Fostering Stewardship and Citizenship:

Action Research in Place-Based Education

Erin E. Morgan

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Amy Verbeten	Noël Cox Caniglia	Vanessa Gray
M.A. Education	Ph.D. Sustainability Education	M.A. Education
Graduate Mentor	Core Faculty	Second Reader

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Abstract

This paper describes a teacher's action research within the place-based education (PBE) program at Forest Grove Community School (FGCS), a first through eighth grade public charter school in Forest Grove, Oregon. It seeks to evaluate the effectiveness of the program in delivering the skills, knowledge, values and internal locus of control necessary to promote stewardship and citizenship among students. A review of literature discusses the factors that contribute to the development of stewardship and citizenship, and how the philosophy of place-based education supports these factors. The researcher uses mixed methodology to gather diverse data regarding the school's program and its impact on the student body, and a collaborative action research approach to examine the program's strengths and identify areas for development. Instruments utilized for data collection include a survey administered to students and parents, teacher reflections, student work samples, and records of professional development meetings. An evaluation of the PBE program details the strengths and potential areas of development revealed through research. The conclusion presents several recommendations to the school for enhancing stewardship and citizenship development among students.

Keywords: stewardship, citizenship, place-based education

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Chapter One: Context and Objectives of Research

Forest Grove Community School (FGCS) is a public charter school founded upon a place-based, experiential and personalized learning philosophy. Its approximately 200 students, first through eighth grades, are divided into four mixed-grade levels consisting of two grades each. Demographically, the school's population is 72% Caucasian students, 13% Hispanic students, and 15% multiracial or other ethnic minorities. Only 2% of students are English Language Learners. Approximately 19% receive special education service according to the Oregon Department of Education, compared to a state average of 11%. Approximately 27% of students qualify for free and reduced state lunches, compared to a state average of 35% (National Center for Education Statistics). FGCS is located downtown Forest Grove, a community of 20,000 that rests on the western border of Portland, Oregon's suburbs, surrounded by agricultural land and state forest.

The school's mission states that "Forest Grove Community School will provide a learning environment based on the development of mutually beneficial connections between school, family, and environment so that, upon graduation, students can take their places as engaged citizens in a changing world" (FGCS Bylaws, 2007). FGCS students are familiar with the school's three-word mantra, often used to summarize the school's vision: "Scholarship, Stewardship, Citizenship." Fundamental to the goal of inspiring scholars, stewards and citizens, classroom teachers develop project-based units in connection with weekly local excursions, known at the school as "Out and Abouts" (O&As). This structure encourages teachers to integrate standards-based curriculum with

authentic hands-on projects, in order to forge connections with the local environment and community in the process.

As the Experiential Education Teacher at FGCS, I work collaboratively with classroom teachers to design O&As that engage students more deeply in curriculum, educate them about the community and environment, and provide them opportunities to apply their knowledge to serve their community. I act as co-teacher in mapping out units, preparing students for the excursions, guiding trips when appropriate, and leading debriefs, reflections and related activities in the classroom. This position within the school offers me a unique, overarching perspective of how the place-based education (PBE) program works for teachers and students. My thesis research at FGCS is an opportunity to apply my knowledge of the community and passion for PBE towards evaluating and improving the PBE program.

I entered this project with the assumption that experiential education, such as the place-based projects and activities offered at FGCS, is more engaging for students, and ultimately a highly effective pedagogic tool for advancing both academic and life skills learning. A variety of literature supports the conviction that experiential education is effective in motivating students and deepening their learning (Dewey, 1938; Carlson & Wurdinger, 2010; Montessori, 1949). Place-based education in particular, by providing students the opportunity to connect with the community and apply learning in an authentic context, is a positive way to foster students' stewardship and citizenship skills and values (Sobel, 1996, 2004; Orr, 1994). Through my work as an educator, I have come to believe that students who are taught the skills and knowledge to make a difference in their communities will gain confidence in their capacity as agents of change,

and that empowered students are more likely to seek ways to act on their values in the future. I am also convinced that a thriving and sustainable democratic society hinges upon the existence of schools like FGCS that emphasize these types of educational opportunities.

At the same time, I have borne witness to the many challenges that stand between the philosophical ideals of place-based education and the day-to-day reality of running a public school. I have worked with teachers struggling to balance time-intensive project-based curriculum planning with meeting the needs of students who are three years behind their grade level in literacy. I have been obligated to give up on learning opportunities because the budget wouldn't support another bus rental, or turn around on hiking trips as students turned blue under a wintery Oregon downpour. I have crafted trips that sounded relevant and authentic, only to discover that community professionals enlisted to share their expertise are unsuccessful at engaging eight-year-old students. I have witnessed students sigh at the prospect of another outing instead of light up with anticipation, and have seen teachers pushing themselves to exhaustion in order to create exceptional learning experiences for students. So, while the excellent literature regarding place-based education has convinced me of its benefits, I have also learned that it is essential to explore how to apply this theory more successfully for teachers and students within the FGCS community.

Research Questions

I elected to explore these challenges from diverse angles, seeking to both evaluate and develop the program at FGCS through a collaborative action research approach. My research began with a personal design challenge: How might I most effectively support

FGCS's place-based education program to foster student development as informed, empowered and motivated citizens and stewards? Within this focus, I chose to investigate two broad areas of inquiry, supported by several specific questions:

1. How effective is the current place-based program at FGCS in fostering stewardship and citizenship?

- To what degree does FGCS's place-based program provide students the skills and knowledge required to practice stewardship and citizenship?
- To what degree does it support the development of values required to practice stewardship and citizenship?
- To what degree does it empower students with an internal locus of control required to practice stewardship and citizenship?

2. How might the FGCS program better support the development of stewardship and citizenship among students?

- How might O&A and project planning methods better foster citizenship and stewardship?
- How might reflection methods offered to students better support their development as citizens and stewards?
- How might a professional learning community (PLC) designed to support and energize teachers impact the effectiveness of FGCS's place-based education program?

These questions guided me in evaluating the effectiveness of FGCS's current place-based program and in identifying areas of growth and concrete strategies for improvement.

Organization of Thesis

In Chapter Two, I review literature regarding the development of effective citizens and stewards, how PBE offers an educational approach to delivering these elements, and the barriers that schools face in implementing PBE. Chapter Three discusses the methodology and methods used, and areas of potential bias in the research. Chapter Four presents the findings of the program evaluation, and discusses the strengths and areas of development in FGCS's PBE program. In Chapter Five, I offer recommendations for the FGCS program and suggestions for further research. I also outline my next steps in an on-going action research process, and conclude by sharing some of my hopes for the outcomes of this research.

Chapter Two: Stewardship, Citizenship and Place-Based Education in Literature

Public schooling has the potential to cultivate compassionate problem solvers: young people critically aware of the challenges posed by environmental change and social inequality at both the local and global levels, imbued with the drive to seek solutions and empowered with the tools and the capabilities needed to bring these solutions to reality. The Forest Grove Community School (FGCS) is grounded in the belief that if provided the opportunity to develop as citizens and stewards, all students will be capable of making meaningful contributions towards the health of our natural landscapes and our communities. The school promotes the three qualities of "Scholarship, Stewardship, Citizenship," and strives to build students' capacity to be thoughtful agents of change within their human and more-than-human communities. This thesis investigates 1) to what degree the place-based program at FGCS provides students with the knowledge, skills, values and confidence required to practice stewardship and citizenship, and 2) how the program might improve towards these ends.

This literature review begins by supporting the assumption that it is essential, for both students and society, that public school curriculum fosters stewardship and citizenship skills. It then outlines the key factors identified in the literature for effective participation in community action, and describes how these factors—social and ecological literacy, values, and an internal locus of control—contribute to citizenship and stewardship behavior. I summarize the literature regarding how place-based education (PBE) and other experiential pedagogies foster these essential ingredients by making learning engaging, authentic, relevant, socially just and ecologically sustainable. While literature provides abundant reference to the benefits of PBE, it does not adequately

address the institutional, cultural and logistical challenges that arise in implementing PBE programs. Nor can literature possibly speak to the unique needs and challenges that exist in every school. Because the existing research and documentation to not adequately address these logistical, local and pragmatic challenges, it is both necessary and valuable to seek out and document locally relevant educational approaches for inspiring student citizenship and stewardship. This thesis involves such an investigation.

The Need for Student Citizens and Stewards

Many critiques of American education concern the extent to which public schools, by focusing on quantifiable academic standards and economic success, alienate students from the communities and environments outside of their school walls (Louv, 2008; Orr, 1994; Smith & Sobel, 2010). The current generation of students will emerge from the school system into a globalized economy which may not support the promise that a good education is enough to ensure success in today's job market (Spring, 2010), and in which environmental degradation and socio-economic inequality are increasing realities (Hayward, 2012). Stankorb, Stapp and Wals (1996) proposed that, "students are often an untapped source of renewable energy and creativity with ideas and concerns of their own" (p. 2). Too often this potential lies dormant within the school institution, where students' energy is dedicated to solving abstract mathematical problems and writing essays solely for the eyes of the teacher. In order for youth to serve as the problem solvers of their generation, "students need to know that they can be forces of constructive change, and that their involvement is needed in the world," (Stankorb, Stapp & Wals, 1996, p. viii). The literature presented below illustrates how schools can support students

in developing the ecological and social knowledge, practical skills, values and agency to leave school as confident and caring stewards and citizens.

Fostering stewardship. Even the youngest students at FGCS, if stopped along the painted walkway that winds through our central courtyard and asked what *stewardship* means, would offer a definition of stewardship as "caring for place." I will define stewardship, then, as *a deliberate and thoughtful action towards the health or regeneration of a place*. The basis of stewardship behavior is the knowledge of how the ecological systems of a particular place function and how human action affects those systems, as well as the skills to notice natural phenomena and implement appropriate action. Barlow and Stone (2005) labeled this synergy of knowledge and skills as *ecological literacy*. Orr (1994) called this same collection of qualities *ecological intelligence*. Regardless of the term employed for knowledge and skills around living well in our place, many environmentally concerned educators agree that providing this combination of experience and skills is fundamental to inspiring the next generation of stewards.

John Burroughs explained, "Knowledge without love will not stick. But, if love comes first, knowledge is sure to follow," (as cited in Sobel, 2004, p. 92). Thus, in addition to the acquisition of factual information and practical skills, environmental stewardship relies on the emotional connection between a child and his or her place. Such an emotional connection nourishes a quality Chawla (1998) described as *environmental sensitivity*. A variety of literature attests to the value of direct natural experiences in nurturing a child's love for the earth (Athman & Monroe, 2001; Carson, 1965; Orr, 1994; Sobel, 1996; Smith & Sobel, 2010). Speaking from his extensive

experience working with students in the outdoors, Cornell (1979) attested that "I've seen that if people have a positive, joyful first encounter with some aspect of nature, they will become protective towards that life form or environment," (p. 86). Michael also emphasized the primacy of emotional connection: "children who come to understand and love their home places will grow into engaged, effective citizens committed to preserving those places" (as cited in Barlow & Stone, 2005, p. 121). Thus students need knowledge, skills *and* positive experiences in their environments to fully understand and value spaces and to exercise stewardship in their communities.

Fostering citizenship. As stewardship is the act of caring for one's place, citizenship at FGCS is "caring for people." Citizenship will be defined as a *deliberate action to support the well being of individuals or groups within one's community.* Citizenship requires the knowledge of local political and social systems, skills in carrying out democratic action, and a commitment to participate in the health and well being of a community (Hayward, 2012). In his early vision of public education in the United States, Thomas Jefferson postulated that the key skill needed for effective citizenship was literacy: citizens who read and interpret information freely, he believed, would be prepared to learn about any issue independently (Spring, 2010). In the modern era of mass media, technology and corporate political influence, I believe that the capacity for political action requires not only processing information, but also knowing where to find it, interpreting it accurately and critically, and knowing how to advocate for change. Social justice and democracy depend also upon a citizenry that possesses practical democratic skills and experience interacting with diverse cultural and social groups (Allen, 1999). These attributes of knowledge, skills and values that focus on

community—which define "social literacy"—are essential to shaping students as active citizens.

Schools that seek to build students' social literacy emphasize active teaching of skills such as communication, democratic deliberation, perspective taking and decision-making within classrooms (Banks & Banks, 2005; Hayward, 2012; Miller, 2000; Rothstein & Santana, 2001). From this perspective, practicing citizenship should start on a modest scale, by utilizing skills to collaboratively solve accessible and tangible problems (Gruenewald & Smith, 2008; Hayward, 2012). Students who have opportunities to develop skills in a meaningful way in the classroom will be better equipped to take citizenship action to solve problems beyond the classroom and care for members of their local and wider communities.

The intersection of stewardship and citizenship. Though these concepts have been presented separately, in fact a deep relationship exists between stewardship and citizenship. Gruenewald and Smith (2008) described the need to reconcile environmental education and education for social justice, viewing the two as inextricably intertwined and mutually beneficial. Stankorb, Stapp and Wals (1996) defined environmental education as encompassing "political, social, economic and bio-physical" realms (p. 4), while Thomas and Hoffman (2003) suggested that it should develop an understanding of "many environments - natural, man-made, cultural, and technological" (p. 6). When students care for their place, they are also caring for the inhabitants of that place, human and non-human. When students take action to care for their community, they are also generating a healthier environment for people within that community. As Berry

contended, "you can't save the land apart from the people, to save either you must save both" (as cited in Louv, 2012, p. 270).

These broad frameworks offer an intentional perspective through which to view both stewardship and citizenship as forms of environmental action. At FGCS, this overlap is sometimes acknowledged by referring to students as "stewarding citizens." For the purpose of this paper, I refer to *stewardship* to describe actions primarily taken to support the health of ecosystems or environmental sustainability, and *citizenship* to discuss political processes or social justice action. However, these two capacities are not exclusive, and often must be used in concert to create meaningful change.

Transforming literacies into action: locus of control. Prochazka (1995) offered the term "internalized learning" (p.145), to characterizes circumstances in which the learner feels a responsibility to carry his concerns into action. Much of environmental education rests on the idea that direct experience provides an emotional connection between a person and his environment, which then fuels his value system and inspires him to act (Bluhn, Hungerford, Ramsey & Volk, 1998). However, the acquisition of ecological and social literacies in students does not necessarily correlate with independent acts of citizenship and stewardship (Athman & Monroe, 2001). While action does appear more likely to emerge from a strong foundation of knowledge and values, Thomas and Hoffman (2003) also acknowledged that there often exists a "cognitive dissonance" between what we value and the extent to which we move towards actualizing those values (p. 30). This suggests that the conventional "knowledge → values → action" model is incomplete (Bluhn et. Al., 1998), and points to a final necessary ingredient of

effective stewardship and citizenship education: inspiring the initiative and confidence to act.

Much of the research related to inspiring students social or environmental action suggests that student empowerment and sense of self-efficacy are just as important as the knowledge about problems and desire to act (Athman & Monroe, 2001; Bluhn, et. al., 1998). This belief in one's capacity to make a difference can be called *internal locus of control* (Athman & Monroe, 2001, p. 37) or *social agency* (Hayward, 2012). Research has found that the variables most closely correlated with environmentally responsible actions include the students' perceptions around knowledge of action strategies, skill in using action strategies and the efficacy of their actions (Bluhn et. al., 1998; Hwang, Kim & Jeng as cited in Athman & Monroe, 2001). Students' self-perception as effective activists is key in fostering their capacity for stewardship and citizenship.

Literature agrees that the best way to support students' internal locus of control is by offering students the opportunity to take on the roles of citizens and stewards. Wilson (1995), who conducts peacemaking education with adolescents, maintained that tackling authentic and relevant social and environmental issues can help students "make transference," (p. 276), that is, realize that they, themselves, can be agents of change. The process of achieving small victories through practice in the classroom builds students' confidence that they may be able to take action in other realms (Bluhn, et al., 1998). In envisioning a school environment that would prepare students to be effective environmental and social actors, the evidence presented above suggests the need to include the following components in the curriculum: social and ecological literacies, the skills to implement action, direct experiences that foster in students a value for their

environments and communities, and opportunities for students to develop an internal locus of control by engaging in authentic citizenship. Place-based pedagogy has the potential to deliver all of these educational components and to foster informed, passionate and confident stewards and citizens.

Opportunities within Place-Based Education

Place-based education (PBE) is a pedagogical philosophy coined by the Orion Society. It is grounded in the belief that education should prepare students to contribute to the "cultural and ecological integrity of the places they inhabit," (Knapp & Woodhouse, 2000, p.2). PBE advocates engaging students in hands-on, real-world learning experiences in their communities and natural environments (Sobel, 2004) and relies on resources outside the school door to provide experiences that are "uniquely possible" within local contexts (Gruenewald & Smith, 2008). The Rural School and Community Trust elaborates: PBE "is learning that is rooted in what is local - the unique history, environment, culture, economy, literature, and art of a particular place. The community provides context for learning, student work focuses on community needs and interests, and community members serve as resources and partners in every aspect of teaching and learning," (as cited in Smith & Sobel, 2010, p. 23). Other models of education that practice PBE include Expeditionary Learning, Environment as an Integrating Context, Problem-based learning, Foxfire's cultural journalism (Gruenewald & Smith, 2008) and "bioregional education" (Knapp & Woodhouse, 2000). Though each of these models carries a distinct emphasis, they all focus on a learner-centered, hands-on approach that encourages higher-level thinking through authentic, contextualized projects (Knapp as cited in Gruenewald & Smith, 2008). PBE both promotes academic

excellence and encourages students to learn and practice stewardship and citizenship skills, essential elements for an ecologically and culturally sustainable society (Knapp & Woodhouse, 2000).

The Place-Based Education Evaluation Coalition conducted an evaluation of more than 100 schools in 12 states, using adult and student surveys, interviews and observations to evaluate the use of place-based education models within schools (2010). They found that PBE programs have been effective in fostering students' connection to their communities, boosting student achievement, increasing test scores in math and science, and augmenting levels of student engagement. Carlson and Wurdinger (2010) linked PBE to student ownership of learning, increased high-order thinking, and group cohesion. Sobel (2004) concluded that PBE is effective in inspiring stewardship and civic-mindedness, thus playing a vital role in revitalizing communities and improving environmental quality.

This thesis examines four aspects of PBE that distinguish it from conventional public education approaches: (a) deeply engaging learning, which builds a strong knowledge base through authentic and relevant learning experiences, (b) higher-level learning, which strengthens crucial skills such as problem-solving and critical thinking, (c) socially just and environmentally sustainable learning, which builds students connection to and value for their places and communities, and (d) empowering learning experiences, which demonstrate to students their ability to be effective agents for change. These four facets of place-based education demonstrate its potential as a powerful tool for generating the knowledge, skills, values and internal locus of control fundamental to fostering stewardship and citizenship among students.

Engaging learning. By fostering a hunger for learning through education, explained Montessori (1949), "curiosity becomes an impulse to learn and from this the strength and attraction for study comes," (p. 541). Research shows that when learning is experiential, contextualized and student-driven—fundamental characteristics of place-based education—students are more engaged (Sobel, 2004; Orr, 2004). In turn, engaged students are more able to absorb and retain new information, and to apply their knowledge towards creative and responsible action.

Place-based education begins by providing students the opportunity to directly engage with sensory experiences in their communities and local environment that make learning tangible and deeply relevant. Kolb (1984) argued that, in a world "awash in symbolic communication," it is necessary to incorporate "the texture and feeling of human experience," (p. 2) into education. Dewey (1938) and others (for example, Coleman, 1995) testified that concrete experiences provide the learner with a necessary foundation to assimilate and apply new knowledge. Research supports the benefits experiential learning, linking authentic hands-on projects with increased academic achievement and student engagement (Carlson & Wurdinger, 2010) as well as improved attendance and fewer behavior problems (State Education and Environment Roundtable, 2000). A study of schools practicing PBE (in this case, termed "Environment as an Integrating Context") found that 98% of teachers reported an increase in enthusiasm among their students and 89% that students were more on task during lessons (Lieberman & Hoody, 1998). When students are able to experience ideas, reflect upon them, create their own understandings and test them actively in the context meaningful experiences in their own community, the quality of their learning improves.

In addition to its inherent value in promoting stewardship and citizenship, the experiential nature of PBE promotes inclusivity through curriculum that is responsive to different learning styles. While PBE has been linked with increased student achievement across the subject areas (Lieberman & Hoody, 1998), the Model Schools project in Florida found that academic scores showed the largest gains among lower income and minority students, (Toth-King and Marcinkowski as cited in Sobel, 2004). This may be in part because lower income and minority students enter the school institution with less *cultural capital*, Putnam's denomination for the economic values of learned behaviors, knowledge and cultural experiences (Spring, 2010). Currently, since mainstream culture is dominant within schools, students of color are often required to adapt to new norms and expectations in order to succeed within this setting (Banks & Banks, 2005). PBE's community-based projects give value to other types of skills and knowledge that these students may be uniquely able to contribute.

Gardner (1983), known for his theory of multiple intelligences, criticized modern secular schooling for its focus on "abstract symbolic media" (p. 353), which favors logical-mathematical and linguistic intelligences and thus limits the development of other forms of intelligence. PBE, conversely, contextualizes problems-solving, and thus creates a need for diverse learning and thinking styles, both valuing this diversity and better reflecting the value of varied sets of knowledge in society. "Here is perhaps the most delicious turn that comes out of thinking about politics from the standpoint of place," offered Gary Snyder, "anyone of any race, language, religion, or origin is welcome, as long as they live well on the land" (as cited in Gilbar, 1998, p. 366).

Place-based education further increases engagement by taking learners into the authentic context in which learning is used. Dewey (1938) emphasized that "experience does not occur in a vacuum" (p. 40), but within the context of the history, culture, local community, and school environment. However, conventional public education still tends to favor "decontextualized classroom instruction" (Gruenewald and Smith, 2008, p. xiii), passing over community learning opportunities in favor of disintegrated, in-class instruction. Conversely, PBE breaks down the walls school between school and community, demonstrating to students the concrete applications of learning in field such as engineering, journalism or environmental restoration. This pedagogical strategy transforms the math equations, writing conventions and scientific methods from abstract, meaningless tasks into valued skills students can use to understand and improve their community.

Wigginton (1973), founder of the well-known Foxfire project, inspired his journalism students by challenging them to rediscover the rich traditional knowledge of the Appalachian region in which they lived by conducting and publishing interviews with community elders. He grounded his approach to education on a basic assumption: If we expect students to leave school capable of creating solutions to world problems, curricula must reflect and integrate with the world. When students take on authentic tasks outside the classroom, the knowledge gained reflects needs and expectations of the real world. As students see the impacts of their learning within their community, their desire to learn is reinforced (Kaye, 2004).

