant cost of journal creation and printing, making the journals optional allows schools to opt out as their financial resources dictate.

If a given teacher wants their students to use the Camp Colman field journals, I recommend that OEE instructors provide students with the field journals during their first Camp Colman course. By providing journals to the students at camp (rather than mailing them to teachers ahead of time for pre-trip classroom use), occasions for losing the journals in transit diminishes. (One teacher was concerned that her students would loose their journals and that finding or replacing them would become an unwelcome hassle for teachers and chaperones). To this end, I also suggest that OEE instructors offer to collect student journals at the end of each class session so that students do not misplace the journals between classes.

The field journal could include written activities that help students focus on and think critically about the main points of each Camp Colman class. It could also include blank pages for reflection. Ultimately, the field journal would provide teachers with a conventional means of assessing students' OEE experience; teachers could evaluate their students' written work.

In order for the field journal to *serve* most effectively as a bridge between OEE and the classroom, the journal must be used or built upon post-trip in the classroom. To facilitate post-trip journal work, I recommend providing teachers with a teacher's guide to the student journal. The IslandWood program provides a superb example of such a guide. Whereas IslandWood's student field journal is 6 by 7 inches in dimension, their teachers' guide to the field journal is 8.5 by 11 inches. In the "extra space" the teacher's guide provides (a) an answer key, and (b) suggestions for ways teachers can expand upon each field-journal activity post-trip in the classroom. As such, following the camp experience, students will not only have OEE curricular memorabilia (in the form of a field journal) that they can reflect upon post-trip, but their teachers will be able to effectively guide them in classroCJm journal extension activities.

(5) Send OEE instructors to *visit* schools pre-trip *or* post-trip.

Teachers considered these *visits* to be especially appealing for fostering OEE-classroCJm curricular connections. However, Camp Colman's OEE director only

rated the idea a 3 due to perceived logistical challenges. Nevertheless, perhaps Camp Colman can send instructors to schools *either* pre-trip *or* post-trip. This would reduce the logistical burden of sending instructors to each school twice, and it would allow teachers with a specific preference for a pre- versus post-trip visit to choose accordingly. Because OEE Camp Colman typically needs all or most of its instructors on-site during the fall and spring seasons, I suggest Camp Colman devote a few days before and after each season for these visits.

The OSPI's *Environmental Education Report* identified "long-term rather than short-term programs" to be particularly effective at enhancing students' academic performance and helping them to master skills and knowledge. Although pre- and post-trip visits do not extend the on-site OEE experience, they do lengthen the students' involvement with OEE Camp Colman and with the curricular content that it presents.

Clearly, the content of the pre-trip and post-trip visits should depend, in part, on the group dynamics and curricular background of each student group. Camp Colman Instructors could speak with the school's head teacher before the visit to find out whether the teacher would like to emphasize a particular topic or activity. Ideally, these visits would be opportunities for instructors to work with teachers to develop a Colman-related stewardship project (see recommendation #6).

(6) Work with teachers and students to develop stewardship projects.

One of the EEAW's three environmental education goals for the environmental, nature, and outdoor centers sector, is to "increase application and citizen engagement"; this includes facilitating opportunities for EE-related service learning (Environmental Education Association of Washington, 2008a). Besides, researchers including Wheeler *et al.* (2007) have repeatedly determined that strong community connections improve environmental education programs. To this end, Camp Colman-related stewardship projects would encourage students to recognize

connections between their OEE experience and, not only their classroom, but the larger community as well.

Clearly, the successful implementation of a stewardship project that integrates Camp Colman with students' school and home communities requires planning, preparation, and communication; nevertheless teachers overwhelmingly expressed excitement about this integrative idea, rating it 4.3 (on average) on an interest scale of 1 to 5. However, teachers did state that they would appreciate help selecting and planning the project, particularly the first year. Examples ofOEE-related stewardship projects that students could carry out in their school communities include adopting a section of campus and maintaining it ivy-free (as suggested by MH), creating an organic community garden, planting native trees, cleaning up a nature trail, designing and adding interpretive signs about plants and animals to a local nature trail, etc. Perhaps, teacher in-service workshops (see recommendation #8 below) could be devoted to helping teachers brainstorm and create stewardship projects. Additionally, Camp Colman instructors could provide motivation for and help with stewardship projects during pre-trip and post-trip classroom visits (see recommendation #5 above).