Additionally, PBE engages all students through a developmentally appropriate approach to education. PBE is built upon the 17th Century philosopher Comenius' idea

that "knowledge of the nearest things should be acquired first, then those farther and farther off," (Sobel, 2004, p. 7). Child development theorists pose that making learning concrete for students at an early age encourages them to explore the world at their own pace and form independent understandings (Berk, 2009; Montessori, 1949). Echoing the Piagetian stages of development, Sobel (1996) explained how PBE can bolster the natural learning process of youth. He identified developmental stages at which different types of place-based interaction is ideal, reminding us that "what's important is that children have an opportunity to bond with the natural world, to learn to love it and feel comfortable in it, before being asked to heal its wounds" (p. 10). Roberts (2002) also recommended meeting the needs of youngest students by ensuring that service-learning projects are locally based with tangible outcomes. Through experiential and contextualized education that meets learners' needs at all developmental levels, PBE transforms learning into a deeply engaging experience, thus giving the ecological and social knowledge it delivers potent sticking power in children's values and worldview.

Higher level learning. Linda Darling-Hammond, a professor of education at Stanford, found that teamwork, problem-solving and interpersonal skills were the top three skills in demand in the professional world (Davis, 2003). These skills, along with critical-thinking, decision-making, communication and technological literacy are termed *21st Century skills*. Such skills are equally fundamental for stewardship and citizenship, but often are not addressed explicitly within school curricula. PBE meets this demand head-on by presenting students with complex, authentic projects that invite them to apply their knowledge, skills and energy to collaboratively address the needs of their communities (Smith & Sobel, 2010). Jeffrey Hays, the director of City View Charter

School in Hillsboro, Oregon, shared that his confidence in the school's expeditionary learning model stems from the feedback he consistently receives from partner organizations: that students are always curious, engaged, and able to think critically and ask good questions (personal communication, October 11, 2013). Other schools that have used PBE cited increased self-directed learning, teamwork and collaboration among students (Smith & Sobel, 2010). As students research community issues from first-hand sources, select among various actions, enact collaborative solutions and reflect upon their outcomes, they are actively practicing the analytical and problem-solving skills so desired in the work market.

High-level thinking skills are engaged, in fact, merely by the act of getting outside. Louv (2008) explains that being in nature inspires us to gather rich information through our many senses, and employ creative thinking through an exploration of the "loose parts" available in any natural environment (Nicholson as cited in Louv, 2008). Kellert (2012) argued that "the abundance of actual and symbolic opportunities nature offers for naming, sorting, and classifying is unrivaled by any other aspect of the child's world" (p. 68). These natural experiences thus support critical cognitive skills. The State Education and Environmental Roundtable (SEER, 2000) found a correlation between time outdoors and increases in test scores across the subject areas, as well as in critical thinking, decision-making and problem solving.

High-level thinking is also strengthened by the way in which PBE integrates learning—both across the academic content areas, and between school and the outside world. Traditional public education, which neatly isolates math, science and social sciences within their disciplinary boundaries, prevents students from seeing the

relationships between subjects or the purpose of their learning (Gatto, 2005; Kaye, 2004). Freeland and Hammons (1998) advocated that learning should cross subject lines in order to help students draw connections and gain a broader perspective, explaining, "integration is desirable because life is integrated" (p. 12). In classrooms employing integrated units, children are generally more confident and ready to learn, engaged, self-managing, and work better together as a community (Freeland & Hammons, 1998). Place-based, authentic projects necessarily rely on this type of interdisciplinary work.

Place-based education further encourages high-level thinking skills by embedding classroom learning within the greater community. When school, home and social worlds are integrated in this way, students show greater engagement and achievement (Coleman & Hoffner as cited in Smith & Sobel, 2010). Learning within an authentic context contributes to students' discovery of a sense of purpose around their learning (Smith & Sobel, 2010; Miller, 2000) and fosters system thinking, which is key to bringing about large-scale sustainable change (Kapra as cited in Barlow & Stone, 2005). In fact, David Narum, contributor to Edutopia, suggested that integrated place-based education encourages the type of advanced thinking needed to create systems that will not just sustain, but regenerate communities, economies, and natural spaces (personal communication, August 20, 2013).

Environmentally sustainable and socially just learning. Another way PBE contributes to the development of active stewards and citizens is the many ways it supports learning that embodies and promotes values around environmental responsibility, sustainability, and social equity (Smith & Sobel, 2010). Along with the

social and ecological literacy provided by the development of in-depth knowledge and skills, these values encourage students toward action.

Firstly, PBE contributes to students' sense of place, and thus value for the natural world. Orr believed that we need to rethink education using the perspective that "all education is environmental education ...by what is included or excluded we teach the young that they are part of or apart from the natural world" (as cited in Barlow & Stone, 2005, p. ix). In other words, education has the power to isolate us or connect us with the world around us. PBE sides strongly with connection, by striving to foster strong bonds between children and their environment, whether it encompasses open acres of forestland, schoolyards or city streets.

Louv (2008) expressed concern that environmental stewardship may become endangered in the coming generation without more attention to supporting children's "need to explore, to get their hands dirty and their feet wet" (p. 147). His research on the rising phenomena of youth's detachment from nature, or *nature-deficit disorder*, evidenced the benefits, both for individuals and the environment, of re-connecting students with their place (2012). Orr (2004) echoed Louv's apprehension and called for a "biophilia revolution," in which children can bond with their environment. Educators can play a role by encouraging childhood exploration and offering community-based learning experiences. Children who spend time outdoors hone their observational skills and become acquainted with local seasonal cycles, relationships between organisms, and human use of spaces. They further develop a sense of place: a grounded understanding of their bioregion that provides a strong value system with which to take action on environmental problems (Sobel, 2004). The Place-based Education Evaluation Coalition

(2000) found that PBE, simply by exposing students to a variety of natural spaces, encourages environmental stewardship. Indeed, Chawla (1998), in interviewing environmentally responsible adults, found that these types of "gateway experiences" during youth served as the strongest motivator of later stewardship behavior. Sobel (1996) explained, "once children feel connected to nature and 'the environment' physically and emotionally, they'll be compelled to seek the hard facts, and they'll take vested interest in healing the wounds of past generations while devising feasible, sustainable practices and policies for the future," (p. ix).

Place-based education can also build upon students' social literacy and values by providing a repertoire of experience outside those they might normally encounter in their community or culture (Coleman, 1995). Hayward (2012) found that exposure to rich formal and informal social interactions is most conducive to students' formation of democratic behavior. PBE, by consistently seeking opportunities to make connections between students and sectors of the community, argued Gruenewald and Smith (2008), provides a "rooted experience" of diversity (p. xii) and thus "systematically inducts students into the knowledge and patterns of behavior associated with responsible community engagement" (p. xvi). Education that pulls students into the community also helps integrate a broader range of ways of knowing, teaching students to value diverse perspectives (Banks & Banks, 2005), and question those they might otherwise take for granted as truth.

Place-based education encourages an ethic of citizenship by allowing students to practice civic action and community service. PBE often incorporates service learning, a method of teaching in which learning is deepened through service and reflection (Kaye,

2004). Roberts (2002) highlighted that service learning increases classroom cohesion, teaches democratic skills, instills an ethic of service, promotes the development of social consciousness and builds positive relationships between school and community organizations. By grounding learning in place, PBE makes students more socially aware and provides them the skills and motivation to take action (PBEEC, 2010).

Empowering learning. Stewardship and citizenship rely not only on the knowledge, skills and values possessed by children, but also their sense of self-efficacy, or confidence in using their social and ecological literacies to take action. Place-based education, by inviting students to take on the role of knowledge creators, offering them voice and choice in projects, and engaging them in authentic projects with real audiences, empowers students as agents of change.

In contrast to the climate of the current school system, dominated by *Common Core* standards and teacher-directed learning, PBE and other experiential models allow students to express themselves and advocate for their preferences. In his experiential pedagogy, Dewey (1938) stressed the importance of individual freedom, explaining, "desires are the ultimate moving spring of action" (p. 70). Students who are invited to contribute to the selection of projects themes, assessments, pace and modes of learning they participate in will have greater ownership in their learning, and as a result will retain more, challenge themselves to higher levels of achievement (Allen, 1999), and be more likely to apply learning to new situations (Roberts, 2002). Neuroscientist Joel Voss stated this relationship well: "if you're not the one who's controlling your learning, you're not going to learn as well," (Davis, 2013).

Student voice can also emerge in the form of the "hidden curriculum" in schools, the lessons about roles and expectations embedded in the culture of the school and classroom (Banks & Banks, 2005). Allowing students to participate democratically in decisions that affect their learning environment can be empowering, and is at the heart of a PBE model (Warren, 1995; Hayward, 2012; Spring, 2010).

Students can also become more confident in their capacities when given the opportunity to construct their own knowledge. Margolin (2005) in describing traditional educational practices among California Native American groups, offered the belief that "when you teach someone something you've robbed that person of the experience of learning it," (p. 70). A number of philosophers and educators stress the value of students coming to an understanding of material independently (Berk, 2009; Carlson & Wurdinger, 2010; Kolb, 1984; McTighe & Wiggins, 1998; Miller, 2000; Montessori, 1949; Rothstein & Santana, 2001) as this deepens the personal relevance of learned content.

This contrasts sharply with what Freire (1970) referred to as the "banking model," a pedagogical structure in which the educators merely deposit known "lifeless and petrified" content to student recipients (p. 57). Students are expected to conform to standards and rules, and teachers are the bearers of knowledge and enforcers of behavior. Instead, Freire offered the notion of "problem-posing education" (p. 67) in which student and teacher become co-learners through a process of action and reflection he terms *praxis*. In PBE, educators are similarly challenged to let go of their role as experts, and become coaches and co-researchers in a process of student-directed inquiry, experimentation, and creation of original solutions. In this re-invented classroom,

"children are no longer perceived to be primarily consumers of knowledge, but creators as well" (Smith & Sobel, 2010, p. 18). This process demonstrates to learners their capacity to generate original information and empowers them to act upon it (Bluhn, et. al., 1998).

Student empowerment is further supported when there is an authentic audience for students to present their final work. Distinct benefits to having an authentic audience are described by several authors. Berger (2003) explained that an audience presence shows students that their contributions are valued, and inspires professional-quality work. Allen (1999) found that a public forum for student work helped develop meaningful connections between students and the diverse cultural groups in the community. An audience can further motivate students to synthesize learning creatively, offer a meaningful venue to assess students, and broaden the impact by educating and inspiring others (Roberts, 2002). The experience of offering thoughtful presentations to an audience builds students' confidence and increases the likelihood that they will be willing to take the risk of sharing their ideas with the public in the future.

A final benefit of place-based education is its impact beyond students' lives: the potential for it to strengthen communities environmentally, economically and socially. As students reach out in the community, they build social capital networks that create more sustainable and resilient communities, while also making concrete contributions to the wellbeing of their communities. Better communities in turn benefit students (Gruenewald & Smith, 2008). As schools become as asset in sustainable community development, communities come to value students' contributions and work with them towards a shared purpose (Hayward, 2012; Smith & Sobel, 2010). In this way, place-

based education creates a learning environment that empowers students throughout their learning experience: students contribute voice and choice to the classroom environment and project selection, forge original knowledge and solutions, present these to an authentic audience, and finally, savor the rewards of seeing tangible benefits their work has produced. Students are thus equipped with a model of how to take on issues they confront outside of the classroom, and gain the confidence to take action.

The recipe for stewardship and citizenship. The literature above details why place-based education is excellent at nurturing engaged, thoughtful, empowered and socially and environmentally minded citizens. If the literature only provided a recipe for achieving these outcomes, it would be a simple task to implement place-based education in all schools. However, PBE as a concept is not a panacea. It provides only a philosophical construct for fostering student stewardship and citizenship: one that must be interpreted and adapted within the unique context of each educational organization or classroom where it is put into practice. My research is grounded in the contention that only through case study research can the most effective implementation of PBE at FGCS be determined.

Barriers to Implementing PBE in Schools

The literature is rich in descriptions of how place- and community-based education transforms learning into an engaging process that provides participants with the high-level thinking skills, ecological and social knowledge and community values that will guide them to succeed as life-long learners and active stewards and citizens. However, in today's educational climate, a variety of challenges emerge as barriers in

implementing this broadly within public schools. I will now examine these challenges, and how educators and community members might confront them.

Institutional barriers. The public school system depends on federal and state funding to operate. As a result, the institutional structures that direct the discourse and set priorities around public education can impede authentic school reform towards a more just, sustainable value system. The first of challenge facing PBE is rooted in the national discourse that dominates in public education. Spring (2010) describes how schooling was designed in the United States with the fundamental function of providing an economic "return on investment" (p. 23). That is, the work of schools is to "educate workers to help the U.S. economy compete in the global economy" (p. 4). This perspective has given rise to reforms that set academic standards and that punish schools that fail to meet these standards, or that fail to streamline the transfer of students into the labor market (Duncan as cited in Rich, 2013).

While it is important to consider how students will make a living when designing an educational model, it is equally valuable to determine in what kind of society we hope students to be making a living, considering factors such as student identity, social equity, environmental ethic, and even happiness (Berger, 2003; Gatto, 2005; Smith & Sobel, 2010). Under the current discourse that dominates in education, little merit or debate is given to the non-economic benefits that schools can offer society (Spring, 2010), such as student democratic voice, educating for sustainable use of natural resources, or building compassion and culturally literacy among students. This challenge highlights the need to advocate for and share the successes of those schools working to promote alternative values within the public system.

A second institutional barrier is the often-discussed issue of high-stakes testing and the standards-based teaching that accompanies it. In an effort to ensure greater accountability in schools, the federal government, through No Child Left Behind and Race to the Top, has promoted an increasing regime of standards and standardized tests to which schools must adhere to receive federal funds. Mattimore (as cited in Berlatsky, 2001) argues that standardized tests are the most effective way to measure a school's progress since they are easy to administer and evaluate, and in no way prevent critical thinking. State and federal standards, such as the newly developed Common Core and Next Generation Science Standards, are commended for guiding teachers toward rigorous and consistent curriculum. This may be true. However, when high-stakes standardized tests determine the success or failure of a student, teacher or school program, many teachers contend that in-depth learning, creativity and engagement in learning are often sacrificed in the quest for improved test scores (Berlatsky, 2001; Spring, 2010). Others criticize tests for furnishing inaccurate measurements of student performance, perpetuating inequity through cultural bias, and failing to prepare students for effective citizenship (Davis, 2013; Banks & Banks, 2005).

As a solution, Kirst (2013) offered that perhaps these scores could be combined with a diversity of factors to assess schools in a more meaningful way. Barlow and Stone (2005) suggested that we need to remove focus on standards and grading, instead committing energy to engaging students and creating a culture that promotes effort and quality work. However, as long as high-stakes standardized tests in literacy and mathematics remain the primary way that schools are evaluated in this country, little credit will be given to school reforms that foster non-quantifiable skills

such as collaborative leadership, generosity, initiative or artistry, or interdisciplinary project work. Literature rarely addresses the challenge of juggling place-based curriculum and standards-driven curriculum, school philosophy and pressure from federal funding. It is thus necessary to negotiate original solutions on a case-by-case basis within schools.

Cultural barriers. While the institutional barriers described above act on a top-down level, cultural norms regarding the role of teachers and schools exist in all communities. First, although place-based education advocates student-directed learning, it ultimately starts with a teacher taking the reins on the curriculum and intentionally shifting his or her role within the classroom. This requires teachers to "leave behind a lot of the comfortable routines and standard decisions that help teachers feel in control," **(**Allen, 1999) such as worksheets or packaged curriculum, and allow themselves to experiment with new methods in the classroom (Carlson & Wurdinger, 2010). The greatest challenge in making this pedagogical shift may be the way it makes teachers vulnerable: dependent upon the students' interests and abilities, as well as the outside circumstances of the community and environment (Wilson, 1995). If more teachers are able to demonstrate the viability of making this switch from the conventional "banking model" of education towards a more experiential approach, perhaps administrators, families and legislators will begin to accept this as the norm.

A second cultural barrier is the idea that teaching students to cherish the flora and fauna of their neighborhood or the history of their local community may be unrealistic in a globalized society. Increasingly, the job market requires young adults to move across the country for work, to communicate with individuals around the globe, and to grasp the

complex interrelationships between global economics and politics. For this reason, PBE is critiqued for its disconnection from complex global realities (Gruenewald & Smith, 2008). Conversely, PBE advocates take the stance that "being rooted has value and deserves attention," (Smith & Sobel, 2010, p. 22). It utilizes a "slow school" approach (Holt as cited in Barlow & Stone, 2005), which prizes processes over outcomes, depth over breadth, and contextualized knowledge. Gruenewald and Smith (2008) asserted that education must start with hands-on experience on the local level in order to make the global relationships understandable. Until high-tech, globalized culture recognizes the value of local knowledge, this will serve as another barrier in promoting PBE.

Logistical barriers. The viability of PBE and other similar models is also questioned for their demand on resources of time, money and staffing. In fact, PBE does create a higher demand for resources such as field gear and equipment, bus transportation, expertise, or school garden maintenance. These programs often rely on parent involvement and volunteer support. As a result, it is debated whether these types of programs are accessible for all communities. Persell pointed out, for example, that urban schools with lower tax bases tend to have larger classes, more tracked classes and fewer amenities, (as cited in Banks & Banks, 2005). Spring (2010) found that charter schools that exist in poorer neighborhoods are more likely to focus on strict, authoritarian models while alternative schools based on creativity and innovation, such as PBE, are more likely to make their homes in more wealthy communities. It is necessary recognize the social inequity in experiential education programs, and seek ways for educators to change this oppressive pattern (Fox, 1995). The challenge posed to PBE, then, is both

that of finding creative ways to fund and support their program while still making the school inclusive for all members of the community.

A second logistical challenge is that of teacher time and energy. Since PBE curriculum must be designed to reflect the unique circumstances of local places, teachers must tailor it individually (Smith & Sobel, 2010). Each teacher has to investigate community issues, visit local natural spaces, network with partners, secure transportation and supplies, as well as design lessons that are rich, academically engaging and—if they are in a public school—aligned with state standards. These tasks do not supplant, but come in addition to the need to track student academic progress, communicate with parents, meet the needs of students with widely ranging abilities, and pursue professional development. So, for many teachers, the prospect of taking on PBE seems daunting and unmanageable (Carlson & Wurdinger, 2010).

In reply, Dubel and Sobel explained that PBE is "not an add-on to school curriculum, but rather a framework for how you do everything," (as cited in Gruenewald & Smith, 2008, p. 326). That is, place-based lessons are also math lessons, science labs, literacy workshops, and opportunities to build critical-thinking, social-emotional skills and teamwork, not something that needs to be done in addition after these skills are taught. Further, research suggests that the drawbacks of increased time and effort are more than compensated for by the way that PBE energizes teachers. Successful place-based projects are shown to boost teachers' confidence in leadership skills, enthusiasm, collaboration within the school culture, and to make students more inquisitive and engaged (PBEEC, 2010). Designing original curriculum allows creativity, and taking part in service projects breaks down problems of teacher isolation by building meaningful

relationships (Roberts, 2002). Though these benefits are important and valuable, literature does little to address how schools that practice place-based education can effectively support teachers in their place-based projects and prevent burnout. Thus, there is a need to investigate effective systems for schoolteachers to plan and manage the types of quality projects that will engage and inspire students.

Justification of Research

As demonstrated above, place-based education offers a creative approach to fostering the next generation of social advocates and environmental problem-solvers. It provides students with the ecological and social literacy, values and confidence to emerge as empowered stewards and citizens capable of enacting positive change. However, the transformation of this philosophy into reality within schools is impeded by a variety of institutional, cultural and logistical barriers. For PBE to succeed, I believe it is fundamental to explore concrete strategies to make PBE feasible for schools, teachers and families, and to prove its effectiveness towards achieving desired outcomes through measurable data. I will describe why the specific questions posed in this thesis are relevant, and how they may address these needs.

My first area of research was to measure how effective the current program at FGCS is in fostering stewardship and citizenship in respect to knowledge, skills, values, and internal locus of control. The literature informs this question by offering a deep understanding of social and ecological literacy (Barlow & Stone, 2005; Gruenewald & Smith, 2008; Hayward, 2012; Orr, 2004). It further illustrates how PBE provides the social and ecological knowledge, skills, values and internal locus of control that are fundamental in fostering stewardship and citizenship (Athman & Monroe, 2001; Bluhn,

et. al., 1998; Carlson & Wurdinger, 2010; Knapp & Woodhouse, 2010; Louv, 2008; Smith & Sobel, 2010; Sobel, 2004). However, as outlined under "Barriers" above, FGCS teachers face a number of challenges not adequately addressed in literature, such as tension between PBE curriculum and standards-based alignment, cultural resistance from the community, and limited time, energy and resources to execute ideal lessons. Therefore, it was important to understand how well FGCS, whose mission aims to develop scholars, stewards and citizens is really setting students up with the tools to take action in their community. Only through research at the school could I acquire this specific data.

This question also required an exploration of what tools are most effective in measuring factors such as student knowledge, confidence and environmental behavior. While a variety of PBE evaluations exist, most, such as SEER's, have focused on academic achievement rather than environmental behavior (Davis, 2013; Plumb, 2003). It is challenging, and perhaps impossible, to measure the immediate impacts of a program on long-term character traits such as stewardship and citizenship. The evidence that is offered for the development of stewardship and citizenship in relation to PBE is primarily anecdotal (e.g., Barlow & Stone, 2005; Cornell, 1979; PEEC, 2010) and would benefit from replication or alternate perspectives. Chawla's (1998) study examined the factors that shaped adults into environmentally responsible stewards. Although this study is valuable in promoting environmental education, it provides little guidance in molding a program *now* to ensure that it has the desired impact on enrolled students in the future. I sought to discover practical and reliable ways to get immediate feedback on the stewardship and citizenship outcomes of FGCS' program. This will allow teachers to

more effectively target areas of strength and weakness, and make improvements as educators at the school.

My second area of research addressed the short-term improvements in the PBE program that the school may be able to make to better support the development of stewardship and citizenship among students. In seeking inspiration to improve the program at FGCS, I discovered that place-based literature is replete in colorful descriptions of students and teachers working together to improve their communities and natural spaces (e.g., Orr, 1994; Sobel, 2004). However, these anecdotes tend to focus narrowly on the project highlights and outcomes, and thus provide an incomplete picture of PBE in schools. How, for example, do teachers determine the success of a project? How are school days structured? How are students who are falling behind academically supported through complex independent projects? How do teachers divide their time between designing engaging, in-depth, authentic projects and meeting academic standards in addition to parent requests, district demands, professional development and personal health? Since I cannot address all of these questions within my investigation, I chose to focus on those aspects of the program I have most control over as a coordinator; that is, the ways in which teachers are supported in developing O&A curriculum, opportunities for reflection, and ongoing professional development.

In regard to planning curriculum, the literature provides a variety of guidelines with which to measure the value of a PBE project (see Athman & Monroe, 2001; Bluhn, et al., 1998, Carlson & Wurdinger, 2010; Knapp & Woodhouse, 2004; Larmer, 2012; Roberts, 2002; Sobel, 2004; and Smith & Sobel, 2010). However, these static qualities are dependent both upon the unique educational context in which they are implemented

and upon the agreement of teachers to uphold them. Action research, conversely, allowed me to co-develop a more dynamic evaluation system. Just as research shows that students are more empowered when they play a role in the development of knowledge, the same holds true for educators (Aguilar, 2014). For this purpose, I engaged with teachers in a collaborative process of designing and evaluating project curriculum so that they would take ownership in the process and products of our work. I hope that this process will improve the effectiveness and alignment of our PBE program.