Stewardship projects could benefit students, schools, communities, and Camp Colman in several ways. First, published studies have demonstrated that students' environmentally responsible behavior increases as a result of participation in environmental education programs, including school-facilitated projects such as this stewardship project (American Institutes for Research, 2005; Duffin *et al.,* 2004; Kearney, 2009). Secondly, the projects could provide Camp Colman with significant positive community attention. By encouraging teachers to make their larger school and local communities aware of their students' stewardship efforts, both the school and Camp Colman could receive positive publicity which could in turn attract volunteers and funds. Finally, stewardship projects would inherently benefit the schools and communities involved because stewards (the students) actively and responsibly care for their charge. The students could even serve as role models, inspiring additional community stewardship projects.

(7) Present at schools' Parent's Nights; meet with head teacher the same day.

The OSPI *Environmental Education Report* touts the importance of effective communication between OEE programs, teachers, students, and the community (Wheeler *et al.,* 2007). Informing parents about their students' upcoming Camp Colman experience would not only ease parents' minds about their students' GEE adventures, but it would promote parent-child communication and discussion about the experience as well. Ideally, the parent night presentation would provide parents with (a) basic information about the logistics and content of the upcoming experience (with an opportunity for questions and answers), and (b) information about ways they can get *involved* (i.e. become a chaperone, explore related books and websites with their child (see recommendation #2), volunteer to help facilitate a Colman-related stewardship project (see recommendation #6), discuss the GEE experience with their child both pre-trip and post-trip). This way, parents would be prepared to help students forge connections between their GEE experience and their home and school *lives.*

In the GEE Camp Colman teacher's manual, MH encourages teachers to contact her to arrange parent night presentations. Unfortunately, only 30% of schools request such *visits*. I recommend that MH proactively contact teachers or the school principal to suggest a parent night presentation, because, according to MH, many teachers do not read the teacher's manual at all.

Ideally, MH can meet with participating teachers the same day that she presents to parents. In this way she can consolidate her trips. That said, some of the teachers I interviewed prefer phone-meetings to in-person meetings, believing them to be more time-efficient. Perhaps, if MH is already coming to the school to *give* a parent night presentation, these teachers would opt for an in-person meeting instead. If not, a phone conversation could work well too. During these MH-teacher conversations, I suggest that MH talk with teachers *extensively* about their students and their needs and the classroom curriculum. I recommend that teachers describe their goals for OEE and their plans (if any) for connecting the *GEE* experience with their classroom curriculum. During these conversations, MH could provide teachers who *have* not already developed strong GEE-classroom curricular connections with

resources (i.e. pre-trip and post-trip curriculum suggestions, information about relevant books and websites, a list of relevant vocabulary, information about field journals, information about optional pre-trip and post-trip instructor visits, and information about teacher in-services) to build and enhance those connections.

(8) Develop teacher in-service workshops.

The GSPJ's *Environmental Education Report* considers ongoing high-quality professional development to be crucial to program success and the EEAW seeks to improve environmental education by "[improving] professional development and training" (Wheeler *et al.,* 2007; Environmental Education Association of Washington,2008a). I too would suggest developing teacher in-service workshops because (a) several teachers were extremely interested in learning how to connect classroom curricula with GEE Camp Colman curricula, and (b) the literature suggests that relevant professional development for teachers can significantly enhance the impact of the environmental education experience on students (Gutierrez de White and Jacobson, 1994).

In-service offerings located at Camp Colman should he geared to teachers who anticipate bringing their students to Camp Colman for the first time. In this way, new teachers can familiarize themselves with the Colman campus and GEE activity choices. Veteran Camp Colman teachers would welcome in-service offerings as well, but they would appreciate these in-services to be located closer to Seattle, Tacoma, or Issaquah, where the majority of the participating schools are located. Teachers who are already familiar with GEE Camp Colman and :ts classes would rather not drive the significant distance to Camp Colman for an in-service day. The veteran teachers I interviewed noted that they were uninterested in listening to Camp Colman staff talk about Camp Colman class offerings (as they are already familiar with the offerings) but would appreciate in-services focused on building GEE-classroom connections. They would welcome ideas, time to brainstorm with other teachers, and time to develop GEE-related activities that they can use in their

own classrooms. Teacher in-services would also be a prime opportunity for introducing and encouraging stewardship projects (see recommendation #6).

Additionally, I recommend that teachers be awarded clock-hours for their participation in the in-service activities. To maintain a valid Washington State teaching certificate, teachers need to complete 150 approved clock-hours of continuing education or 15 quarter hours of academic credits every five years (Superintendent of Public Instruction: State of Washington, 2009). One teacher explained that clock-hours significantly increase the appeal and credibility of an in-service.

(9) Modify post-trip evaluations.

Although teachers were only moderately interested in more *extensive* post-trip evaluations (3.7 on an interest scale of 1 to 5), MH rated this idea a 5. Thus, I recommend that Camp Colman moderately (but not excessively) expand the content of the post-trip evaluations to include assessment ofOEE-ciassroom connections (such as pre- and post- curriculum ideas, field journals, etc).

Currently OEE Camp Colman asks teachers to complete evaluations during lunch on the last day of camp. Three teachers explained that they would rather complete the post-trip evaluation after returning to school, as they feel rushed at this end-of-the-visit lunch. I would encourage Camp Colman to send the evaluation to teachers *via* e-mail (rather than handing them a paper copy) as teachers consistently preferred electronic correspondence. Perhaps developing the post-trip evaluation on a program such as Survey Monkey would facilitate compilation, organization, and analysis of responses.

(10) Assess curricular connections.

Clearly, continued assessment of OEE-classroom connections is important as well. Teachers already complete routine post-trip evaluations (see

recommendation #9), but [suggest implementing more in-depth assessments, focused specifically on GEE-classroom connections, every couple of years. Questions that could be asked of teachers in such assessments include the following: To what extent do you utilize Camp Colman's pre-trip and post-trip curricular connection suggestions? Which activity suggestions are most useful and why? Do you have recommend addendums or modifications to the proposed curricular integration ideas? Are there specific words you would like to add to the Camp Colman vocabulary list? If so, which ones? Do you have recommendations for relevant books or websites that could be added to the Camp Colman webpage? [f so, please list. Do you engage your students in a stewardship project inspired by *GEE* Camp Colman? [f so, which project did you choose? [n which ways was the stewardship project successful and in which ways can it be improved? What do you like about the field journal? What suggestions do you have for field journal improvement? Did you attend an *GEE* Camp Colman teacher in-service? If so, how was it beneficial; what could be improved? Assessments provide valuable feedback that allows organizations to continuously enhance their program.

In addition to the ten best practices identified above, I would encourage GEE Camp Colman to continue to pursue its plans to expand its "friends of camp" network and to compile a list of potential grant and funding sources for teachers seeking money to continue to bring students to camp. After all, teachers at six of the seven schools mentioned that funding was a concern, and at three of the seven schools, over forty percent of students receive free and reduced lunch under the National School Lunch Program. Further, one of the EEAW's three goals for environmental centers is to create programs that are valued by and accessible to all Washington State residents. A key strategy to maintain and increase access is to "ensure dIverse funding sources" (Environmental Education Association of Washington,2008a). [t is also important to recognize that activities and projects which enhance the greater community's awareness and positive perception of GEE Camp Colman, could naturally help herald funds. Examples of such activities include presentations at parent nights and stewardship projects.