Literature strongly supports the value of reflection around place-based and project-based work in order to recognize and deepen learning, and enhance the ability to apply understandings to new situations. This holds true equally for students (Berger, 2003; Carlson & Wurdinger, 2010; Dewey, 1938, Kaye, 2004; Kolb, 1984) and for educators (Allen, 1999; Freire, 1970; Smith & Sobel, 2010). Teachers explained that it is not easy to include engaging and quality reflection within the school day, and much less to find time for personal reflection. Through a deliberate action research process I invited teachers at FGCS to reflect in their work, to share experiences and resources, and to collaboratively generate solutions.

Finally, PBE literature offers limited guidance around teacher education and professional development, beyond noting lack of PBE training within teacher education programs (Gruenewald & Smith, 2008). Sobel and Smith (2010) suggested that PBE is most effectively implemented slowly, with full ownership from teachers. They recommended building a culture of trust among staff, then providing curriculum frameworks and time for teachers to individualize these to their own teaching styles. Bluhn, et. al. (1998) highlighted the importance of providing teacher time to identify

resources within their communities and environments and participate in service in order to develop their own social and ecological literacy and internal locus of control. Dubel and Sobel (as cited in Gruenwald & Smith, 2008) also recommended the importance of using those pedagogical methods espoused by a program when training educators: "embody what you preach" (p. 313). At FGCS, teachers enter the school with a wide range of skill sets and comfort levels with experiential education. I sought to bring attention to PBE at FGCS through the development of a professional learning community (PLC). Our PLC, meeting once monthly through the year, helped me to get a picture of teachers' priorities, concerns and needs, as well as build a collective understanding of what teachers want for the program. An action research approach to facilitating and analyzing these meetings provided data that may offer practical solutions for better supporting FGCS teachers in their work.

Solutions start small. Place-based education is grounded in the belief that students need to start with local knowledge. Wendell Berry mused that "you cannot know who you are until you know where you are" (as cited in Louv, 2012, p. 120), and until we know who we are, we are without a foundation to serve others. PBE also makes the assumption that starting small, embedding knowledge in the local context, is the best way to affect larger change (Athman & Monroe, 2001).

While large-scale environmental crises, such as climate change, destruction of habitat or environmental injustice, can cause children to feel helpless and detached, building a school garden in a nearby vacant lot empowers children and forges a deep connection with the land that will serve them through their lives (Sobel, 1996). Once children have seen their "own capacity as agents of change," posed Smith and Sobel

(2010) it "seems likely to set a life trajectory characterized more by activism that passivity" (p.93). Hayward (2012) asserted that in addition to a sense of wonder about nature, we "need to nurture a child's sense of wonder about democracy, nurturing empathy for others, and an appreciation of the extraordinary potential of ordinary people acting in collaboration to create a more compassionate and sustainable world" (p. 151). Projects that build students' social capital and value for community will follow students through their lives, encouraging them to cultivate meaningful relationships with place and community wherever they go (Smith & Sobel, 2010).

Just as place-based education relies on students gaining an understanding of their place in order ripple positive change out into the world, I chose to start my approach to challenges within education locally, at the school at which I work. I believe that any school seeking to create a non-traditional model will be shaped by the unique local resources, cultural values and barriers, and thus depend on unique systems and solutions to be successful. Action research offered me a way to approach Forest Grove Community School with an open and inquisitive mind, ready to be a place-based learner and activist within my community. I hope that my findings will positively impact those teachers and students with whom I work, who in turn will bring greater passion and positive change in their communities.

Chapter 3. Research Methodology

Action Research

In my research at Forest Grove Community School, I utilized an exploratory action research approach to evaluate the effectiveness of the place-based education program in fostering students' stewardship and citizenship. Action research is a systematic form of inquiry in which the researcher selects a problem or question, independently or in collaboration, creates a plan to address it, monitors results while implementing the change, reflects, and applies results towards on-going investigation (Water-Adams, 200). In education, a teacher action researcher seeks to answer classroom-based problems in order to improve existing practice (Water-Adams, 2006; Thomas, 2011). This was an appropriate methodology for two reasons: (a) it views research through a post-positive, pragmatic and process-centered lens, consonant with my philosophical framework, and (b) it serves as an excellent tool for school improvement as well as professional development.

Philosophical framework. Creswell (2012) asserted that an important consideration in conducting any qualitative research is the philosophical assumptions that the researcher brings into the study. The post-positivist, pragmatic, constructivist approach of action research is compatible with my personal philosophical framework as a researcher. Each of these qualities will be described and discussed below.

The post-positivist framework rejects the idea that a single objective truth will emerge from unbiased research (Willis, 2012). Action research allows "I" to enter the research, placing the researcher in the center of the action, thus making research more personally relevant within a particular context (Burnaford, Fisher & Hobson, 2001).

Action research further invites the researcher to "acknowledge and embrace" the complications implicit in research with human participants "rather than trying to control them" (Burnaford, Fisher & Hobson, 2001, p. 56). Consistent to this philosophy, I did not approach my work with students as a purely objective researcher examining test subjects. Rather, as the experiential education teacher at the school, I placed myself in the midst of the action, learning alongside students on experiential outings in the community (also known as *Out and Abouts* or O&As,) leading hands-on activities, and sometimes facilitating reflections and debriefs after O&As. My investigation sought to enhance the quality of education students received, which included my efforts as one of their educators. As a result, the research I conducted is unique to the school context, my students, my co-teachers and my teaching style.

Action research is highly pragmatic, flexible and open to finding multiple solutions (Thomas, 2011). It encourages the researcher to revise plans if a first experiment does not manifest the desired results, and it involves the researcher actively in the process, not only as a generator of new information, but also an agent of change (Water-Adams, 2006). This approach allows teacher researchers to focus on students' realities: rather than imposing theory onto a classroom or program, it creates a "grounded experience" (p. 51) at the school, building ownership by students and staff (Burnaford, Fisher & Hobson, 2001). This approach was both appealing and necessary. Since I work in an environment in which I collaborate with teachers, I had to be able to adapt my research methods to changes in lessons, activities, and methods of data collection as they arose. Action research also comes with a commitment to affect change based on findings (Mills, 2003, p. 3), with an orientation towards practical outcomes rather than abstract

theories. I selected this project because it is deeply relevant to my position at the school; I had an ability to both observe and impact the place-based education program at FGCS, and wanted my research to be as practical as possible for the school, its teachers and its students.

Finally, teacher action research supports a constructivist philosophy by acknowledging the benefits that can emerge from within the process itself. Action research is deeply integrated into the day-to-day work of an educator. It is interactive and spiraling, exploring what works and what does not: open to trying new ideas and reflecting upon them (Burnaford, Fisher & Hobson, 2001). Burnaford, Fisher and Hobson (2001) describe it as a "prismatic study" (p. 174), in which the problem is approached from many different vantage points and constantly in motion. In this sense, action research encourages needed collaboration among teachers by providing a context in which professionals exchange ideas and needs. It promotes professional growth by "positioning teachers and administrators as learners rather than experts" (Mills, 2003, p.v). As in Dewey's (1938) or Kolb's (1984) vision of experiential learning, an action researcher reflects upon concrete experience and observations to build upon further experiences. In this same way, I hoped that by collaborating deeply with fellow educators and students, we could learn and grow together as we constructed knowledge and improved our program through the research process.

My process orientation is demonstrated by my research design approach. I began by exploring the challenges of FGCS's place-based education program through a design process developed by IDEO in "Design Thinking for Educators" (2013), which encourages the researcher to frame challenges as possibilities, and to seek solutions

collaboratively. I also found guidance in the Outcome-Based Evaluation model, which structures evaluation design around stakeholders' needs (Thomson & Hoffman, 2003). I further refined my selected research design with input from other educators at the school, and welcomed their continued involvement in my research and analysis phases. I believe their inclusion in the process enriched the study and magnified its impacts on the quality of learning experiences at FGCS.

Purposes. Burnaford, Fisher & Hobson (2001) described teacher action research as a venue "for personal and professional renewal and reform" (p.1). Thus, action research meets two primary goals of my thesis project: to create school change while also developing professionally.

First, action research is an excellent method to identify goals for school-wide improvement. It offers an opportunity to take a critical look at gaps between "theories-espoused and theories-in-use" within a school (Argyris, 1982 as cited in Burnaford, Fisher & Hobson, 2001, p. 8), then "helps teachers make informed and wise decision as they try to improve schools for all learners" (Burnaford, Fisher & Hobson, 2001, p.2). It is particularly effective for looking at the affective component of teaching (Mills, 2003), which I used to examine student engagement, motivation and values related to the FGCS program.

Secondly, action research offers an empowering way for teachers to build professional skills. It invites teachers to think independently about their program, seek answers, solicit input, and actively apply learning (Burnaford, Fisher & Hobson, 2001). In this way, action research can foster professional cultures within schools (Thomas, 2011). Further, it works by "incorporating into the daily teaching routine a reflective

stance" (Mills, 2003, p. 10). By practicing habits of systematic observation and reflection, I sought to expand my skills as a teacher, become aware of my strengths and areas of needed growth, and gain confidence as a leader and advocate for place-based education within the educational community.

Possible drawbacks of action research. Because of its dynamic and personal structure, teacher action research also presents a number of challenges. One is the bias that emerges from the subjectivity of any exploration in which the researcher is deeply embedded, such as teacher action research. Another is that any conclusions that emerge are difficult to apply in other contexts. Finally, it presents a number of ethical challenges, as the students become the educator's research participants. These concerns are addressed below. (See Validity, Reliability, Bias and the Institutional Review Board.)

Case study. My action research approach was complemented by the use of case study methods and practices. Case study is a systematic inquiry that aims to explain a phenomenon through the use of one of more specific examples (Zucher, 2009), in this case, examining FGCS as an example of a place-based school model. This case study was primarily exploratory, seeking to gain a more complete understanding of the impacts of FGCS's program, as well as interpretive, using collected data to derive strategies to improve the program. The case study method offers useful strategies to extract meaning from diverse qualitative data, such as clustering ideas by patterns and using metaphor to find the relationships between variables (Zucher, 2009). As in action research, the case study approach acknowledges the necessity of continually "refining the methodology as data are received" in order to accommodate new understandings (Zucher, 2009, p 10). Although case studies tend to be largely intrinsic, primarily seeking a deeper

understanding of the particular case under study, by taking care to document my unit of analysis—that is describe the school and its program in detail—I can increase the value of any findings that emerge for application to or comparison with other programs.

Data Collection and Analysis

I used a variety of methods to gain insight into the research questions. These were selected based on guidance from literature as well as practicality and ethicality. I will describe and justify each of the instruments I utilized, how they were administered, the synthesis and analysis of data, and how bias may have impacted the results. Table 1 for presents a triangulation matrix further delineating how selected data collection tools informed the research questions.

Student survey. I administered an anonymous four-page student survey to all consenting seventh and eighth grade (Level Four) students in class at FGCS in January 2014. I selected middle school students as participants based on their ability to comprehend and respond to questions, and because, with many having attended the school for multiple years, they provided the most complete picture of the program. Further, use of this older group of participants allowed me to compare the responses of students who had attended the school for many years with newer students, thus revealing possible long-term impacts of FGCS' program. I designed the survey to assess students' ecological and social literacies, values, behaviors and perceived self-efficacy. In total, I collected 45 complete surveys from the 53 students enrolled in Level Four. This disparity was due to three non-consents from parents, a single non-consent from a student, and four student absences on the day that surveys were administered (see Appendix B1 for the complete survey).

Following the survey's administration, I tabulated responses for each close-response question based on the number of years of attendance at the school. Respondents were sorted by attendance of one to two years, three to four years, and five to seven years. I analyzed these data for patterns and trends to determine whether longer-term students' responses differed significantly from newer students'. I synthesized the open-response questions independently, sorting them into broad themes through an open-coding process (Burnaford, Fisher & Hobson, 2001). I then examined categories for commonalities, contradictions, diversity of responses, and evidence of skills or knowledge, values, and locus of control. I used coded answers to support quantitative data, and to provide another dimension for interpretation of results.

The potential of administration bias was present in the survey: Since students took the survey with the researcher in the room and in a shared space with peers, this may have affected the honesty or degree of thought put into answers. The small sample size also could decrease the validity of the data: note that the sample of students who have attended FGCS for five to seven years, for example, is only nine students. Survey design may also have biased some responses. For example, in a post-survey discussion, students shared that some questions relied on heavily subjective terms, such as *leader* or *great friend.* As a result, students' differing definitions of these subjective terms, rather than self-perception (which was the sought-after information) may have affected responses. Finally, in sorting students by the number of years of attendance at FGCS, a variety of confounding factors may have been introduced. For instance, many students who have entered the school more recently may have done so because they were unhappy socially or unsuccessful academically at other schools. For this reason, these students may have

different values and opinions than long-term students. Also, some students who have been at the school five to seven years have families who are deeply involved with the school, such that their values may be just as reflective of their family's values as of their educational experiences. Though these biases could not be eliminated, I sought to enhance reliability by crosschecking the data with students and teachers after results were tabulated. I highlighted and discussed key questions with these groups in order to increase the strength of my interpretations.

Parent questionnaire. The parent questionnaire was administered anonymously through the school's parent email list. The questionnaire was completely optional, thus providing a sample of convenience rather than a random sample. It was offered in English and Spanish. It invited parents to share their perceptions of the school's strengths and weaknesses, and the ways in which they have seen changes in their children's behaviors through their attendance at FGCS. I designed the questionnaire to provide a "behind the scenes" look into students' behavior, explore the degree to which students are internalizing their place-based learning, and reveal possible impacts of the program upon students (see Appendix B2 for the parent questionnaire).

As in the student survey, I tallied close-response questions to show the percentage of positive responses to each question. The higher the percentage of positive responses related to a certain behavior, the more significant the impact of FGCS' program I assumed. I categorized open-response questions based on commonalities, and analyzed them for further demonstrations of student skills, knowledge, values and confidence, as well as for inconsistencies.

Potential areas of bias included self-selection bias: since participation was optional, it is more likely that parents who are deeply involved in the school or their child's education, parents with strong opinions regarding the school, and parents with greater access to technology elected to complete the questionnaire. Further, since no data were collected regarding students' ages, length of attendance at FGCS, or environmental and social values of the family, it was impossible to take into account the possible effects of these variables.

Additionally, I realized that the answer format of the parent questionnaire, which invited respondents to merely check all options that they agreed with, limited responses and thus introduced confounding factors. For example, among parents who responded negatively to options in the question "Which of the following changes have you noticed in your child?" it is impossible to distinguish between those who would say "my child already exhibited this behavior" or "my child never exhibited this behavior and still does not," and those that might say "my child has become less confident/compassionate, etc." The problem this generated is demonstrated well by the question "I have noticed that my child likes to play outside more," to which only five percent of parents responded positively. While at face value this would suggest that the FGCS program is very weak in fostering a love for the outdoors in children, other responses in the survey would provide counter evidence. Instead, this low response is likely attributable to the fact that most children already enjoyed playing outdoors. One parent even described this conundrum, adding in the comment box, "my child has sustained a lot of the above qualities." In order to account for this uncertainty, I determined that responses receiving greater than 30% were indicators in favor the program. I viewed responses between 20%

and 30% as inconclusive, since it is impossible to determine whether they represent strengths or weaknesses of the program due to confounding factors. However, I viewed those responses receiving only 10% to 20% positive responses as indicative of program weaknesses. I disregarded the five percent positive response related to playing outside for the reasons explained above. I also crosschecked parent questionnaire data with a group of teachers to propose alternate interpretations and increase reliability.

Work samples. I collected student work samples to provide a more holistic evaluative measure of student knowledge, skills and values. While I originally intended to collect a wide variety of student work samples from different grade levels, due to logistical constraints, I instead focused on two forms of student work. The first of these was Level One (first and second grade) students' Out and About journals. Students use the journals upon returning from O&As to share and reflect upon their learning. For these young students, reflection generally takes the form of drawings with short labels or descriptions. From these journals, I selected 60 journal pages from 34 consenting students to photograph, comprising 30 samples from each of the two classes. I included samples that students showed to me as their favorite page, and selected other pages to provide a broad spectrum of Out and Abouts, student abilities and reflection styles.

Once samples were collected, I identified themes presented in each photograph based on its content as well as execution. I compared themes and sorted them into categories such as *sense of place, connection to animals, friendship,* or *attention to detail.* (The figures at the end of this paper provide a variety of examples.) Finally, I classified each category as pertaining to students' skills and knowledge, values or locus of control. Themes that were found in many pictures were used to demonstrate strengths

in the place-based program, while themes infrequently found suggested potential areas that could benefit by development. This process was biased both by my role in the original selection of samples, as well as the liberty taken in interpreting how students' drawings reflected their skills, values and self-confidence.

Level Four Capstone projects provided the other source of work sample data. This yearlong project requires graduating eighth grade students to select a topic of interest, conduct in-depth investigation, set a timeline and goals, and to use learning to give back to the community through service, education or other means. Teachers support students with activities in the classroom and assistance in selecting a mentor, a community member with expertise in their area of focus. As a culmination to the project, students present their project to teachers, parents and mentors in a college auditorium. I attended all twenty-one presentations, and made a detailed record of students' comments and demeanor throughout.

I then re-read and coded these notes for demonstrations of student skills and knowledge, values and locus of control. For example, I categorized the topics chosen for the project with respect to whether they represented social or environmental learning; I considered how students chose to give back to the community to demonstrate their values, and reflected upon how students perceived their accomplishment (or lack of success) was to gauge their locus of control. To assess the effectiveness of the FGCS program for students, I then reconstructed these specific codes into larger over-arching categories. This process may have been biased by students' self-perception, students' level of comfort in presenting accurately in front of an authentic audience, and by my own perceptions.

Celebration of Learning observations. The Celebration of Learning (COL) is a twice-yearly event at FGCS that provides classrooms a chance to exhibit the work they have been doing to families and the school community. By visiting all classrooms during the COL in February and again in May, I was able to see and photograph student work, observe students sharing their learning with parents, and gather a variety of information about the projects that took place throughout the year. This offered a cross-section of student work produced throughout the year, and included everything from written work and posters to models of bridges and wheelchair ramps, video productions, built bat boxes and a student-created library. Additionally, COLs provided a snapshot of the types of projects designed by teachers.

I recorded detailed observations of these events and used them in two primary ways to inform my research. First, I combed and coded data for examples of skills, knowledge, values and locus of control exhibited by the student work on display, using a similar system as used with student work samples. Based on observations of the projects, and supplemented by information from students and teachers, I analyzed projects for (a) the learning opportunities each offered students and (b) the degree to which the project met expectations of a seven-point place-based project rubric developed in collaboration with teachers, which used teachers' own definition of excellence in projects. COL data were thus evaluated to determine the areas in which projects could be further developed to encourage stewardship and citizenship. Projects for which there were insufficient data were eliminated from this process. (See Table 2 for an example of project analysis).

These data were biased primarily by the fact that they each display only a brief snapshot of students' and teachers' work: While 15 minutes in each classroom was sufficient to acquire abundant information, the final products on display surely provided only a partial picture of the full project, the learning objectives it delivered and student growth achieved.

Out and About reflections. While I originally intended to collect data regarding student behavior and learning opportunities offered during our Out and Abouts (O&As) in the field, I found it too challenging to record observations while I was directly responsible for teaching. As an alternative means of collecting data, I developed an O&A reflection form that I completed following each O&A with students. I designed the form to offer a quick assessment of the activities, level of student engagement and behavior during trips. During teacher interviews in the initial research design process, I listed those factors that teachers associated with positive O&A learning experiences such as engagement, opportunities to build classroom community and opportunities for exploration. The reflections asked teachers whether or not each trip provided these factors. I completed nine O&A reflections over the course of two months, and asked each teacher to complete one as well, thus collecting reflective assessments for 18 O&As (see a sample O&A reflection form included in Appendix B3).

I tabulated the data from these forms to determine the percentage of O&As that offered each component. I further analyzed data to determine whether the positive responses appeared to be correlated with (a) the nature of the O&A (e.g., outdoors, interactive, repeated, etc.); (b) the age group involved; or (c) other factors recorded in the form. I compared reported engagement, which was determined by teachers to be

particularly telling in measuring an O&A's success, with other trip components such as opportunities for team building or service-learning. This analysis provided further insight into whether O&A plans were living up to teachers' ideals of successful curriculum, as well as helping to identify opportunities for development.

Bias of this data collection emerged in the sample size, which was limited (only 18 forms), and consisted of 50% Level One O&As, as well as in my role in the analysis. In my third year of coordinating O&As, this is the aspect of the program in which I am most deeply involved, and in which I have the most established preconceptions. I sought to set these aside during analysis by analyzing numeric data separately from personal commentary.

Professional learning community. I facilitated seven professional learning community (PLC) meetings over the research period related to project- and place-based learning philosophy and practice. During PLC meetings, I actively recorded teachers' comments and used them to inform all areas of the study. Teacher anecdotes and reflections offered insight into their students' knowledge, skills and values as well as teachers' challenges and priorities. Schubert (1992) confirmed the value of this "teacher lore" (as cited in Burnaford, Fisher & Hobson, 2001, p. 13) in helping to construct a narrative and make research meaningful for all involved. At the conclusion of each meeting, I asked teachers to complete a short "exit ticket" to share what they valued from meetings, a wish, and a question they had upon leaving. After the final May meeting, I administered a more extensive exit ticket (exit ticket and exit survey are included in Appendix B4). Exit tickets were all anonymous and included in the meeting records. After each meeting, I organized the records, adding my own notes regarding the process

and outcomes of the PLC itself to "capture evolving perceptions" (Burnaford, Fisher & Hobson, 2001, p. 18) such as emerging patterns, questions to explore, and ideas for future lessons or PLC meetings.

At the conclusion of the school year, I analyzed all the PLC data, starting with an open-coding process. I extracted and classified each unit of data that could stand on its own by themes. As I integrated more data, the thematic categories continued to evolve. The next step involved selectively coding the data in two ways. The first of these was evaluative: to pass the data through the primary goals of the PLC meeting to see whether or not they were met. The second was interpretive: to organize data according to areas of program improvement, such as Out and Abouts, project planning, or professional development, in order to discover trends that would aid in making informed and relevant recommendations for the program improvements.

During PLC discussions, it was challenging to maintain my role as facilitator and still capture all interchanges. Therefore, it is important to acknowledge that the meeting notes I used for analysis were incomplete. Further bias may have entered the analysis in my selective interpretation of data. I also may have shown bias towards these data because, as the facilitator, I wanted the PLC to be successful. Although teacher exit tickets were designed to provide an objective perspective of PLC outcomes, it is possible that teachers were also uncomfortable providing completely honest feedback due to the small size of the school community and their personal relationships with me.

Supporting data. I selectively used other available data to supplement and enrich understandings gained from my chosen data collection methods. These included the 2013 Climate Survey, which is administered yearly to all Level Two through Four

students by their teachers at the end of a school year, and intended to assess the overall culture of the school; and an Alumni Survey administered in 2013 by Principal Vanessa Gray to solicit feedback from FGCS alumni. During the semester, I also recorded observations during student-led conferences in May, and took notes during a staff meeting at which our current mission statement was discussed. I included data points from these sources when they proved relevant to my topic, but did not subject them to as rigorous a process of analysis as other data collected.