Clearly, adopting these best practices into the Camp Colman program will take time and commitment. Fortunately, all of these best practices are works in

progress; they can and should be improved and expanded upon based on feedback from participating parents, students, and teachers. It is thus not imperative, or even realistic, to require that these best practices be "perfectly developed" before initially implemented. On the contrary, it is important to start small. In fact, my hope is that Camp Colman is not overwhelmed by the breadth and depth of these suggestions, but rather welcomes them as potential medium-term goals. Furthermore, because several of these suggestions (including developi ng pre-trip and post-trip curricular suggestions, creating a field journal, and organizing teacher in-services) require significant time and focused energy, it may be beneficial to elicit the help of volunteers. At two of the OEE organizations I explored, AmeriCorps volunteers contributed significantly to the programs' OEE-classroom connections. For example, at IslandWood, an AmeriCorps volunteer created all four of the activity kits that teachers check out to use in their classrooms.

CONCLUSION:

My objective was to determine how OEE Camp Colman can enhance curricular integration between its program and classrooms in order to further accomplish its OEE goals as well as the goals of participating teachers. Whereas previous studies have documented benefits of OEE-classroom curricular linkages (Smith-Sebasto and Cavern, 2006; Gutierrez de White and Jacobson, 1994; Farmer and Watt, 1995; Stern *et al.*, 2008), they have not provided specifics about the range of existing OEE-classroom integrative endeavors; they have not explored the barriers to such integration; and they have not identified ways in which these barriers can be overcome. This case study of OEE Camp Coiman helped fill these critical literature gaps. The study included a review of the literature, in-person interviews with Camp Colman's OEE director and the OEE directors of other well-regarded programs in the region, phone interviews with teachers who brought their students to Camp Colman in fall 2008, verbally administered surveys of participating teachers and Camp Colman's OEE director, and a review of *relevant* websites and documents. Via my investigation, I was able to identify how OEE Camp Colman currently connects its program with classroom curricula; why OEE Camp Colman is interested in expanding and deepening curricular linkages in the future;

the impacts and best practices of OEE-classroom curricular connections according to the literature; and the realities, challenges, and goals of participating teachers and OEE directors with regard to curricular integration. With this information, I identified and elaborated on ten best practices that OEE Camp Colman can employ to bolster curricular connections between its program and classrooms. These recommendations (a) advance the goals of both participating teachers and Camp Colman's OEE Director, (b) address and mollify the concerns of participating teachers and Camp Colman's OEE Director, and (c) incorporate the findings of previously published studies and the successful best practices of other well-regarded OEE organizations in western Washington. In brief, my recommendations are that Camp Colman undertake the following: (1) post more extensive pre-trip and post-trip classroom curriculum suggestions on the Camp Colman website, (2) post a list of relevant books and websites on the Camp Colman webSite, (3) post a list of relevant vocabulary (with definitions) and species (of plants and animals) on the Camp Colman website, (4) develop a field journal for students, (5) send OEE instructors to visit schools pre-trip or post-trip, (6) work with teachers and students to develop stewardship projects, (7) present at schools' parent nights; meet with teachers the same day, (8) develop teacher in-service workshops, (9) modify the timing and content of post-trip evaluations, and (10) assess curricular connections.

Clearly, this research has allowed me to analyze curricular connections between OEE Camp Colman and participating classrooms, and to develop well-informed recommendations as to how Camp Colman can enhance these connections. However, my research does have limitations. Below I will discuss its primary limitations and provide suggestions for further research that could shed light on lingering and newly acquired questions regarding curricular connections between OEE programs and classrooms.

First, this study revealed that the OEE programs I investigated do not assess whether participating teachers use the pre- and post-trip curricula made availahle on their websites. I did not interview teachers who bring their students to IslandWood, the Olympic Park Institute (OPI), the North Cascades Institute (NCI), or ocher OEE programs that post classroom curriculum suggestions; rather I interviewed teachers who bring their students to Camp Colman (a program that did

not post curricular suggestions until after I completed my interviews). Accordingly, I was unable to determine why (or why not), and to what extent, teachers employ pre- and post-trip curricular suggestions. I was also unable to determine which pre- and post-activities suggested by OEE programs teachers find particularly effective. In the future, I recommend that researchers interview teachers who bring their students to OEE programs that provide pre- and post-trip curricular suggestions. The researchers can ask teachers to explain whether and why they engage students in the suggested activities, whether and how they recommend the *activities* be improved, how the *activities* tie into their classroom curricula, and what types of additional activities they would like the OEE programs to create and post. Because OEE Camp Colman began providing pre- and post-trip curriculum suggestions in February 2009, teachers who bring their students to Camp Colman in spring 2009 and thereafter, could be included in this proposed follow-up investigation.

Another study limitation stems from the fact that I interviewed only teachers whose students participate in OEE Camp Colman in the fall. Perhaps teachers who bring their students to camp in the spring have distinct goals, concerns, and challenges. For example, whereas the majority of the teachers I interviewed noted that they do not have time to engage students in *extensive* pre-trip activities, teachers who bring their class to camp in the spring likely have substantially more time for pre-trip curricular preparations, but less time for post-trip extensions. Furthermore, I would hypothesize that "fall schools" are more interested ir engaging students in teambuilding activities (in order to promote group cohesion and communication at the beginning of the school year) than are spring schools. Differences between fall and spring schools, such as these, would impact the curricular connections that Camp Colman can make with each. Accordingly, I recommend that follow-up studies include teachers at both "fall" and "spring" schools.

A third limitation is one of sample size. I was only able to interview school leaders at 7 of 12 fall schools. The teachers at the *five* schools who did not respond to my interview requests may *have* different realities, barriers, and goals related to curricular connections between OEE and the classroom than the teachers who agreed to participate in my study. Although I was able to glean significant

information from the teachers I did interview, I suggest that follow-up studies seek to include a higher percentage of participating teachers.

Fourth, my study has only moderate external validity due to its case study nature. The case study approach proved ideal for my purposes - to determine how OEE Camp Colman can best facilitate curricular connections between its program and the classroom in order to further its own goals as well as the goals of participating teachers. However, by expanding the study to include interviews with teachers who bring their students to a range of OEE programs, researchers can gain insight into how the varied curricular connection-opportunities that diverse OEE programs provide influence the curricular connections that teachers select.

Furthermore, my data is limited to findings from the literature and to the perspectives of teachers and OEE directors. In the future, I recommend that students be interviewed as well. Although student interviews were beyond the scope of this study, they would shed light on the curricular connections that students (as opposed to teachers and OEE directors) perceive. Additionally, they would enable researchers to determine which pre-trip and post-trip activities significantly impacted students from their own perspectives.

Finally, now that I have identified why OEE Camp Colman is interested in expanding and deepening curricular linkages in the future; how OEE Camp Colman currently connects its program with classroom curricula; what the literature reveals with regard to the best practices and challenges of OEE-classroom curricular integration; and the realities, concerns, interests, and goals of participating teachers and other western Washington OEE directors with regard to curricular integration; there is sufficient background information to design a statistically robust, controlled study. I recommend that such a study incorporate a matched pairs design, assigning treatment groups at participating schools to engage in specific pre- and post-trip activities (of various scopes and depths) and control groups at participating schools to engage in no relevant pre- and post-trip activities. Students in both treatment and control groups could take tests or participate in interviews pre-trip, immediately post-trip, and several months after the trip, to determine the impact of various curricular connection activities. The tests might assess any or all of the

following: academic achievement, career interests, self-esteem and motivation, evidence of environmental stewardship or interest in participating in environmental stewardship, or teamwork. Although several controlled, peer-reviewed studies address the effects of linking off-campus field experiences with classroom curricula (Smith-Sebasto and Cavern, 2006, Gutierrez de White and Jacobson 1994, Farmer and Wott, 1995, Stern *et al.*, 2008), they do not provide insight into or compare the varying impacts of different types and scopes of integrative activities.