Final stage of analysis. Above, I have described in detail how each research method was administered and analyzed. To synthesize these diverse research results, I subjected the data to a final process of examination and coding in which data was placed in one or more categories that corresponded to the initial research questions. The first set of questions sought to evaluate the program for student possession of skills and knowledge, values, and locus of control, as well as the strength of projects and the PLCs. Data were sorted under these themes to determine strengths and areas of development of the program. During this process, two additional categories emerged repeatedly, and were thus included as another important point of discussion. These were *school structure* and *community*. The findings from this sorting process will be discussed in Chapter Four.

Data were also categorized under a second set of questions that pertained to program improvement in each of area of program delivery: This included improvement in relation to project planning, Out and Abouts, reflection practices, professional development, and areas of further exploration. I will share the discoveries made regarding opportunities for program development and possible solutions in Chapter Five.

Trustworthiness

Mills (2003) suggested that the traditional quantitative research ideals of validity and reliability are not applicable to teacher action research, since this methodology relies heavily on qualitative data and shifting understandings. Rather, it is useful to evaluate this type of research in terms of *trustworthiness* (Guba, 1981). Trustworthiness can be measured by factors such as credibility, transferability, dependability and confirmability (Mills, 2003). I will describe how my research methods sought to address each of these factors.

A researcher can demonstrate credibility by taking into account the complexities of the topic studied. One way to increase credibility—and thus trustworthiness or validity—is through triangulation, which involves the use of multiple methods to obtain data on each indicator (Golafshani, 2003; Trochim, 2006). My methods matrix (Table 1) describes how I incorporated triangulation into my research design by informing each research question through several forms of data. I further sought to boost the credibility of my research by performing "peer debriefing" (Mills, 2003) as a way to scrutinize and verify interpretations (Burnaford, Fisher & Hobson, 2001, p.70), by inviting teachers to review my analysis of surveys during PLC meetings. I also included students where possible and appropriate, to test my conclusions with the true experts: the learners participating in the PBE program.

Dependability indicates the stability of the data, which can also be supported by triangulation. Dependability is also increased by conducting studies over a longer term (Burnaford, Fisher & Hobson, 2001; Mills, 2003). Although this study duration was only

single semester, it resulted in guiding questions and measurement tools that will inform on-going evaluation.

Another factor considered in determining trustworthiness is *transferability*: the applicability of the research to other contexts (Mills, 2003). This study, which focused specifically on the needs, systems and community of FGCS, was not designed to draw any overarching theory of place-based education, but rather to explore FGCS as a case study of place-based schooling. Though the data gathered may not be widely applicable to other situations, I believe that this type of research holds value in that it informs and potentially strengthens the quality of place-based education conducted at FGCS, and may provide insight to other educators teaching in similar contexts. I sought to increase transferability by describing the school, its program, and my research methods in sufficient detail that other educators may determine independently the degree to which it is useful or applicable in their work (Mills, 2003).

Finally, *confirmability* refers to the degree of objectivity of the data. I will discuss this below, in considering how I will acknowledge and address areas of bias.

Potential areas of bias. One significant drawback to teacher action research is the difficulty of eliminating personal bias. Since the researcher is directly involved, as in my case, a teacher working with her own students, a researcher's values and attitudes can directly affect the results (Mills, 2003). In order to obtain meaningful results, it was important to acknowledge, define, and in some cases, seek to reduce my potential bias.

Though I must openly acknowledge the subjectivity I bring to the study by my deep involvement as a teacher at the school and my interest in environmental education, I sought to mitigate this bias by collecting several forms of empirical data, such as surveys

and photographs, and by keeping these data classes distinct from personal interpretations and evolving conclusions. Above, I outlined my analysis process in detail with admissions of areas of bias to provide greater evaluative validity (Mills, 2003). Further, the PLC provided an opportunity for me to solicit help from my co-teachers in assessing data collection tools and analysis. This process allowed me to rethink previously held assumptions and increase the objectivity of data collection.

Another area of bias emerges from the ethical challenges of the teacher-student relationship. As an authority figure, a teacher researcher must seek to create an open environment in which students feel no undue influence to participate in the research or respond inauthentically during research activities (Protecting Human Research Participants, 2008). For example, a student may answer dishonestly on a survey in order to provide the response they perceive the teacher "wants" to hear. More dramatically, Rosenthal (2002) demonstrated a grave downfall of "experimenter expectancy bias," in which a teacher's belief that a student will or will not be successful can influence a student's performance, a phenomenon known as the Pygmalion effect. To reduce these risks, I invited students to be honest and critical about the contributions I asked of them.

Outcome validity. Maxwell (1992) offered outcome validity as an additional indicator of action research value. He argues, simply, that action research is valid if the study leads to insight and solutions that can be applied in subsequent research cycles. That is, if research is designed and implemented in such a way that it proves useful to the intended audience, it holds validity. Thus, as I explore initial research findings in the following chapter, readers can evaluate to what extent this research has resulted in useful outcomes, and thus to what degree it has proven valid.

Chapter Four: Program Evaluation Results

In the previous section, I described the research methods employed to investigate the effectiveness of the place-based education (PBE) program at FGCS in fostering stewardship and citizenship, and to uncover potential areas of improvement. In this chapter, I will present the data obtained, outlining what analysis revealed about the PBE program and its impact on students.

To answer the question, "How effective is the current PBE program at FGCS in fostering stewardship and citizenship?" I found it essential to examine data through three distinct but complementary aspects of stewardship and citizenship, as follows:

- To what degree does FGCS's place-based program provide students the skills and knowledge required to practice stewardship and citizenship? These essential skills and knowledge include social and ecological literacies, as well as the corresponding action skills needed to exercise social or ecological action.
- To what degree does the program support the development of values required to practice stewardship and citizenship? These values include social, environmental, and academic values.
- To what degree does the program empower students with an internal locus of control to act as stewards and citizens? Internal locus of control refers to students' belief in their capacity to transform knowledge, skills and values into action.

This chapter will describe the implications of research data on student performance in these three areas. First, I discuss those areas of strength that emerged—the knowledge, skills, values and areas of locus of control that students consistently demonstrated, and

thus that the program appears to support effectively. I identified areas of strength as themes that were expressed positively in at least two distinct forms of the collected data. Next, I present potential areas of development: those areas of the program in which data revealed the greatest degree of weakness or inconsistency. Again, areas of development were only deemed significant if evidence appeared in more than one form of data. I will describe each theme and present evidence from data supporting its designation as a strength or weakness. Any contradictions between data points will be addressed as they arise.

Following a discussion of student performance, I will address the second research question: "How might the FGCS program better support the development of stewardship and citizenship among students?" This inquiry encompassed three focus areas:

- How might O&A and project planning methods better foster citizenship and stewardship?
- How might reflection methods offered to students better support their development as citizens and stewards?
- How might a professional learning community (PLC) designed to support and energize teachers impact the effectiveness of FGCS's place-based education program?

To address these questions, I will first present strengths and weaknesses of the program related to program design, looking at Out and Abouts (O&As) and projects. Since I discovered that reflection was deeply embedded within projects and O&As, this discussion also reviews the quality and quantity of reflection opportunities provided students. Finally, I will examine professional development that took place through PLCs,

outlining core goals that I sought to achieve with PLCs, and examining to what extent these goals were met through the year.

After addressing my initial inquiries, I will share two areas of unexpected findings that repeatedly emerged in data analysis: the challenge created by FGCS' school structure and the strength of the school community. Although neither of these topics are discussed deeply in PBE literature, and were thus not included in my initial study design, the influence of these components on the FGCS program became apparent as the study progressed. I will discuss what data revealed regarding these themes and their possible significance in the effectiveness of the program.

Student Performance: Areas of Strength

Forest Grove Community School seeks to build scholarship, stewardship and citizenship in its students. The collected data confirm that the program has resulted in student development in all three of these areas. Student survey results demonstrated various positive correlations between years of attendance at FGCS and factors such as self-identification as citizens, ecological knowledge and stewardship behavior. In the parent questionnaire, 92% of respondents reported noticeable changes in their children since attendance at the school, including factors such as increased confidence in exploring the community or environment, increased empathy or compassion, and making choices based on the health of the environment. Work samples, Capstone presentations, O&A Reflections, and Celebrations of Learning painted a picture of students who are engaged in diverse forms of learning, motivated academically, and possessing of ecological and social literacy and values. I will describe those strengths that stood out most prominently, organizing them by those related to knowledge and skills, values and

internal locus of control. I will support and elaborate upon each strength with specific examples from the data.

Knowledge and skills. The following areas of knowledge and skills were classified as strengths based on their identification in more than one form of data. I will first address themes related to stewardship, or ecological understanding, followed by themes related to citizenship, or social understanding. I will also examine several key action skills demonstrated that contribute to citizenship and stewardship.

Stewardship knowledge and skills. Also described as *ecological literacy*, the following knowledge and skills provide the backbone for environmental values and stewardship behavior. Since FGCS encourages classes to get outside and practice academic skills in natural spaces and focuses on sustainability, this area was an expected strength. Indeed, evidence from across the spectrum of data collected demonstrate high student performance in FGCS students regarding basic ecological knowledge, environmental awareness, and understanding of environmental issues.

Ecological understanding. This theme encompasses demonstrated knowledge of facts such as the names of flora, fauna and landforms, as well as understanding of concepts such as ecosystem, interdependence, and adaptation. When asked basic questions such as "Can you name three native species to Northwest Oregon?" as part of the student survey, and graded on full or partial correctness, respondents demonstrated high ecological literacy and confidence. Notably, data revealed a correlation between this score and the number of years of attendance at FGCS: surveyed students who had attended FGCS five to seven years averaged a score of 4.6 of 6 possible points, while newest students averaged only 1.4 points. Complete data for this question are presented

in Table 2. Knowledge around ecological themes was demonstrated multiple times by Level One students. In O&A journals, 28 out of 60 samples exhibited ecological knowledge. This code was selected for drawings of wildlife or natural spaces that included labels, detailed habitat components, or demonstrated understanding of connections between components, and was in fact the most-coded category. (See Figure 1 for examples). For the June Celebration of Learning, Level One students also demonstrated ecological knowledge during family tours of their garden wildlife habitat project. I observed students articulating how the habitat features they researched and built provided habitat for Northwestern species. In addition, Level One students demonstrated knowledge in the identification, harvest and preparation of fresh produce from the garden (Stringer, 2014).

Students were further able to demonstrate complex ecological systems thinking, employing both knowledge of ecological concepts and higher level thinking skills. Level One O&A Journals demonstrated complex ecological understanding in seven samples in which students demonstrated an ability to apply their ecological knowledge to a new context (see Figure 2). Level Three students (fifth and sixth grade) showed complex systems thinking in their creation of biomimicry inventions, designed to address an environmental problem. Level Three students were also able to explain to families the complex ways in which permaculture mimics ecological systems during a farm fundraiser they hosted. This topic is perhaps best illustrated by a comment made by a parent in the questionnaire:

> When my son and I saw a bee outside, he told me that it reminded him of a story his teacher had read to him about bees, mice, cats and clover. He described in detail that everything in a habitat was related and the effects one small change

> could have on the entire habitat. He told me how important it is that we think about the ways that our actions might change things around us.

Students thus exhibited complex understanding of ecological concepts in a variety of contexts, identifying this area of learning as an area of strength of the FGCS program.

Environmental awareness. This second strength relates to students' skills in observing and interpreting their surroundings. Level One students' journals included 11 examples of environmental awareness, which were coded as "sense of place." These samples include detailed drawing of different habitats or reference characteristics of seasonal change (see Figure 3). In the student surveys, 55% of students who had attended FGCS for two years or more self-identified as observant (this was higher, if only slightly, than the 47% of students new to the school who identified as observant.) Another data source that revealed this strength was the alumni survey. In response to the question "The focus on 'stewardship' at FGCS helped me become more environmentally aware," 70% of alumni reported that they *strongly agree* and 20% that they *agree.*

Environmental issues. This theme covers knowledge about current environmental problems or issues. Level Four students demonstrated knowledge of environmental issues in the complexity of their responses when justifying environmental behaviors in the survey. For example, in response to "Do you think natural resources should be protected?" one student replied, "Yes, we should protect them—we cannot eat, drink or breathe money," and another, "Hunting and fishing are ok but we still need laws." These responses suggest that students are not just parroting knowledge about ecologically responsible behavior, but possess nuanced understandings of the issue within a social or political context. Level Three students used knowledge of environmental issues to create biomimicry inventions. Their prototypes, which included a compost-powered car and a

firefly-inspired light-pollution reducing streetlight, were designed to address a wide variety of real ecological issues. (See Figure 4 for an example of a biomimicry invention.) In Level Four, two of the Capstone projects addressed ecological issues, one regarding solar panels, and another, public transportation. Although these examples, among others, suggest that students at FGCS have a relatively strong sense of environmental values, not all students demonstrated a strong and accurate portrayal of issues. For example, one student survey response related to environmental values commented, "Global warming is a hoax." Since this type of narrow perspective was an isolated case, overall, knowledge of environmental issues was concluded to be an area of strength of FGCS learning.

Citizenship knowledge and skills. The following section will analyze those areas of knowledge and skills that contribute to citizenship behavior, or the overall social literacy of students. Several data points indicated that students possess strong knowledge and skills around social themes. However, a variety of data also suggested that social literacy is not as strong as environmental literacy in FGCS students. The specific strengths I identified as related to citizenship knowledge and skills were community smarts, social aptitude, compassion towards others, and knowledge of social issues.

Community smarts. In the student survey, students were asked to provide answers to questions regarding basic community knowledge, such as: "Can you name two places you could go to learn about what's going on in our community?" and "Can you name two local organizations working to help people in our community?" Students received up to four points for correctness of their answer, as well as confidence in their answer. Based on these measures, students with the highest number of years attendance at FGCS earned

the highest "social literacy" score. However, this trend was less pronounced than for environmental literacy; for example, students attending the school just one year had a higher score than students who had attended two to four years (see results in Table 4). A parent contributes further testimony to students' possession of deep knowledge around community: "I have found that the Forest Grove O&As—things that inform kids about what artwork/people/history lies within their own town—are the ones that tend to resonate most deeply...the projects they work on end up resulting in a deep understanding of the material." In another example of social literacy, one of the Capstone projects involved researching local bus routes and presenting findings to the city council in order to raise money for improved access to transportation. This complex student-designed project demonstrated that the students was able to use a variety of citizenship skills to identify an authentic problem, interact with city representatives and navigate local government to seek a solution. Knowledge of how government operates and how to get involved is a key component of citizenship.

Social aptitude. This theme refers to students' skills in interacting with others, which is an important basic element of effective citizenship. Three data points indicated that FGCS students possess a strong social aptitude. First, in the parent questionnaire, 36% of parents reported that their child, since enrolling at FGCS "is more confident interacting with adults" than they were previously (refer to Chapter Three for explanation of these percentages, and see all results to this question in Table 3). In the alumni survey, 90% of students agreed with the statement, "At my current school, I feel comfortable with social interactions." Both these points show a comfort and ease with social interaction among students and between students and adults. In the student survey, a

lower percentage of students who had attended the school five to seven years identified as a "good friend" than students newest to the school; 56% compared to 87%. This initially suggested a weakness in the FGCS program in fostering positive social interaction. However, a discussion with students regarding this response provided an alternate interpretation suggestion that FGCs in fact does foster social interaction, particularly within the school community. In this discussion, one student explained, and others agreed, "If you're new to the school you see yourself as a good friend to just a few people, but when you've been here longer you see everyone as the same, everyone as a good friend. It doesn't have meaning anymore." Note that although these data show that students can interact comfortably with adults and peers, it is not inclusive all segments of the wider community. This will be addressed later as a potential area of development.

Compassion towards others. Four forms of data showed that students possess a strong sense of compassion or skills in empathetic perspective taking. In the student survey, 56% of all students self-identified as "thoughtful." Students who had attended longer showed the highest positive responses, 67% compared to 53% of the newest students. In the parent survey, 46% of respondents reported noticing that their child, since attending FGCS, "is more empathetic or compassionate about others' well-being." This was one of the most frequently identified behavioral changes reported by parents over their child's attendance at FGCS. Consideration for others was also demonstrated at the Celebration of Learning by the types of projects presented by students. For example, one Level Two class presented their colorful and thoughtful designs for a wheelchair ramp. This project integrated engineering and disability awareness in a challenge for students to make the classroom accessible, using a doll as a

model. Other projects also encouraged students to develop perspective taking and compassion, including a school wide "Kindness Week." One parent, in the survey, shared the impact of this event on his or her child: "She really liked the kindness project...she is certainly much more conscientious about other people since then." The various opportunities offered FGCS students to practice perspective taking and compassionate thinking have supported this as an area of strength in the program.

Social issues. This area of strength refers to student knowledge and nuanced understanding of issues around social justice or politics. One student survey question offered insight into student knowledge by asking students to identify a social problem that they cared about. While 77% of students who had attended FGCS for five to seven years were able to do this, only 54% of students who had attended a year or less could do the same. Diverse social issues mentioned included "human rights," "women's equality," "the homeless not getting enough food," and "drug use in our community." In response to the question "Are you comfortable interacting with people different from you?" one student demonstrated a complex perspective by asking for clarification on my vague wording: "What do you mean by this? Different as in personality or sexuality or race or religion, or is this 'different person' disabled or poor or sick?" This student clearly possesses a knowledge base regarding cultural diversity and social injustice. Level Four students also demonstrated in depth understanding of a social issue through the seventh grade's presentation of their "20/20 Project," at the February Celebration of Learning, a project addressing inequity in global access to education. In a video created to share the project, students take turns discussing ten barriers that prevent students internationally from attending school, including sexism, transportation, war and poverty. I perceive

knowledge of social issues to be an area of strength among FGCS students from these three data points. However, I would like to acknowledge that all data points related to knowledge of social issues were associated with performance of Level Four students. This may be due to limitations of my data collection methods, but may also be attributed to a choice by teachers to conduct less social issue education with younger students based on developmental readiness, and thus lesser social awareness at younger levels.

Life skills. Included in this section are five skills that contribute to transforming ecological and social literacy into stewardship or citizenship. I identified these strengths as: communication skills, collaboration, technological skills, student voice and knowledge of action strategies.

Communication skills. Effective communication is essential in order to engage in citizenship action, and this was revealed as an area of strength in FGCS students. One form of communication often practiced at FGCS is oral presentations about projects to parents, peers, or on occasion, a panel of experts. In the student survey, it was found that 78% of respondents who had attended FGCS for five to seven years had given a presentation in comparison to 36% of students who had attended four or fewer years. Later in the year, when 8th grade students presented their Capstone projects my reflection noted: "I was impressed how all students were able to articulate their project accomplishments and learning with humor and grace, even the most shy students!" Five students explicitly shared that communication skills were a significant area of learning during their Capstone Projects (see photograph in Figure 5). At the Celebration of Learning, other classes also demonstrated excellent communication skills as they shared projects. Level One students, for instance, had to communicate orally to their parents

during garden habitat tours, while Level Three students presented mini lessons about each system of the body to Level Four students, parents, and community members.

Student work presented at the Celebration of Learning also demonstrated effective written communication skills. Level Two displayed persuasive letters they had written to the principal in order to get permission to launch their free bookstore (see Figure 6). Level Three writing classes also showed impressive communication skills by putting on public readings of their fiction and poetry work twice during the year. In these events, students demonstrated excellent writing skills as well as bravery in sharing personal written work with an audience.

Another specific way in which students demonstrated strong communication skills was through community outreach efforts, in which they contacted community members to advocate for a cause, raise support, or solicit attendance at an event. Community outreach often took the form of fundraising. According to the student survey, 89% of students who had attended the school five to seven years had raised money for a cause they cared about at some point compared to an average of only 53% among students who had attended four or fewer years. In the Capstone projects, two students conducted fundraising, and two others highlighted their community outreach through flyers and networking as a personal learning point. During the Celebrations of Learning, Level Three students marketed a home-cooked dinner event they were hosting in order to sell tickets as a fundraiser (see Figure 7) while Level Two students encouraged visitors to contribute books to their school bookstore. Students demonstrated a strong ability to communicate in order to solicit community support and participation.

Collaboration. Teamwork or collaboration is necessary in real-world projects, and is often practiced by FGCS students. Indeed, data showed that collaboration was an area of strength. In the Celebrations of Learning, several classes shared projects they had worked on in teams including the Level One habitat projects (see Figure 8), the Level Two wheelchair ramp project, and the colonial simulation at Level Three. In the Capstone project, three Level Four students cited their learning around collaboration and coordination, this time with community members rather than classmates. In the discussion with Level Four students regarding the student survey, students were asked why they thought fewer students (only 22%) who attended FGCS five to seven years identified as a "leader" than newer students who had attended four or fewer years (44%). One eighth grader offered an interpretation: "Students who have been here longer are able to work together better without needing a leader...we're not as much leaders as working together." While this discussion may demonstrate a misunderstanding of what it can mean to be a leader, it is indicative of strong collaborative skills and awareness among FGCS students.

Technological Skills. In the student survey, longer attendance at FGCS was associated with a higher percentage of positive identification as someone who "likes technology" (78% for students who have attended for five to seven years compared to 47% for students who have attended a year or less.) Project work presented at Celebrations of Learning demonstrated that students had multiple opportunities to utilize technology to enhance and convey their learning at FGCS, which may contribute to this positive association with technology. For example, Level One students had the opportunity to take digital photos, write short paragraphs, and upload them onto a website

about wildlife habitat they designed in collaboration with adult helpers. Level Three students made two videos during the year related to writing and science projects, and seventh grade students worked together on a video to share information about their 20/20 project. Many of these products were artistically done, and students showed pride in sharing them. During the Capstone presentations, three students shared their learning around technology, including one student whose project was to design an educational computer game for building math skills. These diverse and authentic applications of technological skills demonstrate that technological skills are an area of strength among FGCS students.

Creativity and voice. At the PLC, three teachers cited student voice and creativity as key skills for successful stewardship and citizenship. Data indicate that this is a strength that FGCS students possess. Level One students demonstrated voice and creativity at the February Celebration of Learning through colorful painted story workshop scenes and clay characters, as well as through O&A Journal pages in three collected samples (see sample in Figure 9). Level Three students did in-depth writing work this past year, and one student as at a conference expressed their skill: "I am best at voice: I love putting my personal touch into writing." A parent confirmed the way in which Level Three writing projects built skills for his or her child:

> The unit on poems and Coffee House Poetry Night was of great impact on my child. He has since continued a love of poetry. It is a joy to watch him create and to see him discover new outlets for his love of creative writing.

Finally, at Level Four, two Capstone projects emphasized a value for personal creative expression. One student who wrote and published a novel for the project explained, "I was able to put chunks of my soul into the pages." The skill to express themselves

creatively and honestly allows students to address social or environmental problems in fresh and interesting ways, and is a strength among FGCS students.

Knowledge of action strategies. This last theme under practical skills relates to knowledge of varying approaches that can be employed to enact change. The Capstone projects offered one venue for students to demonstrate not only their broad knowledge of action strategies, but also their ability to use them to advocate for or carry out a desired social or environmental change. The Capstone project model challenged students to give back to their community, and the diverse ways in which students chose to do this included raising money for infants in foster care through a Facebook campaign, a bake sale and an auction for a local theater, hosting a music jam to raise money for musical equipment in schools, donating crafted goods to a homeless shelter, building a skateboard rack for school, public speaking, art, and education.

Knowledge of action skills was also demonstrated in the student survey through a set of scenario questions to which students were asked to respond (see Table 5 for sample scenario question and responses). For all four of the scenarios, a majority of students (ranging from 63% to 79% of respondents) were able to propose an action. The greater the number of years a student had attended FGCS, the higher this percentage was, indicating that longer-term students had greater knowledge about action strategies. The solutions students offered to the political and ecological problems presented in the scenarios demonstrated a wide breadth of strategic thinking. Below is a sample of words or phrases that were used to describe the proposed action: inform, collaborate, petition, boycott, make speeches, protest, alert wildlife services, stop polluting, raise awareness, create a forum, appeal to city council, propose a compromise, write a letter, donate, start

a drive, hold a fundraiser, and pledge money. It is important to acknowledge that not all solutions offered by students were demonstrative of strong social action knowledge, and that the survey did not distinguish between knowledge about these actions and the skill or ability to undertake them. However, overall, I determined that imparting knowledge of action skills to students is strength of the FGCS program.

Student values: areas of strength. I will now turn to data regarding FGCS student values. I will look first at environmental values, then social values, and finally three educational values that contribute to strong stewardship and citizenship abilities.

Environmental values. Overall, FGCS students showed strong environmental values. These, I divided into *connection with place* and *environmental conservation.* I will provide several data points that illustrate how these each represent strengths among FGCS students.

Connection with place. Data showed that FGCS students have a strong love for the outdoors. In the student survey, 78% of students who had attended FGCS five to seven years self-identified as someone who "likes the outdoors" compared to 64% for students who had attended FGCS four or fewer years. In the narrative responses, one student expressed appreciation for FGCS because "we get to go out every week and...get close to nature. More schools should have outdoor classes." Two themes identified in Level One O&A Journals were demonstrative of environmental values: 17 journal pages showed a strong connection to animals, and 13 showed a connection to place (see example in Figure 10). This suggests that even these younger students are able to express environmental values related to place-based trips at FGCS. Finally, in the parent questionnaire, when parents were asked to share a project that had impacted their

students, four anecdotes told about activities involving a natural place that affected their children. One parent writes:

> When my son's class was studying wetlands, they were able to visit the local wetlands several times for observation, as well as helping with habitat restoration. He always wanted to return outside of school and even invited his grandparents, aunts and uncles, and cousins, to come visit the wetlands. He felt true ownership and a deep love for the area and was passionate about explaining why they were important. That would never happen had he just read about the wetland habitat in a book!

The data indicate a strong connection between FGCS students and their natural environment.

Environmental conservation. Students demonstrated a variety of values around environmental quality and conservation of natural resources. In the student survey, 88% of students who had attended FGCS for five to seven years reported believing "very much" that natural resources must be protected, compared to 71% of students who had attended 4 or fewer years. Parents confirmed that students think about environmental protection: 54% of respondents reporting that their child now "makes choices based on the health of the environment" and 36% of respondents went on to report that their child "encourages me to make choices based on the health of the environment." One parent described the strong environmental ethic that his children have brought home in a narrative response: "Since the two boys have been involved with the school, they have become ardent recyclers...with their support, the rest of the family has become sensitive to these issues also." In the Level Four survey, when asked to share a social or environmental problem they cared about, 10 of 26 student responses were clearly environmental, including "too much oil use," "polluting," and "wildlife protection."

While overall, environmental values were found as a strength, student surveys provided a few contradictory data points. When asked to justify their answers for

environmental behaviors, for example, responses included "yes we should protect [natural resources]—though that's not my opinion but because of the school," and "no! [Natural resources] won't disappear so why not let what happens happen." These answers provide a reminder that not all students will share the same values around an issue despite having similar educational experiences.

Social values. Three themes related to citizenship, social behaviors or social issues were identified as values that FGCS students possess: respect towards others, social justice and civic engagement.

Respect towards others. During the meeting with teachers regarding the FGCS mission statement, one teacher stated, "I like that I'm given the time and encouragement to teach students how to be generous and thoughtful members of their community." Many teachers focus on respect in the community, and this is reflected in results related to this theme. Respectful behavior was highlighted in one student's comments at his conference: "Here is my report card. It says I show respect to others and it is excellent because I try to help everyone when I can." In the O&A Reflections, teachers reported that students were very respectful to the place they visited and to community members on 13 out of 18 trips, and somewhat respectful on the remaining five trips. In analysis, no link was apparent between respectful behavior and assessed degree of engagement, suggesting that any lack of respect, such as "talking over the educator" may be attributable to lack of skills rather than deliberate disrespect. On one O&A in the school garden, Level One students showed consideration and respect for others: when told that there would be pre-school students visiting the garden the following week, a group of students dedicated the rest of class to pulling out thistles in the path "so that the little kids

won't poke themselves." In the school climate survey, a majority of students responded, "at this school students respect people who are different than they are." Overall, data demonstrated a strong sense of caring and respect on the part of students.

Social justice. This theme relates to student values regarding issues of social inequality and justice. Longer-term Level Four students showed a concern for social justice in particular. In the survey, while 66% of respondents who have attended FGCS five to seven years reported caring "very much" about the fair treatment of community members, only 21% of students who had attended a year of less responded in this way. When asked to share a social or environmental problem they cared about, nine student responses were clearly social justice-related, including "homeless not getting enough food," "human rights," and "women's equality." Through the Level Four 20/20 project, students demonstrated dismay at the injustice of global access to education, and three Capstone presentations included social justice issues, such as foster care and homelessness. While social justice was identified as an area of strength, the fact that all evidence came from Level Four students will be discussed in Chapter Five.

Civic Engagement. This theme, which includes participation in community events, work with experts and community service, was another strong social value among FGCS students. In the Alumni survey, 90% of respondents agreed with the statement, "the focus on citizenship helped me become more concerned about or involved in my community." FGCS students demonstrate an eagerness to be a part of the civic life of their hometown. One specific way this was done was through participating in community service or community education. At the Celebration of Learning, students showed a lot

of enthusiasm around projects that involved helping others, such as the Level Two bookstore. In the parent survey, two parents described the impact of this project:

> The free bookstore project inspired my child to go through her books and select many to pass on to a project for a greater good. My child has struggled with sharing and is very particular about who she passes her things onto when she is ready to part with them. It was a big leap for her to be willing to give some for her possessions to a project where those items would be used by a variety of people.

Seven student Capstone presentations mentioned the satisfaction of service, generosity or meeting a genuine need. One student explained, "I want to bring music to the two communities that have affected me most," and another, "It feels good to do something for your community. I realized that a small act of kindness can change a life." Additionally, eleven projects mentioned the value of teaching others about something you are passionate about. A student who taught peers how to handle miniature horses explained in her presentation, "I want to help others learn. Their success is mine."

Another way in which students showed a value for civic engagement was through intergenerational collaboration, an opportunity that Hayward (2012) highlighted as essential to fostering a robust civic life. In the Capstone presentations, four students mentioned a value for the relationship they formed with their mentor, a community expert who coached them through the project. Four examples of Level One O&A journals exhibited this same value for interacting with adults in the community (see example in Figure 11). Additionally, in a returning O&A to the Tillamook Forest, the Reflection reports "Students can't wait to meet Denise (the wildlife expert) again!" Civic engagement through participation in community events, service and intergenerational collaboration were strengths exhibited by FGCS students.

Attitude towards learning. In addition to values related to the environment and community, students' positive attitude towards learning emerged as a strength in the data

coding process. This value is pertinent in the discussion of stewardship and citizenship because it contributes towards students learning deeply and putting effort into their work. Several Capstone presentations reflected a positive attitude towards learning: four students demonstrated humor towards the challenges in their presentation, suggesting a positive attitude, and two discussed their enjoyment of learning: "I learned that I liked to learn." One student expressed this at a conference, discussing the topic of writing: "My attitude towards writing has improved because I don't get as frustrated. Generally, I have learned how to take critic's advice." These data points show that many students acquire a more positive attitude towards learning while at FGCS, and this helps them enjoy and deepen their learning.

Not only are students positive towards learning, they are also engaged in class projects as a whole. In the student survey, over half of students claimed to have "been allowed by teacher to study something they were passionate about." This displayed a trend in higher positive response rates according to years of attendance at FGCS: while only 40% students who had attended the school a year or less responded positively, 89% of those who had attended five to seven years did. Several students elaborated on this point in an open response question: "You get more chance [at FGCS] to do something you actually enjoy," and "I haven't been to many other schools, but I think that FGCS is more hands-on and engaging." Students who have an interest in the topic being studied will likely be more engaged and curious. In the parent questionnaire, 38% of respondents reported that their children are more "curious or interested in learning" as a result of attending FGCS. Evidence of intellectual curiosity was also expressed in two Capstone presentations as a primary motivation for pursuing the project. These indicators of

student curiosity and engagement demonstrate that a positive attitude towards learning is an area of strength among FGCS students.

Locus of Control. To this point, I have discussed the knowledge, skills and values that students demonstrated during the program evaluation. I will now turn to their internal locus of control, or self-perception of efficacy as agents of change. In analyzing data points related to students' locus of control, I discovered four areas of strength: application of skills, confidence, personal responsibility and sense of accomplishment. I will discuss relevant data for each as well as how these data evidence a strong internal locus of control.

Application of skills. As students take part in experiential activities, they are provided the opportunity to apply academic skills in meaningful ways, therein employing social and ecological literacies and understanding how their skills are valued in the world. During conferences, one student demonstrated her understanding of how academic skills could be applied in describing a bridge design project: "We used triangles, and saw that most bridges that did not use triangles couldn't hold the weight." Not only did she advance her mathematical skills and practice scientific trial and error, but she also saw how her success hinged on her ability to apply these skills to engineering. In the student survey, 67% of students who have attended the school five to seven years reported that they have been challenged by teachers to "solve a real problem," compared to 42% of students who had attended four or fewer years. Fifty-six percent of students who have attended the school five to seven years have then "worked on their own, outside of school, to change something in the community or larger world," compared to 31% of newer students. Parents in the parent questionnaire confirmed this

fact, that students are internalizing their learning and applying it in new settings. Forty-one percent of respondents reported that changes noticed in children included: "is passionate about the topics explored in class" and " is eager to share learning at home." Multiple parents described in more depth how a child has been inspired to apply learning at home, including one comment that "craft projects at school (learning to knit, etc.) Immediately resulted in a much more do-it-yourself attitude at home (from sewing clothes for her dolls to crocheting scarves for herself)." Students such as this one, who understand and are motivated to apply new skills to solve real world problems, are considered to have a strong internal locus of control. Students at FGCS demonstrated this as an area of strength.

Confidence. This theme relates to students self-confidence in their skills and abilities as stewards and citizens of their community. In the parent survey, 56% of parents reported that they had noticed their child "is more confident exploring in the community or environment." One parent elaborated: "My impression of the older kids at FGCS is that, in general, they are much more self-sufficient and confident than similarly aged kids at other schools." On the basis of survey data, students' ecological and social literacies closely matched their perceived confidence in these literacies. Further, students who have attended FGCS longer showed a positive trend in self-identification as "environmentalists," "political activists" and "citizens." For example, 78% of students who had attended FGCS five to seven years identified as citizens, as compared with 42% of students who had attended four years or fewer. While only 22% of the longest-term students identified as political activists, none of the students who had attended FGCS for

a year or less did. (See Table 6 for complete results for this question). Long-term FGCS students demonstrate high self-confidence as citizens and stewards.

In the Capstone project presentations, six students commented on the way in which the project built their confidence. Once student, after learning to build using wood and metal, reported "I learned that I am pretty good at working with my hands." Another explained how she had to "step outside of her comfort zone," and find the self-confidence to sing in front of a group. One student asserted, after completing the project, "I know I have the strength to conquer whatever stands in my way." The 2013 school-wide climate survey offered a final insight. In this survey, 54% of students reported with confidence that they had "made positive changes to my classroom or my school," while 39% more attested that, "I know that I can make a positive change, but I haven't yet." Overall, data show that student believe in their abilities to affect change in the community.

Personal Responsibility. Fundamentally, an internal locus of control relates to a sense of personal responsibility: seeing a problem and taking it upon oneself to fix rather than blaming external factors. Students, in setting personal goals, demonstrated a sense of personal responsibility towards their learning. FGCS encourages students to take a role in their learning process in a variety of ways, including setting learning goals in the fall. In the 2013 climate survey administered to all students, 96% of students responded, "I feel that I am partly responsible for meeting my learning goals," rather than, "My education is my teacher's responsibility, not mine." The student survey revealed that students who have been at the school longer have had more opportunities to set stewardship goals, in particular (67% for students who have attended five to seven years

compared to 36% for students who had attended fewer years.) During conferences one student shared her success in meeting her "stewardship goal" which was to "clean up other people's messes." In fact, the process of student-led conferences also played a role in building students' sense of personal responsibility: When a second grade student demonstrated uncertainty of what to do during her conference, rather than intervening the teacher allowed her to struggle for a moment. This hands-off approach encouraged her to take leadership in directing the meeting and thus built confidence. During Capstone Presentations, a student who failed to complete the project demonstrated a strong personal responsibility, sharing with humor and humility: "I learned that I don't want to go out into the world as a person that doesn't do anything."

Sense of accomplishment. If students have a positive experience completing a goal or project, the sense of accomplishment provides an incentive or reinforcement to undertake further projects. A Level Three student, during conferences, put it this way: "Doing well on a project is like a power up in a video game." In the parent survey, one respondent summarized the impact that accomplishment can have on students:

> Both of my children have been able to see their ability to make a positive change in their communities come to life because of the way they are woven into their school day. When making bowls and soup to raise money and awareness to fight hunger they saw that what they did during the day at school carried over into "real life" and became a positive community event.

During Celebrations of Learning, I observed a high degree of pride in students displaying their work including the Level One habitat project, Level Two bookstore project, Level Three body systems presentation, and Level Three bridge engineering. During Capstone presentations, 11 students (52% of presenters) were noted for displaying a sense of accomplishment or pride. One student, upon publishing her own newspaper, explained humbly "I've met my definition of success." In Level One O&A journals, I identified 12

samples of pride, based either on the detail and completeness of work or students eagerly asking me to photograph a particular page. Nine pages were coded for "ownership or accomplishment," when drawings showed pride in participating in an event or achieving something (see examples in Figures 12 and 13). Data indicated that students were often aware of when they had accomplished something worthy of pride, a strength that would contribute to their internal locus of control.

Student Performance: Areas of Development

Data presented so far reveal a number of strengths that FGCS students possess in regard to knowledge, skills, values and internal locus of control. Data also offered insight into those areas in which students had room to grow, and thus, potentially areas that the PBE program could strive to address. Three areas that could benefit by development emerged most prominently in the data.

Social literacy and cultural awareness. Overall, social literacy was a less pronounced strength than environmental literacy. For example, in the survey, students demonstrated less consistent knowledge about the community, and lower confidence in this knowledge, than was shown regarding environmentally themed questions. A particular area of development that emerged related to students' comfort with different cultures. With the student survey question "I feel comfortable interacting with people different from me," fewer students responded positively the longer they had attended FGCS: 64% of students who had attended for one year or less responded "always" while only 44% of students who had attended five to seven years agreed. While one student identified "human equality" as a social problem he or she cared about, the solution suggested was to "execute all racist bigoted, sexist, theist, homophobic people." While

showing a passion for social justice, perhaps, this response also indicates an intolerance and lack of consideration for different cultural perspectives.

The place-based project curriculum at FGCS may offer a way to integrate relevant cultural teaching. In the alumni survey, while 70% of students reported feeling prepared for high school in the areas of reading and writing, only 40% felt prepared for social studies. Further, a teacher at the April PLC commented on her exit ticket "I wish we could talk about culture and history and how it related to PBE." These data points suggest that teaching students more deeply about local social issues and providing them practice in interacting with diverse cultures would be a potential area to develop at the school.

Initiative. Another potential area of development relates to students level of initiative. While several data points demonstrated high student self-confidence towards work achieved through school projects, students displayed lesser belief in their ability to inspire changes in the wider community or participate in solutions independently. For instance, only one student, new to FGCS, reported that they "definitely" believe they made a change in the community. Sixty-two percent of students reported to have made "a little" change, and 21% "not at all." Students who had attended FGCS longer generally demonstrated a lower sense of self-efficacy in this regard than newer students.

In response to the action scenarios offered on the survey, between 14% and 26% of students reported they "didn't know what to do" for each. Although these students proclaimed to about social and environmental values, they failed to demonstrate initiative in proposing a solution. Part of this may pertain to risk adversity. A higher percentage of students with two to four years of attendance at FGCS were able to identify a social or

environmental problem that they cared about than newer students (77% compared to 54%), however the reverse was true for how many were students were able to identify a solution (22% compared to 31%). Based on other survey data, this cannot be explained by older students having less knowledge or confidence in ecological or social literacies. Therefore, it is possible that these students felt less willing to risk proposing an incorrect or unrealistic solution. This notion is supported by the parent questionnaire, in which only 13% of parents noticed that their child "is more willing to take risks."

Another contributing factor to low student initiative may be their belief in how the outside world perceives their capacities. For example, in response to "I think about the environment when I go shopping," 9% responded, "I don't make decisions about buying things in my home." In another case, a student who reported being concerned about "using too much oil" admitted "I'm not sure that I can [propose a solution], it isn't a problem that can be solved with one person." On being asked whether "I think most adults in our community want to hear what kids think about politics or the environment," 45% overall of students responded "not really," one adding "Adults believe kids are ignorant" and another, "My voice is never heard." If students don't feel their voice counts, a reluctance to take initiative is logical. An area of development for the FGCS program would be to find way to foster agency by supporting student initiative and risk-taking.

Perseverance and project management. Another area of development surrounds students' ability to manage various aspects of a project independently and persevere to its completion. For example, only 18% of respondents to the parent questionnaire reported that their child "demonstrates greater perseverance or determination" since they began

attending FGCS, one of the areas of lowest response. Low perseverance may contribute to the fact that, during the Capstone presentations, nine different students identified procrastination or time management as the biggest challenge in the project, and five other cited the process of completing an independent project as a significant area of learning for them. In another Level Four project called "Project Citizen," which asks students to select a community problem and work to solve it through political means, students have also demonstrated a lack of independence. Project Citizen is challenging, explained a teacher during November's PLC meeting, because students cannot achieve results without a lot of adult support. The project is intended to empower students, but because students may lack the skills or confidence to follow-through, many projects aren't fully realized, and students don't feel "successful." Level Two teachers shared a similar conundrum during the March PLC meeting. As part of a unit on folk tales, these teachers asked students to write and prepare a play of an original folk story. They discovered that students were not able to manage themselves efficiently, and as a result were not ready to present to an authentic audience within the allotted time. These examples demonstrate that without the skills that support independent project work, such as time management and organization, students will be less likely to complete a stewardship or citizenship project. Their feelings of failure, in turn, may affect their self-confidence and locus of control. This is another area that offers an opportunity for development within FGCS' program.

Summary. By looking at the knowledge, skills, values and locus of control exhibited in student data, I sought to inform the question, "How effective is the current PBE program at FGCS in fostering stewardship and citizenship?" The data support that

FGCS students are acquiring a wide array of strengths suggestive of program effectiveness, including social and environmental knowledge related to awareness and issues, and a possession of action skills such as communication and collaboration. Data also indicated that students hold a variety of positive social and environmental values, such as place connection, conservation, social justice and civic engagement. In regard to an internal locus of control, data showed that students excelled in the areas of application of knowledge, confidence, personal responsibility, and sense of accomplishment. These strengths are important to recognize, celebrate and expand upon in the school. Three topics identified as areas of development within were students' social literacy and cultural awareness, initiative, and project management. These are potential areas to focus upon in order to advance the place-based program. All of the themes identified can serve as indicators in future program evaluation and tracking. How strengths and weaknesses might be used to develop the program will be discussed in Chapter Five.

Program Components: Strengths and Areas of Development

In addition to analysis of student performance, data collection targeted specific areas of the FGCS program in order to identify areas of potential development. The first of these was O&As and integrated projects, a fundamental component of the place-based program. In this section, I will draw upon data provided by the O&A Reflections and project presentations during Celebrations of Learning, to describe strengths and areas of development of each program component.

Out and About reflection findings. O&A Reflection forms were used to summarize, evaluate and reflect upon each of the experiential outings that teachers took during the months of March and April. In total, 18 Reflections were collected. Forms

invited teachers to gauge the degree to which each trip provided certain educational qualities or opportunities, such as engagement, team-building opportunities, or service learning. I will share the trends that were observed during these trips, while acknowledging that these data represents only a limited sampling of the weekly outings in which FGCS students participate (see tabulated results in Table 7).

Reflections first asked teachers to discuss trip planning and preparation. For 100% of O&As reported, the community organization visited was set up for youth education. On more than 50% of trips, students were prepared in advance of the trip with the skills and knowledge to be successful, students were excited about the O&A, and students had a "need to know" motivation to participate (e.g., needed to gather information for an authentic project.) Selecting organizations for an outing that were equipped to welcome and teach students, and preparing students emotionally and academically for success on these outings could be considered strengths of the program. The reflection question that had the lowest response was "Are students able to express learning objectives for O&A?" to which only four of 18 O&A reflections responded positively. During informal interviews, teachers stated that they felt it was important that students understand why they are participating in outings, and how their learning will be evaluated—yet the O&A reflection data indicate that this objective often was not met. Building student understanding of O&A objectives may, therefore, be an area of development for the O&A program.

The Reflections also asked teachers to report on student behavior regarding respect, engagement and participation during the trip. Teachers on 66% of trips responded that students were engaged, and 72% reported that students were respectful.

These were areas of relative program strength. However, in only half of trips did students participate by asking relevant questions. In a third of trips, students asked no relevant questions or had "no opportunity to ask questions." While, in some cases, this may be due to a lack of relevance or engagement by students, it may also suggest that an area of development in program design would pertain to teaching the skill of question asking as well as building more opportunities during O&As to ask questions.

The reflections additionally asked teachers to summarize what opportunities were provided by the O&A using a checklist of factors. The most-frequently identified factors for trips taken, demonstrating strengths in FGCS' O&A program, were "opportunities to practice problem-solving or critical thinking," "opportunities to interact with community experts" and "free choice or exploration." The areas with fewest positive responses were "opportunities to participate in service-learning," "opportunities to practice leadership" or "opportunities to engage with community members in a meaningful way." This final factor was determined to be worded too vaguely, and modified to "cultural learning" for future tracking purposes. All three offer potential areas of program development.

Finally, O&A reflections tracked whether students had the opportunity to advance or apply classroom learning after the O&A. This factor proved to be an area of strength, with positive responses for 13 of 18 trips. As a whole, most O&As connected directly with curriculum and those that didn't were determined by teachers to have a strong stand-alone merit.