The future research that I suggest could significantly advance understanding ofOEE-classroom curricular connections. That said, the current study has already filled two critical research gaps: a lay-of-the-land exploration of current OEE-classroom integrative practices and an assessment of real-life barriers to such integration. But not only does the study shed light on previously unanswered questions, ;t provides concrete, well-founded recommendations for bolstering curricular connections between Camp Colman and classrooms. Clearly,OEE programs such as OEE Camp Colman positively impact hundreds of thousands of students each year; enhanced curricular connections between these programs and the classrooms they serve could substantially augment that impact.

Appendix A - Interview Questions for DEE Directors

Quantitative Questions:

(A) How many different schools does your QEE program work with each year?

(B) How many plivate vs. public schools does your QEE program work with each year?

(C) How many students come to your QEE program each year?

(D) Which grades does your QEE program work with?

(E) What is the avcrage number of students per study group?

(F) When was your OEE program founded?

(G) How much do you charge schools, student for a 2-night, 3-day OEF program')

Qualitative Questions:

(I) What is your role in your organization') How long have you been working for your organization? How long have you been working for your organization in this capacity?

(2) Does your OEE organization develop and make available pre and post actiVities that integrate the OEE program with curriculum back in the classroom? Why or why not?

(3) What language do you use for cunicular "integration" between your and classroom cUITicula? Do you use "integration" or do you use another term (i.e. "extension" or "pre-trip and post-trip activities" or "connection" or "the school pal1nership program" etc.)"

(4) When did your OEE orgallization begin providing suggestions for cUllicular integration pre- and post-trip? What triggered this and why?

(5) Who developed the pre- and post- activities? How did this/these person/people decide which activities and concepts were impol1alltto include') IfOEE staff developed the activities, did you vet the activities with teachers?

(6) Do you attempt to assess whether cUITicular integration is taking place between your OEE program and the classroom? Ifso, how? What are you learning about the effectiveness orthe cUITicular integration? Are you considering assessing this integration in the future?

(7) Do you know what percentage of teachers engage in pre-visit preparations? To what degree and in which ways do teachers prepare their studcnts?

(9) In your opinion, what would successful cunicular integration look like?

(8) What arc the biggest challenges your OEE program faces with regard to successfully enabling the integration of classroom and OEE cUl1icula')

(10) HolY do the OEE instructors/educators view the integration of tile OEf curriculum with CU1Ticuium back in the classroom?

(II) In what ways are you able to tailor your OEE program to suit the curricular needs of each individual school and teacher and the leall1ing needs of the children? What are the greatest bal1'iers to tailoring your program to each teacher?

Appendix B - Interview Questions for Teachers

Quantitative Questions:

(A) How many years have you been teaching?

(8) How many years have you been taking your students to QEL schools?

(C) How many years have you been taking your students to QEL

(D) Is your school public of private?

(E) What grade do you teach?

(F) Rate your level of OEE training before becoming a teacher. This includes college courses, internships, OEE instructor experience, etc (1-5). (I =No JOxperience; 5 =Extensive Experience).

(G) Rate your level of OEE training since becoming a teacher (1-5). (I =No Experience; 5=Extensive Experience).

(H) Rate the level of integration af OrE Camp Colman cUlliculum with your classroom cUJTiculum (1-5).
(I =No Integration; 5 Extensive Integration).

Qualitative Questions:

(I) What is the name of your school"

(2) How would you describe the socia-economic range of your students'.' Is a significant propollion of your student body of a pallicular ethnic minority?

(3) What was the range of yuur students' camp exposure plior 10

(4) Is going 10 a residential OIE program like Camp Colman required by your school or your district? If not, why do you choose to go? Is your school anrl'or district SuppoJ1ive" Explai:1.