A particular area of focus in the research related to student reflection. Looking at O&A data, 8 of 18 trips included opportunities for in-process reflection, referring to reflective discussions or activities during the O&A. Further, 10 of 18 O&As included

opportunities for reflection upon return to the classroom. So, while reflection took place in some form on over half of all trips reported, teachers agreed at the PLC that due to a lack of consistency or habit around reflection this is a potential area of program development. This will be discussed further in the following chapter.

Celebrations of Learning project analysis. Classroom projects were presented during FGCS' Celebrations of Learning, which took place in February and June. I used observations recorded during the Celebrations of Learning to evaluate classroom projects using a rubric developed by teachers at PLC. The rubric included seven factors of project-based learning: relevance, engagement, academic learning, 21st century skills, student voice and choice, product and audience, and place-based education. (More information regarding this rubric is contained in the next section.) I averaged the scores received by projects in each area to generate an overview of FGCS projects, and used this to determine overall strengths and weaknesses.

The factor for which projects scored the highest was *Engagement*: 42% of projects analyzed were rated "exemplary" and 58% were "accomplished." Another area of strength was the development of *21st century skills*, such as communication and collaboration. In this area, 42% were exemplary, 50% accomplished and 8% developing. These strengths are consistent with those found during the previous analysis of student performance. Ratings for *Voice and choice*, *Academic learning*, and *Relevance* were consistently rated as accomplished but rarely as exceptional. The lowest scoring areas were *Product and audience* (referring to the authenticity of the final demonstration of learning) and *Place-based education*, which scored 50% developing, 25% accomplished, and 25% exemplary. This suggests that many projects were engaging and excelled at

delivering diverse skills, but fewer utilized local resources to solve an authentic problem. These latter components are potential areas of development for FGCS' program.

PLC Findings: Progress Towards Professional Development Goals

The Professional Learning Community was a rich source of data. For the purpose of program evaluation, I will share four goals for the PLC that emerged through the process of conducting meetings. I will look at how these goals addressed needs of the school, and to what extent PLC meetings as a form of professional development met each goal.

Goal 1: To define the characteristics of excellent PBE projects. FGCS embraces the philosophies of project-based and place-based education, using projects to focus science and social science curriculum. In our February meeting, Principal Vanessa Gray explained, "Great projects enhance our unique school tradition; it's what our school is all about." Projects, however, are just part of a school program that also includes literacy and math education, art, physical education, and social-emotional learning. As we began meetings, one challenge that teachers faced became clear: the need to define how PBE fit into our program and what expectations they should hold for themselves in designing projects.

When we began discussing place-based projects at the PLC, it became clear that teachers had different understandings of terminology often used at the school, such as "project," "experiential activity" and "authenticity." For example, teachers posed the questions, "What is the distinction between projects and learning units or studies?", "Does a project need a product?" and "How much of our teaching should be project-

based?" In response to this challenge, one teacher suggested "We need a mold to talk about projects: It would seem a lot less daunting to have the vocabulary."

To gain some clarity, teachers brainstormed those qualities that were essential for great projects. They attempted to use language that their students might employ to describe these qualities, both to produce a developmentally differentiated description of an excellent project for each level, but also to take student voice into consideration. Through this process, teachers were able to arrive at similar understandings of what factors contribute to great projects, generating a framework with six common themes that arched across the grade levels, but differed in expectations at each level. The characteristics that defined a great project were identified as: relevance, engagement, academic learning, 21st century skills, student choice and voice, and product and audience. I encouraged the addition of a "place-based education" category to incorporate FGCS' philosophical foundation (see Appendix C1 for the "Great Projects Rubric" that resulted). Using the rubric, teachers had the chance to evaluate past and upcoming projects, and to discuss how the rubric could assist in improving curriculum design and planning. Teachers agreed that it was not necessary that every project address all six themes equally, but that it is important that each be addressed at a high level over the course of the year. They also stressed that a rubric should be used in a way that supports and inspires rather than to set overwhelming or restrictive requirements.

Teachers also used the rubric we developed to define and differentiate the terms "experiential activity", "project-based learning" and "place-based learning." This allowed us to arrive at the following common understandings:

- Experiential learning activity is an engaging, hands-on, and relatively short-term activity. It delivers academic skills, and can stand alone or be part of project.
- PBL generally results in a product shared with an audience; it incorporates voice and choice and 21st century skills; and integrates multiple subject areas across the curriculum.
- PBE (in addition to the qualities of PBL) meets an authentic need, has a purpose that serves the community, is relevant to students, has an outside audience and involves interaction with the community. While PBL projects are built around academic content, PBE may be less academically focused.

Following these activities, four teachers made positive comments in anonymous exit tickets expressing an appreciation for this work. For example: "I liked the opportunity to clarify—as a group—our work on PBL" and, "I liked getting consensus on place-based, project-based, experiential learning." In the final May reflection, two teachers identified "clarification of project vocab" as the most valuable PLC activity. However, there was also concern expressed regarding our effort to define projects and vocabulary. For example: "Is there a danger that place-based becomes too confining and rigid a definition and guideline? Is there room in this model for spontaneity and creativity, play, abstract thinking, humor or free expression?" Also, "I wish there was more flexibility in definitions and framework." The feedback indicated, therefore, that the definitions increased clarity for many teachers, but may also pose constraints. While the goal to build definitions around place- and project-based learning was thus advanced through PLC work, teachers would benefit from further exploration in order to increase consensus around these themes.

Goal 2: To reflect upon the PBE program. A second goal of the PLC was to encourage a reflective process with teachers, ultimately in order to strengthen the PBE program in a thoughtful and intentional manner. Though many of our discussions elicited a reflective attitude in teachers, two specific activities required teachers to participate in reflection in order to brainstorm areas for program improvement. The first of these was a collaborative analysis of results from the student survey and parent questionnaire, in which I presented raw data and invited teachers to propose possible interpretations and correlations. Survey data offered insight into how our program affects students, and thus allowed teachers to reflect on their roles in influencing students' responses and notice strengths and weaknesses. Teachers demonstrated their appreciation for this process, commenting: "It is interesting to hear how parents talk about the school" and "I like seeing how we impact students." Further, this process offered an alternative perspective to inspire improvement in teaching. After examining the student survey results, one teacher commented on an exit ticket: "Could we brainstorm ideas for ways to improve problem areas—low spots?"

Each teacher also was asked to complete at least one O&A Reflection form. This was intended to get teachers to think critically about the success of one of their class' experiential outings and how it related to classroom project curriculum. Teachers listed the diverse benefits of this reflective process, including: "It forces you to think about questions you don't normally," "It enables you to improve the next time," "It reminded me the importance of doing the pre & post work with kids," "It confirmed the value of the O&A," "It offered documentation," and "It helped me notice 'tangential' outcomes." One teacher commented in the exit ticket "I wish I would use the O&A reflection sheet

after all O&As." From teacher feedback, this activity also appeared successful in terms of eliciting thoughtful responses and encouraging teachers to take action upon their discoveries.

Though data does not indicate whether PLC and O&A reflection activities built a stronger culture of reflection or were effective in improving the projects, several teachers did value reflection opportunities. Exit ticket comments included: "I like spending time thinking, discussing and reflecting toward stronger outcomes," and "In meetings, I most valued the time and space to reflect with colleagues." In response to the question, "Do you intended to try different O&A reflection practices in the next 1 to 2 years?" 40% of teachers said they "definitely" would and 60% "possibly" would. Overall, data suggest that the goal of strengthening the culture of reflection at the school was partially met: While reflection that did take place during PLC meetings was productive, it is not clear whether the teachers will establish a routine of on-going independent reflection related to PBE and project. The practice of reflection as a teacher would thus be an area to continue exploring in the coming year.

Goal 3: To increase teacher confidence in designing and delivering PBE. From initial discussions, there was strong sense among teachers of being overwhelmed with the diverse responsibilities, including project- and place-based curriculum development. One common desire expressed at the first PLC meeting was making to make O&As planning less stressful by spending less time agonizing over whether the O&A meets certain expectations, or as one teacher put it, "letting go." Exit ticket comments that demonstrate teachers' feelings towards the middle of the school year include "I wish I had more energy" and "How do we balance it all?" Though this feeling

may be attributed to time management or other demands, I hoped that building teachers' confidence in PBE would make PBE project work more rewarding and less time-intensive. To increase confidence, I sought to build common vocabulary, facilitate sharing of place-based knowledge, and provide opportunities for teachers to map out new projects and get feedback from one another.

In the May reflection, in response to the statement, "My understanding of PBE has increased because of these meetings," 29% of teachers responded "very much" and 71% responded "somewhat." Two of the latter clarified "I already felt pretty confident." In response to the statement "I intend to implement new ideas we discussed in my class next year," 80% selected "definitely." Although a substantial increase in confidence was not universal, I feel that the goal to build teacher confidence was, overall, satisfied by PLC work.

Goal 4: To build community and promote collaboration. A final goal that was raised by many teachers was the desire to collaborate with colleagues. In the initial meeting, teachers expressed relating strongly to an article regarding teacher isolation, and goals suggested by teachers were "to find possible areas of project collaboration" and to "increase alignment." An activity in December revealed that the majority of teachers felt they worked best in collaboration, while most of their project planning was conducted solo. In January, an exit ticket read, "I wish we had more time/frequency to collaborate, discuss and make decisions."

As the PLC progressed, teachers overwhelmingly responded positively to the social aspect of meetings. Often, time to discuss their work was the most valued part of meetings for teachers. Comments included:

- I like working with my peers, discussing, sharing, and figuring out what we're doing.
- I like the opportunity to chat with peers with some structure and some play.
- I like meeting in a smaller group and having more time to share ideas.
- I like hearing what other classes are doing.
- I have most valued time to **c**ollaborate.
- I have most valued hearing other people's ideas about projects and project-based learning.

In the final May reflection, three teachers commented that they would like collaboration to be a part of future PLC meetings. In response to "These meetings have increased my connection or sense of community with other teachers," 57% responded "very much" and 29% "somewhat." Of respondents, 57% said that if a PLC were to be offered the following year, they would "very likely come, whenever their schedule allowed it." Fifty-seven percent also responded "these meetings met my expectation for a Professional Learning Community very much." These data indicate that, for many teachers, if not all, the PLC met the goal of building community and collaboration. This is also an important ongoing need that the school should continue to make time for within the workweek.

Summary. Initial analysis of data around O&As, project, and the PLC provided insight into the question, "How might program processes better support the development of stewardship and citizenship among students?" Analysis offered a variety of ways that the program is succeeding to provide stewardship and citizenship education opportunities, and also possible areas of improvement. In regard to Out and Abouts,

potential areas of development included improved sharing of trip objectives with students, and providing more opportunities for service-learning, leadership, cultural learning, and reflection. Pertaining to projects, data demonstrate a need to incorporate greater authenticity in product and audience. In the area of professional development, PLC meetings may continue to advance school goals towards better defining the role of place-based education in the program, making space for personal reflection, and providing time for collaboration. Specific ways that these improvements might be implemented will be discussed in the following chapter.

Unexpected Findings

The data coding process revealed two themes that did not fit into the framework of my initial research questions. However, since they speak directly to the degree of student stewardship and citizenship and the place-based education program, I will discuss briefly what was discovered. The first theme relates to the structure of the school grade level system, and the second is importance of community.

Challenges of school structure. Data provided a variety of evidence demonstrating discord between PBE and the grade-level structure at FGCS, in which each class consists of two mixed grades that loop up in a two-year cycle. In this structure, teachers work with a class for two sequential years. This allows them to build greater rapport with students and parents, establishes a strong classroom culture and community, and allows mentorship between older and younger students. However, this also presents some unique structural challenges. For example, teachers must become familiar with and address two years of academic standards, and meet students with a broader range of developmental needs. This also limits the possibility of repeating

projects annually and thus requires the teacher to develop a more extensive repertoire of curricula that will be taught every other year.

The challenges of this structure emerged in a variety of discussions. One teacher mentioned, for example, "I'd like citizenship and stewardship projects we could build on year after year." Many PBE schools do just this, each teacher relying on a central thematic focus and partnership, and building upon it yearly. However, FGCS teachers generally conduct an in-depth project one year, and then must abandon it the following year so that their students do not have to repeat the same topic. One teacher explained: "It's hard to revisit a project because students get bored." This makes organizing curricular resources as well as maintaining consistent community partnerships more challenging. At FGCS, there are two classes at each level that generally participate in the same O&As and project work. This provides teachers support in planning, but sometimes limits place-based projects because, as one teacher explains: "That means getting 52 students involved. Some projects are difficult to manage with that many students." Another teacher asked, "How do we accommodate a class doing a student-driven project, when we need to make things equitable across the two classrooms?" Teachers would like students to have equitable experiences in the two classes, but it is not easy to find projects that are truly student-initiated yet parallel in content and structure.

Another teacher posed the question, "why does math seem absent from projects?" This, too, can be explained in part by the mixed-grade system. In order to meet increasingly rigorous state math standards and ensure that students are gaining skills in a logical sequence, the school shifts from our mixed-age arrangement into grade level groups for one hour a day for math instruction. As a result, math is presented as a distinct

subject, somewhat detached from the rest of the school program and less readily incorporated in project work. These various conflicts are summarized by the question posed by one teacher: "Is our grade-level set-up able to take advantage of what we value?" Since both the looping system and PBE are fundamental to our program and charter, there is no obvious solution to this conflict. However, it is possible that the structure impacts the quality of the place-based and project-based learning. Therefore, the value of FGCS' approach merits a critical exploration to discover strategies for meeting this challenge.

School community. Data repeatedly highlighted one aspect of the FGCS program: the value for and value of community. From parents mentioning the tight-knit community that drew them to the school and impacted their children, to teachers and students highlighting community as the distinguishing factor of this school, community proved to be an essential strength of FGCS culture.

In the parent questionnaire, 46% of responding parents reported that the small school community is one of factors they like best about school. One parent, in describing changes they have observed in their child wrote "[My child is] generally happier due to the friendly staff, students and accepting environment." Another parent described the impact of the community: "The interaction with other children has been great for my child. She used to be overly shy and would not talk to anyone. Since attending this school she is more outgoing and enjoys trying to help others." Students also value the strength of the school community. When describing how our school is different from others, 18 out of 46 student surveys spoke to FGCS' school community, such as, "It's like everyone here is a family" and "The teachers listen to what you say and worry about

you." Further, in the 2013 climate survey, 75% of students responded, "When I am at school, I feel like teachers, classmates, and I are a strong community."

Community is important in that students who are supported and feel valued at school will likely be more prepared to learn and to take risks. Data suggested several ways that the tight FGCS school community contributed to student achievement. In Level One's Out and About Journals, for example, eight pages were identified with the code "friendship," (see example in Figure 14). I surmised that the experience of sharing these trips with friends made the O&As more memorable. Further, an analysis of O&As suggested a correlation between teamwork and engagement; in fact, students demonstrated engagement on 100% of trips that incorporated teamwork or classroom community building. In contrast, students were engaged on only 40% of trips that did not include community building. In student-led conferences, one student commented "What motivates me is peer pressure: I really like to have a piece that impresses everyone." For her, the value of community increased her motivation to create excellent work. In the alumni survey, one student commented: "The punishment system at the community school is beautiful in that, students are good to please their community. That's citizenship." In this case, the sense of community encouraged positive behavior. These diverse points of data show the impact that a strong community can have on students: engaging them during outings, motivating them to do great work, and encouraging excellent behavior. This strength can serve as a foundation to foster social literacy, community awareness and stewardship. In time, these skills may translate into community citizenship and stewardship.

In the following chapter, I will turn to how the strengths and areas of development described might inform program development. I will propose several concrete recommendations to better support stewardship and citizenship through place-based education at FGCS.

Chapter Five: Recommendations and Conclusions

In Chapter Four, I presented an evaluation of the place-based education program at Forest Grove Community School (FGCS), addressing the effectiveness of the current program in fostering stewardship and citizenship through the development of knowledge, skills, values and an internal locus of control. The data revealed that students possessed strong ecological literacy, a deep sense of empathy or compassion, and a confidence in their work, among other strengths. In regard to curriculum, data showed that the majority of classroom projects are engaging and relevant, and that they deliver essential academic learning and 21st century skills. Data indicated that Out and Abouts (O&As) were successful in engaging students, promoting academic connections, and providing diverse opportunities for citizenship and stewardship growth. Data also suggested that the establishment of a Professional Learning Community (PLC) furthered teachers' knowledge and confidence around place-based education, and importantly, that FGCS' strong community played a role in fostering student excellence. These diverse strengths contribute to the skills, knowledge, values and internal locus of control necessary for the development of stewardship and citizenship.

However, the study also revealed areas of potential program development. Data indicated that students lacked cultural knowledge, initiative and project management skills. It showed that classroom projects do not consistently include a strong place-based tie or an authentic product and audience. Data also suggested that students were often not aware of the objectives of O&As and that reflection was not always engaging, and it offered a number of areas that would benefit from continued exploration with teachers through professional development. In this chapter, I seek to address some of these

weaknesses and challenges that emerged through the program evaluation process by turning to the question, "How might the FGCS program better support the development of stewardship and citizenship among students?" In keeping with my original areas of focus, I will share several recommendations for the school and program in relation to the areas of projects and project planning, Out and Abouts, reflection practices, and professional development. I will also offer suggestions for on-going evaluation. I will support each recommendation with both theoretical guidance and evidence from the data to demonstrate the need for action.

Following this discussion, I will share key questions that emerged through the study, and describe in greater depth those on which I will focus in further research. I also will briefly share personal growth that has resulted from this project and conclude with my hopes for the future of this research.

Recommendations Regarding Projects and Out and Abouts

Through the process of research, I came to realize what a central role integrated projects played in the FGCS' citizenship and stewardship education. Further, it is clear that O&As support these projects in a crucial way by providing students memorable experiences upon which to build learning. I will share several recommendations for improving the efficacy of the program in relation to projects and O&As.

Increase student voice in projects and O&As to build ownership and agency. Experiential pedagogy asserts that when students play a role in designing their learning, they are more engaged and their ability to apply new knowledge is strengthened (Carlson & Wurdinger, 2010; Dewey, 1938; Freire, 1970; McTighe, & Wiggins, 1998). By incorporating a greater degree of student-direction into projects, teachers can enhance

student engagement, build important 21st Century skills, and motivate students to take ownership of their learning.

Student initiative was an area in which my research data pointed to the potential for program improvement. Data demonstrated a negative trend between years of attendance at FGCS and student self-identification as leaders, which suggests that current program practices fail to support student leadership and agency. However, this same group of students reported the highest rate of having "studied something they were passionate about" while at FGCS. Students demonstrated an appreciation for this opportunity, explaining that FGCS "gives you more options to do things that are important to you," and that at FGCS, "I actually learn things!" These comments reveal that students have a great value for projects that give them the opportunity to take the reins. One such project is the 8th grade Capstone, which invites voice and choice in the selection of the project topic, then challenges students to take independent initiative towards meeting project goals. Various data points demonstrated how the Capstone project promotes stewardship and citizenship skills, values and agency. By providing more opportunities for students to design and engage in self-motivated projects of this kind, FGCS could boost student initiative as citizens and stewards.

O&As provide another venue in which student voice could be incorporated more deeply. During PLCs, teachers debated the degree to which students should be involved in selecting and preparing for O&As. One teacher asked, "How can we make sure that students are invested in O&As?" and another, "How much voice could kids have in planning O&As?" Level Four teachers commented that they feel some students take weekly O&As for granted and are disengaged as a result. I believe that granting students

greater ownership in the success of O&As will increase student engagement while building life skills and making the trip more impactful.

A specific way that this ownership can be built is through effective pre- and post-O&A work. Although, O&A Reflections indicated that teachers generally did a good job getting students excited about O&As and connecting it to academic curriculum, an area of weakness was students' ability to express learning objectives for the O&A. When teachers were asked, "What should you do differently next time?" on reflections, eleven comments related to providing better student preparation, including: "be more explicit about objectives," "better front-loading," and "involve students in planning." Ideas to increase accountability and ownership of O&As included teaching students to take notes during trips, giving students special roles or tasks for the outing, having an expert visit before the trip, having students brainstorm questions beforehand, and having students create an action plan or design their own methods of reflection. These methods would encourage students to take responsibility of their own learning, giving value to students' voices and increasing the impact of the experience (Larmer, 2012). By building student ownership, student-directed projects and O&As may additionally provide students with a confidence in their ability to apply learning (McTighe, & Wiggins, 1998), which would improve the program's success in fostering a sense of agency needed for stewardship and citizenship behavior.

Increase social literacy through developmentally appropriate opportunities for service and action. Data indicated that students who have attended FGCS for two years or more do identify with the terms "citizen" and "steward." They possess strong social and environmental values, and are able to articulate actions towards solving

problems. However, social literacy, though most developed in students who had attended FGCS for many years, was still not as robust as students' ecological literacy. Social literacy, particularly in relation to cultural diversity, was an area for development. Further, social knowledge and skills did not appear to consistently translate into action. In the Level Four survey, 50% of all responding students reported they care "very much" about the fair treatment of community members. Responses were highest among students who had attended FGCS for more years, a possible indication that students gain greater awareness of social injustice issues through their studies at FGCS. However, more FGCS students who had attended the school two years or more (17%) responded that they "didn't think about (social injustice) very much" than students new to the school (only 7%). A few explained: "I already know that people are not [treated fairly] so I don't exactly *care*," and "I can't solve every problem." Additionally, fewer longer-term students believed that they had made a positive change in their community than newer students. This discrepancy between knowledge and locus of control suggests that FGCS students' sense of self-efficacy to deal with the immensity of social injustices has not kept pace with their increasing knowledge about these issues.

This idea is also supported by parent questionnaire responses. Those changes in students most highly reported by parents were that their child "makes choices based on environment," "is more confident exploring in the community or environment" and "is more empathetic or compassionate about others' wellbeing," all referring to skills, knowledge and values. On the other hand, parents least frequently indicated learning in areas associated with students' locus of control, such as "demonstrates perseverance" and "is more willing to take risks," Although FGCS may, in fact, be advancing students'

sense of agency, this learning does not seem to be proportional to advancement in social and ecological skills and knowledge,

Literature suggests that this imbalance can result in students becoming overwhelmed or disillusioned rather than empowered as they learn about real world issues. Sobel (1996) cautioned that as children become more aware of challenging issues, they must be provided an outlet to contribute to small solutions, so that they not become overwhelmed and detached. This suggests that FGCS teachers should seek more opportunities for students, particularly in Levels Three and Four, to take part in developmentally appropriate social action and academically rich service-learning, in particular at the school community or local level. Kaye (2006) and Roberts (2002) described the empowering quality of projects in which students see their ability to impact their community. By providing more such opportunities to students, FGCS could increase the transfer of knowledge and values that students already possess into actions.

One way to do this would be through expanding service-learning opportunities on O&As by partnering with local organizations that serve authentic community needs. A favorite O&A mentioned by Level Four students in surveys was the food bank because "I felt like I was helping my community." Overall, data indicated that students enjoy the opportunity to contribute. In the O&A Reflections, students were engaged on 86% of the trips that incorporated a service-learning component, yet on only 55% of trips without service learning. Further, literature shows that service learning can build social awareness and build students' confidence in their capabilities as change-makers (Kaye, 2006). However, it can be challenging to find service learning opportunities that are age-appropriate and relevant to curriculum. Therefore, I recommend incorporating occasional

service opportunities into O&As regardless of curricular project connection, and allowing these trips to serve as powerful independent learning opportunities.

Additionally, service-learning experiences can be closely integrated into social action projects. My research data offered insight into how teachers can involve students in projects that would address real issues in developmentally appropriate ways. Projects at the local level that are relevant to students may be more effective in building a sense of agency than more abstract issues of a larger scope. For example, in the student survey questions asking students to respond to diverse scenarios, the scenario that received the greatest percentage of action responses pertained to a controversial (hypothetical) city law that prohibited children under 16 from being in parks unsupervised. This issue, highly relevant to school age children, also elicited a wide variety of proposed actions and greater specificity in responses than other questions, such as: "create a forum where ideas could be discussed," and "go to city council and appeal to them and maybe get a petition." The issue for which students were least likely to propose an action was related to watershed pollution, followed by a foreign natural disaster crisis, issues that are more likely outside the realm of experience of children. The actions students proposed for addressing these issues were generally less specific, i.e. "tell someone," "try to stop it," "feel sort of bad," or "donate stuff" and showed less variety, for instance, 23 of 29 responses related to donations or fundraisers. These data suggest that students will be most passionate and successful in taking action on those issues that directly affect them, an assumption supported by social justice education, place-based education and service-learning theories (Allen, 1999; Kaye, 2006; Roberts, 2002; Sobel, 2004). FGCS teachers can capitalize upon students' passion for social injustice by seeking real and local issues

as project themes over less tangible problems. By providing more chances to take local social action, the FGCS program also will expand social interaction beyond the school community, providing opportunities for students to engage with diverse members of the surrounding community. This is one effective means of building cultural understanding along with internal locus of control (Hayward, 2012). Improved cultural learning thus would be an additional benefit of local service learning and social action for FGCS students.

Create scope and sequence for stewardship and citizenship skills. Piagetian developmental theory rests on the proposition that a child's ability to grasp concepts grows in relation to cognitive development as he or she matures (Berk, 2009). In this construct, students are provided with concrete and tangible experiences during early education, and slowly graduate to increasingly abstract and complex concepts (Montessori, 1949; Sakofs, 1995). A scope and sequence of stewardship and citizenship skills at FGCS would support teachers at each level in identifying those skills most appropriate at each developmental stage and the types of projects at which their students would be most successful.

Effective stewardship and citizenship education relies on students' acquisition of relevant social action skills. My research data revealed multiple projects in which students struggled, perhaps due to lack of project management and other action skills, to complete a project successfully. For example, while Project Citizen provides students an authentic opportunity to solve a problem of their choice through political channels, teachers have found that this ambitious assignment is challenging to complete within the school year. As a result, many students are unsuccessful at achieving political change,

feel ineffective, and thus may not be getting the positive reinforcement for citizen action desired. Level Two teachers discovered that, when groups of students were challenged to write and present at play before a live audience, many lacked the organizational skills to bring the plays to completion. While these types of projects build important student skills regardless of outcome—failure itself provides valuable lessons—only in reaching the final product does a project most effectively deliver students an empowering dose of self-efficacy. In Level One O&A journals, a drawing of a student flexing his muscles in pride over a new garden bed demonstrates the value in giving these young students a sense of accomplishment. Planting a garden bed, which is work that can be carried out by students after a few opportunities to practice skills under teacher direction, was within the scope of Level One student skills, and was effective in building a sense of self-efficacy. However, more complex efforts, such as the Level Two plays, must be supported by the development of key skills.

A framework that sequences action skills developmentally by grade level would assist teachers in determining what types of social action projects and activities may be appropriate for their classes and also in assessing the types of skills students will need before undertaking an activity, such as presenting a project to community members, writing a letter to a politician, or planning a trash pick-up along the local creek. Further, if these skills are more systematically built in each grade level, students would develop abilities and confidence in their effectiveness as citizens and stewards more markedly through the levels (Bluhn, et.al., 1998). In my project analysis, I observed that though all projects developed 21st Century skills, *all* the important skills could not be addressed in a single project. Rather, these skills are developed cumulatively through many different

projects. With a more systematic approach in the FGCS program, by Level Four, students would more likely be equipped with a robust and diverse skillset, which would enhance their success in increasingly independent social action projects, such as the Capstone, Project Citizen, or other relevant and potentially empowering curriculum utilized by teachers.

Sobel (1996) offered a developmental model for providing students appropriate place-based education. He recommends first emphasizing empathy, providing experiences that foster emotional connections between children and nature, advancing to exploration, in which students expand their geographical and intellectual boundaries, and only beginning to focus on action around Piaget's formal operational stage, at around the age of eleven. My data provided similar insights in structuring a framework of skills. For example, at lower levels students readily associated with themes related to nature and friendship. Level One journals coding indicated strengths in the areas of "ecological knowledge," "connection to animals," and "connection to place." At this age, skills can be developed using these compelling nature-based themes. In successive levels, students showed increased affinity with social topics and issues of fairness and injustice. More Capstone projects addressed social themes than ecological themes. It is also more critical or these older students to see their work recognized by peers and the community than for younger students. To a certain extent, the FGCS projects already incorporate these developmental stages. However, a formalized curriculum guide would bring clarity to developing projects and further support student stewardship and citizenship growth.

Integrate projects more deeply with academics. At FGCS, projects are developed around science and social science objectives, and are used as the focus of experiential O&A outings. However, literacy and math education are taught as separate subjects and are not consistently integrated with project curriculum. This targeted math and literacy instruction has proved essential for many students to build core skills. However, research shows that contextualizing these skills through interdisciplinary projects increases their relevance for students, and thus increases learning (Freeland & Hammons, 1998).

Data from research at FGCS also indicated that a deeper integration of core subjects into curriculum would enhance projects and perhaps increase student excitement for math and language learning. As indicated in responses to the parent questionnaire, the areas of the FGCS program parents most valued were the experiential learning opportunities and Out and Abouts. In addition, about a third of respondents valued projects and environmental focus. In the collaborative survey analysis, teachers suggested that these factors might be at the top because they are the program elements that are most visible and that most distinguishes FGCS from other schools. However, teachers noticed that no respondents selected the literacy or math curriculum as what they valued most at the school. One teacher wondered, "How could we get kids to go home talking about math?" Teachers suggested that perhaps parents are least aware of these areas of our program. By integrating math and literacy more intentionally into project work, parents and would see more value in FGCS' approach to teaching these topics.

Also related to this issue is the tension between projects-based instruction and federal and state standards. Multiple times during PLCs, teachers alluded to this dichotomy, asking questions such as:

- "How will we address standards through projects?"
- "How can we be more student-driven while meeting Common Core Standards?"
- "Currently, curriculum, isn't meeting Next Generation Science Standards—should we made a commitment to meeting these?", and
- "What are we willing to sacrifice to make more time for place-based projects, because it doesn't feel do-able with our current structure and expectations?"

Sobel (2004) advised that teachers should not view PBE as an additional responsibility or burden, but rather as a means of meaningfully integrating these standards into the curriculum. However, over the years, FGCS teachers have experimented with this philosophy and found that PBE-only curriculum does not meet all academic needs. Solutions for FGCS to meet academic needs while integrating project work might include conducting math-themed O&As or using math skills towards analysis of authentic data gathered during O&As. For literacy, this may include seeking leveled texts, spelling and vocabulary words related to project themes, and, as is already often done at FGCS, using writing skills to communicate project learning to parents and the community. I believe that implementing these strategies at FGCS could lessen the sense of dichotomy that exists between math and literacy and project work without detracting from focused academic instruction that FGCS teachers have shown to benefit many students.

Define the role of place-based education in the FGCS program. Although the role of place-based education at FGCS was clarified somewhat during professional development meetings, teacher feedback showed that there is still room for improvement in this area. For example, in May, one teacher asked on a PLC exit ticket, "It doesn't seem like we agree, still, on what a project is...do we need to?" Another teacher asked, "Do the terms place-based and project-based define us and limit us or do we define them?" O'Neill (2010) explained that identifying and being consistent with educational program models "supports cohesion and clarity of approaches" within a program (p. 7). Not only will clarification of how PBE fits into FGCS' whole program bring greater focus to curriculum and build consistency among teachers, but it will also help ameliorate some of the conflicts outlined above related to standards-based education and project work.

As discussed in the previous chapter, at least four teachers expressed appreciation for the PLC activities in which we worked on clarification of project vocabulary. Definitions can serve as a powerful tool, providing a common foundation to discuss and compare projects. The definitions and common understandings we came to have been recorded and should be shared with future staff as they join FGCS. However, the uncertainty and concern also expressed by teachers in the comments above indicate that it will be necessary to continue to refine FGCS' vocabulary regarding place-based education, project-based learning, experiential learning, and the qualities such as authenticity and integration, that describe them. Based on teacher feedback, these definitions should ultimately provide guidance and flexibility, honoring differing

interpretations while still encouraging teachers to be intentional in their work through shared expectations.

In a meeting around FGCS' mission statement, one staff member shared anonymously, "I'd like to see a formal understanding of our 'Stewardship and Citizenship' in a way that helps teachers rekindle the fire and find new ways to include those goals in our scholarship" and another, "I'd like to see a set of indicators of success that we can all use to measure our efficacy and mission fulfillment." FGCS is continuing a process to refine its mission statement during the 2014-15 school year, and I hope this effort contributes to fulfilling a need for greater clarity in the role of PBE and PBL at the school.

Refine and utilize a rubric to improve place-based projects. Expeditionary learning, a model that draws on similar philosophical foundations as place-based education, provides schools with a framework that guides teachers in developing quality projects that integrate academic content and authentic community needs. This framework offers teachers one concrete way to build confidence in the excellence of their project work (Hays, personal communication, October 11, 2013). FGCS could also benefit from having and utilizing a clear framework for project excellence. During the PLC conducted as a part of my research, teachers collaboratively developed a draft of such a rubric, outlining seven qualities of excellent projects with developmentally differentiated indicators.

In my analysis, I tested the functionality of the initial rubric by evaluating the projects presented at Celebrations of Learning. This process revealed that the strongest element among FGCS projects was student engagement, and the weakest was place-based

education. The projects that proved "exemplary" in multiple areas included the Level One garden habitat project, the Level Two bookstore project, Level Three biomimicry inventions, and Level Four Capstones. I also found it challenging to pinpoint the degree to which certain projects met the definitions use. I recommend that the rubric be modified or expanded by reflecting upon those qualities that made these projects exemplary. This process would ensure that the rubric reflects our values and students learning as authentically as possible and give teachers pride and ownership in the document. Once finalized, this rubric will encourage reflection and raise the degree to which each project addresses essential qualities. Teachers could strengthen projects at FGCS by using this rubric consistently through the planning process.

Value non-academic learning in Out and Abouts. Weekly O&As are a prominent feature of the place-based education program at FGCS. The structure of weekly outings provides teachers an incentive to get kids outside and make curriculum place-based, and offer students an opportunity to engage with a large variety of organizations and natural spaces near their home, contributing to sense of place and building stewardship and citizenship. During a PLC discussion, teachers were eager to debate the value of O&As that didn't fit neatly into the standards-based curriculum. However, they agreed that many trips whose learning falls outside of the written objectives are nonetheless meaningful and exciting for students.

In a survey question that asked students how FGCS differs from other schools, 14 student responses mentioned the benefits of O&As, none of which related to academic learning. For example, students noted, "We get more outside experience than book stuff," "I feel like I can explore more," and "We get to go out every week and we get to

be part of the community and get close to nature too." The trips that they describe, whether to hear the symphony or to invent games in a nearby forest, can build cultural capital and teach skills that contribute strongly to stewardship and citizenship, such as independence, city smarts, sense of place, teamwork or flexibility. The Level Four teaching team has formally acknowledged the value of these "cultural capital" O&As, and intends to plan for them during the 2014-15 school year. I will offer a few specific ways to plan for these seemingly "unplanned" benefits that arise out of O&As.

Incorporate opportunities for community building. Level Four students, in reporting favorite O&As, repeatedly selected experiences that included a social component. These included an overnight trip to the state capital because it was "fun bonding," Outdoor School because "You learn a lot doing stuff with friends," a nearby farm because it is "fun to be with our class outside." While the goal of O&As is to enhance students' learning, a variety of research shows the connections between affective components and learning (Carlson & Wurdinger, 2010; Dewey, 1938 and others). Level One O&A journals depicted the value of friendship in eight drawings. This social element often appears to contribute to the impact of O&As. In O&A reflections, a strong correlation was found between opportunities to build classroom community and engagement. On those trips that included community building through a shared meal, free play or team challenge, students were engaged 100% of the time, while students were engaged only 40% of the time on trips that included no teamwork component. A great way to incorporate community building that also has academic value is by challenging students to apply learning through small group problem solving. Carlson and Wurdinger (2010) described how problem-based learning invites students to work

collaboratively while also practicing critical thinking and leadership, a factor that was found to correlate positively with engagement.

There exists a possibility that social interaction will also detract from trips. One teacher shared a challenge she found with O&As: that her students were so busy socializing; they failed to take in the impressive sights of a new spot, asking, "How can I prepare older students, who are very socially driven, to notice things in the environment?" However, if social behavior can be harnessed by teachers as a tool, rather than viewed as a distraction in planning O&As, it may in fact contribute to engagement and effectiveness of O&As. In Chapter Four, data revealed that a strong sense of community between classmates could actually motivate students to put effort into their work. This is supported by Berger's (2003) educational approach, in which he sought to build a culture of excellence among students such that they pushed each other to excel. FGCS possesses a strong community base on which to build a similar culture, and Out and Abouts offer an exciting opportunity to build community outside the classroom.

Plan opportunities for natural exploration. Carson (1965), Louv (2008), Sobel (1996) and others touted the value of unstructured exploration in student cognitive development, connection with nature and confidence. Though it proves challenging to schedule time for natural exploration within the school day, data show that those few opportunities FGCS students have for natural exploration are valued and beneficial. When asked their favorite O&As, many Level Four students mentioned trips in natural spaces; these included the adventure of caving near Mt. St. Helens and a local forest that a student enjoyed because "It was peaceful being outside in nature." In the O&A reflection, twice teachers mentioned that "free exploration" or "not too much structure"

contributed to engagement. O&A reflections also associated ownership in learning with free exploration. For example, one day when free time was given in the school garden, some Level One students excitedly set to work constructing natural fairy homes while another group took on weeding a patch of thigh-high thistles. These independent activities not only indicated enthusiasm for the natural space, but also demonstrated exactly the type of stewardship behavior that FGCS is seeking. I recommend that O&As planning not only permit free exploration as an activity when time permits, but occasionally even incorporate it intentionally into the curriculum.

Repeat trips. Teachers expressed a desire to have a "place" for their class to get to know deeply. Encouraging repeat trips to certain locations will build a sense of place that can be powerful in developing the skills and values for stewardship. In Level One journals it was found that most drawings coded as showing a "sense of place" were associated with places that we made return trips to over the seasons—whether the school garden or the Tillamook forest. Although these places may not have the same "wow" factor of novel locations, students develop an emotional connection that builds anticipation between trips and contributes to students' desire to care for the place. One parent shared, "I have found that the Forest Grove O&As—things that inform the kids about what history lies within their own town—are the ones that tend to resonate most deeply. Almost all of the projects they work on end up resulting in a deep understanding of the material." I recommend that each level select a nearby place for students to return to multiple times over the year and get to know deeply as caretakers. An Action Plan (Appendix C2) provides a summary of recommendations regarding projects and O&As at FGCS.

Recommendations Regarding Student Reflection Practices

One focus of this research was how reflection practices at FGCS affect development of stewardship and citizenship. Due to limitations in the scope of research, no clear conclusions can be drawn regarding the most beneficial methods of reflection. However, multiple data points did support the value of students reflecting upon Out and Abouts and project work. Therefore, I will offer a single recommendation: that teachers establish deliberate reflection practices around place-based work in their classrooms.

The O&A reflections indicated that fewer than 50% of O&As offered opportunities for students to conduct in-process reflection. Further, trips that included in-process reflection appeared to be negatively linked with engagement. Though this may be a false correlation due to confounding variables, if indeed reflection discourages engagement, it is essential that FGCS discover more effective and student-friendly reflection techniques to utilize during O&As. Post-trip reflective activities, either through a journal, discussion, game, or application through academic work were reported after ten of 18 trips. However, three teacher comments addressed the challenge of completing these reflections: "It is valuable to stop and discuss findings, but challenging with Level One," "We started O&A journals but lost track!" and "With schedules, it's difficult to find time to reflect." These diverse challenges are valid, and may indicate that a routine of reflection has not been established as a culture in classrooms.

Fostering a habit of reflection could enhance student learning in a variety of ways. Carlson and Wurdinger (2010) described various benefits of reflection, including helping students identify learning outcomes and accomplishments. Level Four Capstone presenters were asked to reflect upon their process in order to acknowledge their own

strengths and weaknesses, often showing impressive metacognition. Such retrospection allows students to celebrate and employ their perceived strengths, and acknowledges limits and perceptions (McTighe & Wiggins, 1998).

Secondly, reflection helps students think critically about connections between their values and behavior towards more responsible social action (Hayward, 2012; Kaye, 2006). For example, a lower percentage of students in the survey reported that they "always recycle" than students who reported to care "very much" about protecting natural resources. While this dissonance between values and behavior may be attributed to infrastructural barriers or lack of knowledge, I believe that greater reflection could bring the connection between students' behavior and its impact into focus, promoting responsible stewardship or citizenship.

Third, reflection supports students' ability to transfer learning to future situations (Carlson & Wurdinger, 2010, McTighe & Wiggins, 1998; Rothstein & Santana, 2001). In the O&A Reflections, teachers noted that when students asked great questions on O&As, it was because they had important knowledge they had gained in class to contribute. Students are excited when they see the value of their academic knowledge, and this encourages them to utilize it and remember it.

Finally, a process of reflection can help students recognize their own strengths as agents of change (Freire, 1970). Again, the oldest FGCS students were the least likely to identify as "leaders" in the student survey, however were the most likely to have "made positive change within their community." Because they are attending a school that constantly emphasizes stewardship and citizenship as expectations for daily behavior, these students may fail to see their valid contributions as noteworthy. Reflection could

help students realize and appreciate the accomplishments they make, however small or large. At FGCS we invest considerable time and effort in planning O&As and other experiential activities in order to bring learning alive for students. However, I believe we could increase the transfer of this learning into stewardship and citizenship through consistent reflection.

Recommendations Regarding Professional Development

In this research, I facilitated a monthly professional learning community in part to solicit feedback on findings, in part to conduct collaborative analysis and problem solving, and in part to study professional development through an action research lens. While the PLC had both successes and failures, discussed more thoroughly in Chapter Four, overall results indicated that it was beneficial to teachers and to the quality of PBE at FGCS. My first recommendation relates to how this type of meeting should operate if it is to continue, and then I will offer some key topics that I see as areas of learning that would benefit FGCS teachers.

Continue PBE professional learning community. Dubel and Sobel, in discussing training teachers around PBE, noted the importance of embodying what is preached: that is, to conduct professional development in a way that is place-based and experiential (as cited in Gruenewald & Smith, 2008). The PLC can potentially meet this need at FGCS by inviting teachers to enhance their own teaching craft through hands-on, collaborative work that is specific to their unique context. In addition, PLCs incorporate three factors not necessarily offered by other forms of professional development.

First, the PLC can focus on relevant and outcome-based discussions. Although many PLC meetings last year dealt with somewhat theoretical topics, based on feedback

through PLC exit tickets, I would encourage future meetings to trend towards concrete outcomes. Teachers shared that activities that were most helpful included "discussing something tangible rather than philosophical," and "planning projects for next year." Teachers expressed a desire for more time to brainstorm project ideas and get feedback on curriculum. The semi-structured venue of the PLC offers an ideal opportunity for increased planning to take place.

Second, PLC meetings can incorporate teacher reflection. Several teachers commented on the value they had in having "time and space to reflect with colleagues." They enjoyed seeing student survey results, evaluating their own projects, and completing O&A reflections. However, as one teacher comments, "I think many teachers feel like we don't have time to reflect on what we're doing in the classroom and how it is impacting our students." Another shared "I wish we could use O&A reflection after all trips," but admitted that it would be challenging to get done. Therefore, structuring this into professional development is an excellent way to provide teachers needed space to be reflective, and to benefit from others' insights.

Finally, since the PLC focuses specifically on the school's unique needs, it allows for valued collaboration time. Time to collaborate was viewed as a huge benefit to our meetings by many teachers, allowing exchange of resources and mutual support during times of stress. Comments shared by teachers included, "I like working with my peers, discussing, sharing, figuring out what we're doing," and "I like meeting in a smaller group and having more time to share ideas." One teacher explained in an exit ticket, "I like that we can ask honest questions about our program and think through the concerns together." Two teachers specifically mentioned their desire to increase the degree of

cross-level collaboration at the school. A parent also expressed, "I would really like to see the oldest children interacting with the younger children, like when the older kids helped the younger kids write a story." This could happen best by bringing teachers together to share what they are working on and find commonalities.

PLC meetings aren't a one-time learning event, as is much professional development, but rather an on-going process of working with colleagues to improve teaching. Therefore, I would recommend continuing to hold PLC meetings around the topic of PBE to improve projects, O&As, and the program as a whole.

Focus topics of professional development. Many of the recommendations offered above related to projects and O&As will be more effectively implemented with support through professional development. Whether addressed through the PLC or another forum, the following topics emerged as areas in which teachers would benefit from receiving professional development.

Incorporation of student voice and choice in projects. While teachers agreed that student voice and choice is really valuable, many posed logistical questions such as, "How do I incorporate student choice with younger students?" or "How to rein students into logical projects without limiting voice?" Research and resources presented through professional development would support teachers in designing more highly student-directed projects.

Differentiation strategies within PBE. While all educators must find ways to differentiate lessons for students with different skill levels, FGCS has the additional challenges of conducting demanding authentic projects with mixed-grade classes. Teachers expressed the difficulty of managing projects for this reason, for example,

"[How do I] not get too complex for student abilities?" Professional development to assist teachers in supporting all students through complex projects could also work towards a goal of creating a scope and sequence for stewardship and citizenship skills.

Integration of PBE with academic standards. Earlier in the chapter, I discussed some of the conflicts around the integration of Common Core Literacy and Math Standards, Next Generation Science Standards, and standardized test preparation with project- and place-based work. Teachers would benefit from working collectively to brainstorm creative ways to bring these two educational focuses together.

Sense of place education. In the rubric evaluation, the place-based focus of projects was an area of relative weakness among all projects. Further, several teachers commented upon their desire to be able to offer more an informed local focus in project planning. Teachers should have time and support in gaining their own sense of place, including a familiarity with local natural spaces, training in wildlife identification and relevant field science skills, and understanding of local organizations and cultural groups. This rich local knowledge would allow teachers to enrich their PBE curriculum related to natural science, cultural learning, and social action.