(5) OEE programs in Western Washington. Why do you choose

(6) Which activities did your students participate in at ('amp Colman" Why did you choosc these activities?

(7) Do you think that linking Camp Colman curriculum with classroom cuniculum is important') Why or why not?

(8) Is your Camp Colman experience part of or linkcd to classroom unit, or is il experience? If it is part of a larger unit, will you describe the unit')

(9) Do you have copies of your OI:E-related lesson plans, activities, or objectives that you could e-mail or mail me?

(10) or barriers do you experience (or foresee) regarding the integrdtion of Camp Colman curriculum with classroolll curriculum?

(II) How can Camp Colman help you expand and deepen the links between its program and classroom curriculum?

(12) If there is one thing that could be clone to beller prepare your students for Camp Colman, what would it be?

(13) Do you "check off" any of your Essential Academic Lealllling Requirements (EARLS) or GLEs by taking your students to OEE Camp Colman? Which ones? To what extent is this important?

Appendix C - Verbal Survey for Teachers & Camp Colman

Rate your interest in the following on of 1-5 (I =Not Interested, 5= Extremely Interested)

(A) Camp Colman posts pre-tlip and post-trip curricula on their *website.*

(B) Camp Colman *mails* you a packet of pre-trip and posl-tl'ip cunicula.

(C) Camp Colman sends instructors to your school *pre-trip* to engage students in OEE-related activities.

(D) Camp Colman sends instructors to your SellOO! *post-trip* to engage students in OEE-related activities

(E) Camp Colman develops activity kits with lessons and supplies that teachers can check-out and bling back to their classrooms.

(f) Camp Colman develops an on-line teacher blog on which teachers who bring their students to Camp Colman can connect with one another and share ideas about activities that integrate Camp Colman with the Classroom.

(G) Camp Colman develops teacher in-services in which teachers can come to Camp Colman for a day or a weekend to leam more about Camp Colman's cUll'iculum and to engage in example hands-on activities that integrate Camp Colman cUll'icuJum with classroom cUll'iculum.

(H) Camp Colman dcvelops a Kids Summit (or conference) in late spring in which a teacher and few student representatives from each school come back to Camp Colman for a day to give a presentation on a project they have worked on back at school that stems from or is related to something they Ieamed or experienced at Camp Colman. This way kids from different schools can leam from each other.

(I) Camp Colman asks students to write a "Dear Camp Colman" letter before they come. ([I) this letter they list their hopes and fears about the upcoming experience, they describe their previous camp and camping experiencc, and they mention what they are most interested in leaming at Camp Colman).

(1) Camp Colman asks you (the teacher) to fill out a more extensive goals and objectives sheet pre-trip.

(K) Camp Colman asks you (the teacher) to fill out a more extensive evaluation posl-tlip.

(L) Camp Colman's OEE Director goes to your school to meet in person with you (the teacher) pre-trip \0 discus goals and objectives.

(iVI) Camp Colman s OFE Director talks over the phone with you (the teacher) pre-trip to discuss goals and objectives.

(i\) Onlhe last day or Colman asks students to write a postcard to themselves. These will be mailed to students (or to the school) months later.

(0) Camp Colman devclops a field journal that teachers can work on w.' students pre-tlip and posl-tlip.

(P) Calnp Colman sends a staff member to your school's parent night to talk to parents about the upcoming Camp Colman tlip.

(Q) Camp Colman develops a list of vocabulaly and species (plants and animals) relevant to Camp Colman.

(R) Camp Colman develops a list of books and websites related to Camp Colman cUlTiculull1.

(S) Camp Colman works with teacbers and students to develop a stewardship project thai both benefits the students' local/school communities, and is related to Camp Colman cUlTiculum.

Which idea(s) to you most? Why?

Do you have any other comments aboul any of the above ideas')

Can you think of another idea to help enhance the connection between Camp Colman and the classroom that yOll would be interested in pursuing? If so, please describe.

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