Recommendations and Intentions for Further Evaluation

The ultimate goal for this project was to evaluate the PBE program at FGCS for development of student stewardship and citizenship. I conducted research towards this goal through an action research approach, which is influenced strongly by the perception of researchers and participants, and iterative in nature. My intention, reinforced by input from FGCS teachers, is that this project will be just the beginning of a process of ongoing and increasingly reliable evaluation. The methods designed for this research can also

inform effective evaluation efforts. Below are recommendations for further program evaluation efforts.

Continue to track experiential outings. My research included reporting on only 18 O&As, a very small sample of the weekly trips that take place across grade levels. Nonetheless, teacher feedback indicated that these short reflections were valuable in numerous ways. Reflections provided feedback and insight into specific trip locations and activities, should these locations be visited again, and also revealed trends that could be used to improve a key part of the PBE program. One unexpected result, for example, was the data on correlations between student engagement and service learning, leadership, classroom community building, problem solving, the presence of a community expert and free exploration. Although any or all of these correlations could be spurious, further tracking with a much larger sample size would provide more valid data (Creswell, 2010) to indicate which factors are, indeed, most crucial in building engagement. Through my experience in completing O&A reflections, I have refined this form into an electronic "O&A Report." I intend to complete this for every O&A that I coordinate during the upcoming school year and will analyze the results to form a better understanding of the value of O&As.

Conduct surveys every two years. I found the student surveys to be a rich and unexpected source of insight into the FGCS program. With the demographic structure at our school, in which a large shift in students occurs at Level Four, the survey was an opportunity to contrast the responses of students that had grown up in the FGCS community throughout their elementary education with those of students coming from other environments, thus offering a snapshot into the long-term impact of the program on

students. Teachers expressed an appreciation of the chance to reflect upon these concrete data to improve their teaching. I would recommend modifying the survey through student input to improve reliability, then administering it every two years with middle school students. If possible, I would also recommend finding another local school willing to conduct the survey with students. This would provide greater context in which to compare FGCS students' results. Similarly, the parent survey could be administered without considerable effort every four or five years to solicit an alternate perspective. The quantifiable results obtained through survey data can provide a yardstick to measuring the ongoing the impact of a program (Thomson & Hoffman, 2003), and will offer a unique and valuable perspective of FGCS' place-based education.

Complete and track project rubrics. As discussed above, I recommend that teachers work to refine then utilize the project rubric created collaboratively during PLCs. I believe that this tool could inspire teachers to design projects more authentically and more intentionally. I would like to see teachers rate their own projects on these rubrics, and maintain a copy of all projects conducted over the year at all levels in order to provide a holistic picture of FGCS project work. This would also offer a sustainable evaluation method to assess the program, that is simple yet systematic and participatory (Adroin, Powell & Stern, 2006). I plan to conduct such a process this year through PLC meetings.

Collect stories of great projects. An initial intention in this research was to collect a portfolio of "great student work," that is fully demonstrative of excellence in scholarship, stewardship and citizenship at FGCS. As the research evolved, I accepted that I had neither the time nor structures in place to complete this goal. However, I

would recommend that the school continue to seek a logistical and feasible means to collect work samples as an evaluation tool. Until such a means presents itself, an easy shortcut would be to collect data anecdotally from teachers regarding those projects that stand out for their impact, authenticity, or success. In the upcoming year, I intend to record such stories in an article format, which I will post to the school's website, and archive for future reference or to share with the broader professional community. Principal Vanessa Gray expressed as a goal for teachers to "be able to really strengthen and then promote their projects." After completing a project, service-learning educators stress the importance of celebrating the accomplishment to reinforce learning in order and apply it to future projects (Kaye, 2006). Encouraging teachers to share and celebrate excellent project work will build upon educational successes and motivate our school community towards deeply meaningful place-based projects.

Next Steps

Areas of further research. Within this research project, and particularly through PLC discussions with teachers, new questions continually arose regarding how to plan great PBE projects, how students learn best, and what school model is most beneficial for students. Here are the topics that arose most prominently as potential areas of further research at FGCS:

How can reflection be more engaging? In Level One O&A journals, I observed that few opportunities had been provided for students to engage in higher-level thinking or use creativity. In O&A reflection data, trips with an element of in-process reflection showed a negative correlation with engagement. Level Three and Four students, in particular, expressed disinterest in the process of reflection. However, reflection is

essential for students to understand the impact of experiential learning and place-based outings. It would be beneficial to investigate and implement different strategies for incorporating reflection into projects while monitoring students' engagement and quality of response.

How can math be more deeply integrated into PBE and projects? Teachers asked during PLCs, "How could we kids go home talking about math?" and, "How can we make math more exciting and linked into projects?" While many students express dislike or disinterest in math, PBE offers a tool to demonstrate to students the valuable application of math. Due to our grade level structure, we are currently not utilizing this opportunity to its potential. By investigating which math standards are most appropriate for experiential connections, it would be possible to find more strategies to inject project work with math applications, both strengthening the authenticity of the project and making math more meaningful to students.

How can projects be made more authentic while still delivering academic content? Teachers agreed that authenticity was a factor that increases the impact of a project by showing students the value of their work in the "real world." However, teachers also found it challenging to meet rigorous academic standards through authentic place-based projects. A variety of resources exist to support this integration. Further research could identify strategies to help FGCS teachers link specific standards and academic units to place-based needs and opportunities.

Is the current grade-level structure most effective for meeting FGCS' educational priorities? As discussed in Chapter Four, FGCS' mixed-grade level structure presents a number of challenges in regard to scheduling project work, integrating PBE with

academics and differentiating projects for a wide range of student needs. While the FGCS mission focuses on hands-on community-based education, the charter also highlights the value of a mixed-grade level approach for the extended student-teacher relationship and sense of classroom community it provides. The need to juggle PBE and academic standards in the context of mixed-age classrooms brings an added level of complexity to FGCS program planning. Research that examines the costs and benefits of each component would provide a stronger basis for making decisions regarding scheduling and class arrangement.

How can FGCS maintain student enthusiasm and motivation through the more advanced grade levels? Teacher comments in the PLCs brought up the challenge of keeping older students from "burning out" on stewardship and citizenship. They wondered how to better use their social energy on O&As, and observed that they were less excited about community trips than younger students. In the surveys, older students showed less confidence in their role as leaders and change-makers, suggesting possible disillusionment in their ability to be agents of positive change. It is clear that the texture of educational opportunities must shift as students pass from first to eighth grade in order to maintain enthusiasm. As discussed above, including more social justice action projects and allowing social interaction on outings could help address this problem. However, deliberate research in collaboration with students of this age, could provide valuable insight into how projects may be planned to meet program goals and maintain the enthusiasm and interest of middle-school students.

How can student choice be incorporated effectively into projects while still delivering academic content? During PLCs, teachers agreed that projects with more

student voice and choice were preferable to strictly teacher-directed activities in terms of engagement, ownership, and building student independence. However, they struggled to find appropriate strategies to include student input in project planning without sacrificing learning objectives. Questions included:

- How can student choice be incorporated with younger students? How can we be more student-driven while meeting Common Core Standards?
- How to rein students into logical projects without limiting voice? and
- How much voice can kids have in planning O&As?

Following the iterative nature of action research, to continually accommodate new understanding and design further questions to explore (Mills, 2003; Stankorb, Stapp & Wals, 1996), I have selected this final question to focus my on-going research with FGCS. I propose to undertake research around different approaches to initiating and managing student-directed projects. I will begin by reviewing literature to extract specific strategies or curricular frameworks proven successful. I then will seek to implement these techniques in my work by providing students choice during O&A activities or reflections, soliciting student help in planning O&As, or working collaboratively with a teacher on a student-directed PBE projects. I will create indicators to track how these different strategies affect students in terms of engagement, academic learning, and agency. As an educator, nothing is more rewarding for me than when students take full ownership of a learning experience, asking me eagerly for a magnifying box with a bug clasped gently in their hands or inviting me to see a patch of lichen they discovered sprouting on a forest log. I am excited to discover more ways to make these

spontaneous student-driven inquiries an intentional part of my teaching repertoire, as well as an area of strength of the FGCS program.

FGCS Action Plan development. In addition to my own commitment to pursue research and continue tracking data, I will use these findings to create a PBE program "Action Plan" for FGCS. During the 2014-15 PLC meetings in November, January, March and May, I will present my findings regarding program strengths and weaknesses, recommendations, and possible areas of further research. As a group, teachers and I will select two to three priorities for the school, and use the PLC to develop our understanding around these themes, brainstorm specific actions steps and define indicators of success. The resulting Action Plan can provide the school both a vision and a trajectory for further development for the program. Thus, the research reported here is jus a "jumping off" point to innovation, exploration, and improvement in the FGCS program. Appendix C2 presents a working draft of this Action Plan.

Summary. In Chapter Four, I presented an evaluation of the place-based education program at FGCS in regard to the development of skills, knowledge, values and internal locus of control that foster effective stewardship and citizenship. I discovered areas of strength and weaknesses among students and program elements. In Chapter Five, I synthesized these findings with theories presented in the literature review to offer a variety of recommendations for program development. These recommendations addressed the four initial sub-questions, relating to projects and O&As, student reflection, professional development and on-going program evaluation. Although I addressed all aspects of the investigation as intended, I also came away from the research process with a variety of further questions and areas to explore, which I have

shared above. I will now discuss my final objectives for the project: to achieve personal growth and to benefit my educational community.

Personal Growth

I approached this research through an action research lens, inserting myself deeply into the learning process with both teachers and students. I adapted my research approaches in response shifting priorities and the arising discoveries during the course of the research. As a result, the findings and recommendations I have shared carry numerous areas of bias, and further, focus primarily on identifying specific strategies to inform program development at the Forest Grove Community School. I would dream some day of having an impact on students across the globe by finding the secret ingredient to meaningful education, but I am satisfied with a slightly more humble accomplishment: to know that my insights may provide just a little more support to the teachers down the hall. However, should this research also find its way to a few other hands, I hope it inspires other educators to embark on their own research, to be more critical of their experiential approaches, or to consider embarking on place-based projects with their students.

Regardless of the impact of this research, I can confidently attest to the personal growth it has encouraged in me as a researcher, a teacher and a citizen of my community. First, it encouraged me to establish post-teaching reflection as a habit, as important as brushing my teeth or locking the door on the way out. Now that I take it for granted, the numerous benefits of reflection are clear to me, and it will not be easily shaken off. Secondly, through initiating evaluation and facilitating PLC meetings, I became a leader at the school, something I would not have had the audacity to do without

this research project compelling me forward. By forcing myself to take a doubtful leap over this personal boundary, I came to realize that I do have a unique perspective on education, that I possess skills and knowledge that equip me as a capable advocate for place-based education, which I intend to continue to employ. Third, working more closely with colleagues, I gained awareness of the struggles faced in the classroom and the administration office. I have a more holistic picture of how a school is run, and feel more confident in navigating project planning with teachers, knowing where to push PBE and where to accommodate other equally valid approaches. Finally, my learning and effort allowed me to take a new role at the school, more involved in all O&As and other forms of place-based education. This year, my position in the school has shifted to focus entirely on conducting experiential education, and I am grateful and honored by the trust placed on me to assume this role.

Final Thoughts

School started back into session for the 2014 year only a few months ago. And once again, I was thrown into the buzz of school life. I popped into classes to perform skits about the value of rain boots, attempt to memorize new names, and lead introductory reflections with students about their hopes for the year. On my first O&A to the school garden, I was proud when a second-grade student remembered how to identify a basil plant from its smell. He joyfully led a group of first graders to harvest some for pesto just as he had learned, by carefully holding the stem with one hand while plucking off the leaves one by one. A simple contentment swept over me, watching this young student practice loving stewardship in the garden and teach his younger classmates the skills to do the same.

Citizenship and stewardship can be small actions, almost too small to notice, but these are the backbone of a healthy and functioning community. Kids will come to school with diverse skills and assets, and as an educator, I have the power of my curriculum design, my words and my actions, to support each student in becoming a more knowledgeable, motivated and empowered member of his or her community. This intentional choice has to be renewed each morning, over and over again, despite the grind of day-to-day school life, despite the standards and the critics and the ever-present lack of time. I must hold this choice in mind even after discovering the trash that was once more left in the school garden, or the footprints crushing chard seedlings, or the tears after cruel words were exchanged between students that I thought knew better. Even amidst the sometimes frenetic rhythm of the school day, teachers can make a choice to be stewards of their spaces, and citizens of their communities, and to build the school day, piece by piece, to create a culture that supports students in becoming passionate and effective citizens and stewards. I am proud to be among such educators at FGCS, and I hope that this research contributes, in some small way, to the day that a former student approaches teachers at FGCS to tell them how he or she has changed the world.

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Tables

Table 1. *Research Methods–Triangulation Matrix*

Question and Sub-questions	**Indicators/Data Required**	**Primary Methods of Data Collection**
EVALUATION How effective is the current program at FGCS in fostering stewardship and citizenship?	• Knowledge & skills • Values • Locus of control	• Surveys • Work samples • O&A Reflections
To what degree does the program provide the knowledge and skills for stewardship and citizenship?	• Students' demonstration of social, ecological literacies. • Action skills - i.e., communication, leadership.	• Student survey • Work Samples • Project analysis
To what degree does the program support the values required for stewardship and citizenship?	• Engagement • Student stated values. • Student demonstrated values.	• Student survey • Parent survey • Work samples • O&A Reflections
To what degree does the program build the internal locus of control required for stewardship and citizenship?	• Student confidence in abilities. • Feelings of success, perseverance, etc.	• Student survey • Parent survey • Work samples
DEVELOPMENT How might program processes better support the development of stewardship and citizenship?	• Current processes • Challenges, opportunities • Teachers' needs	• O&A reflections • Project analysis • PLC records
How might project design and O&As better foster citizenship and stewardship?	• Current planning challenges • Example of successful projects and O&As	• O&A reflections • Project analysis • PLC records
How might reflection methods better support the development of citizenship and stewardship?	• Current reflection practices • Teacher reflections	• O&A Reflections • Work samples • PLC records
How does the establishment of a PLC impact the program?	• Teacher and administrator reactions	• PLC records and exit tickets

Table 2. *Example of Celebration of Learning Project Analysis*

Project Summary	Project Components	Evaluation	Learning Demonstrated
Biomimicry Inventions: Level Three students built a prototype for an invention based on biomimicry and using recycled materials. They created a poster describing the local sustainability problem solved by their product and made a video advertisement. Students presented to community members during Celebration of Learning.	1. Relevance and authenticity 2. Engagement 3. Academic learning 4. 21st C skills 5. Student voice and choice 6. Product and audience 7. Place-based	Exemplary Accomplished Accomplished Exemplary Exemplary Exemplary Exemplary	Knowledge: • biomimicry • community sustainability issues • ecological issues Skills: • design process • video production • problem solving Values: • sustainability Locus of control: • presentation to authentic audience (sustainability committee)

Each significant class project was analyzed in this manner. Exemplary evaluations was awarded if the project exceeded these expectations, Accomplished if the project met all expectations, and Developing if the project did not meet all expectations. This data provided a snapshot of the type of projects FGCS participate in, and what they may be gaining through their participation

Table 3. *Changes Observed in Students by FGCS Parents*

In what ways have you noticed changes in your child(ren) during their attendance at FGCS? I have noticed that my child:	**% positive responses**
is more confident exploring in the community or environment.	56
makes choices based on the health for the environment (e.g., food consumption, recycling, etc.)	54
is more empathetic or compassionate about others' wellbeing.	46
is passionate about the topics explored in class; is eager to share learning at home,	41
is more curious or interested in learning.	38
encourages me to make choices based on the health of the environment.	36
is more confident interacting with adults.	36
is more interested in attending or participating in community events.	28
is more confident in ability to set personal goals and follow through with them.	26
shows a more positive attitude towards learning.	23
demonstrates greater perseverance or determination.	18
is more willing to take risks.	13
I have noticed no significant changes in my child during attendance at FGCS.	8
likes to play outside more.	5
other	5

Table 4. *Ecological and Social Knowledge and Confidence of FGCS Level Four Students*

Years Attendance at FGCS	0-1 years	2-4 years	5-7 years
Ecological Knowledge (% score of 6 points)	23%	48%	76%
Confidence in Eco. Knowledge (% score of 6 points)	25%	48%	74%
Social Knowledge (% score of 4 points)	41%	38%	72%
Confidence in Social Knowledge (% score of 4 points)	36%	35%	63%

Table 5. *Student Survey: Sample Scenario Question and Responses*

A law is proposed in Forest Grove that youth under 14 should not be allowed to use city parks without adult supervision. If you disagreed with this law, what would you do to change it?

Years Attendance at FGCS	0-1 years	2-4 years	5-7 years
"I would not do anything"	8%	5%	0
Don't know	23%	15%	11%
Proposed action	69%	80%	89%

Categorized sample of write-in actions students would take:

- **Political action (13 responses)** stage a protest; go to city council and appeal to them and maybe get a petition, put up signs and make speeches
- **Encourage public debate (8 responses)** talk to people who also didn't like it and work to keep it from getting passed, try to create a forum where ideas could be discussed, find a way to prove we are responsible enough to be out alone
- **Civil disobedience (3 responses) -** go against the law, do it anyway
- **Get angry (4 responses)** - put my food down! man!, freak out and make them change it
- **Unsure (5 responses)** -tell my parents, but I wouldn't know what to do.

Students were asked to respond to four scenarios such as the one above. Data was analyzed to determine (a) students' values regarding different social and environmental issues, (b) trends in students' responses based on years of attendance at FGCS, and (C) students' skills to propose diverse and effective action strategies.

Table 6. *Student Survey: Students' Self- Identification*

Percentage of students to identify with each characteristic, sorted by years of attendance

Characteristics	0-1 years (15 students)	2-4 years (21 students)	5-7 years (9 students)
Citizen	47	38	78
Environmentalist	7	24	22
Political Activist	0	14	22
Leader	33	52	22
Good friend	87	57	56
Observant	47	57	44
Thoughtful	53	52	67
Likes Science	27	47	56
Likes Outdoors	67	62	78
Likes Technology	47	52	78
Other	20	52	22

Table 7. *O&A Reflection Results: Percentage of O&As That Included Various Factors*

Factors Included in O&As	Yes	Some what	No
Before Trip			
Is the community organization set up for youth education?	100	0	0
Were students prepped with the knowledge to be successful?	67	33	0
Were students excited about the O&A?	61	33	6
Do students have a "need to know" motivation to participate on the O&A?	56	22	28
Are students able to express learning objectives for O&A?	22	50	28
Behavior During Trip			
Are students respectful to space and community members?	72	28	0
Do students appear engaged?	67	33	0
Do students ask relevant questions?	50	17	33
Were students offered the following opportunities?			
...to practice problem-solving or critical thinking?	61	28	11
...to interact with community experts?	61	6	33
...for free choice or exploration?	56	33	11
...to practice teamwork or build classroom community?	44	44	11
...to practice in-process reflection?	44	28	28
...to participate in service-learning?	39	17	44
...to practice leadership?	33	28	39
...to engage with community members in a meaningful way?	33	22	44
After Trip			
Did students have opportunities to advance or apply classroom learning?	72	17	11
Did reflection as a class take place after trip?	56	11	28

Figures

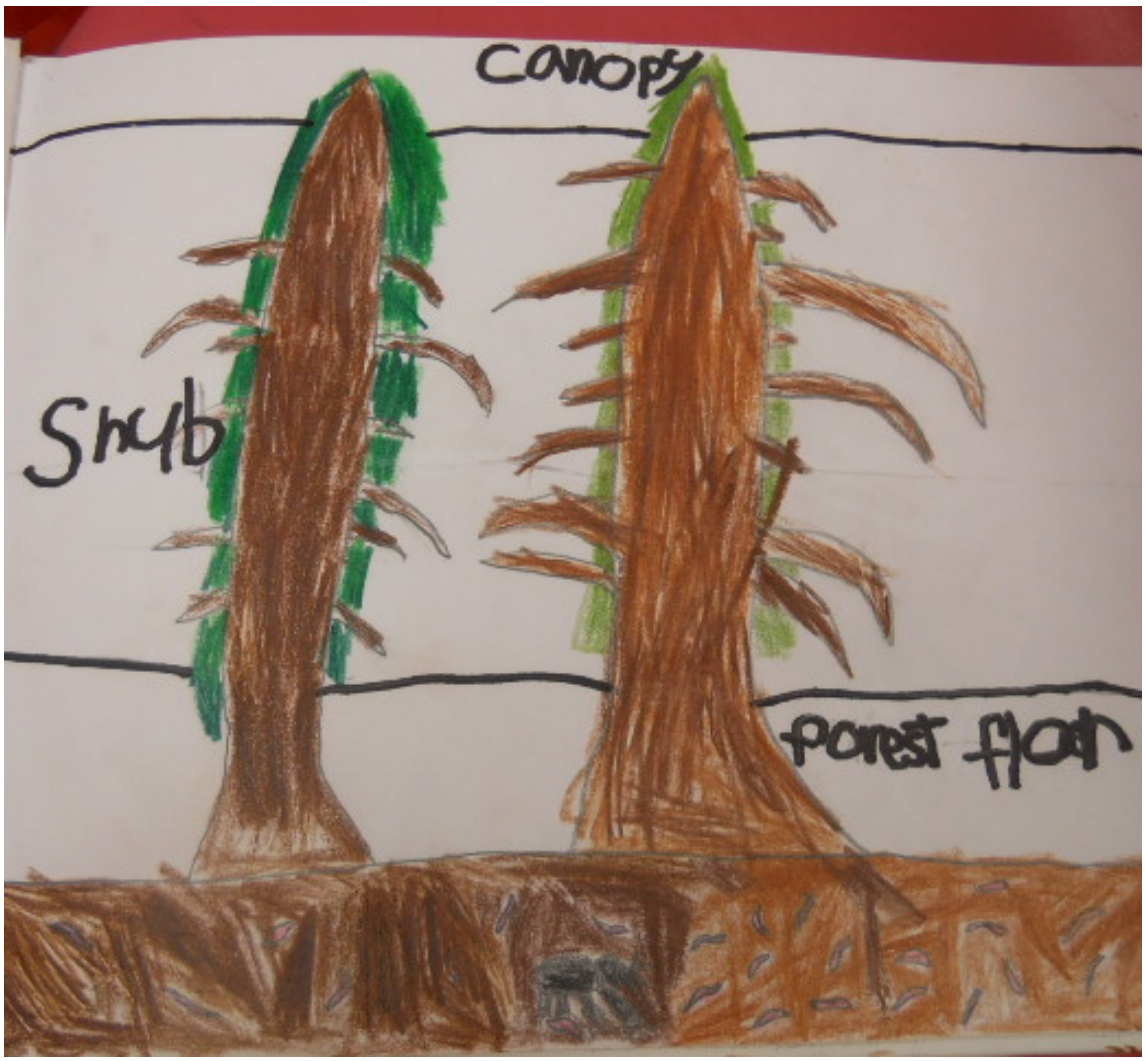

Figure 1. Level One journal demonstrates strong ecological knowledge. This drawing shows the three layers of the forest, explaining an important concept we learned that week at the Tillamook Forest Center.

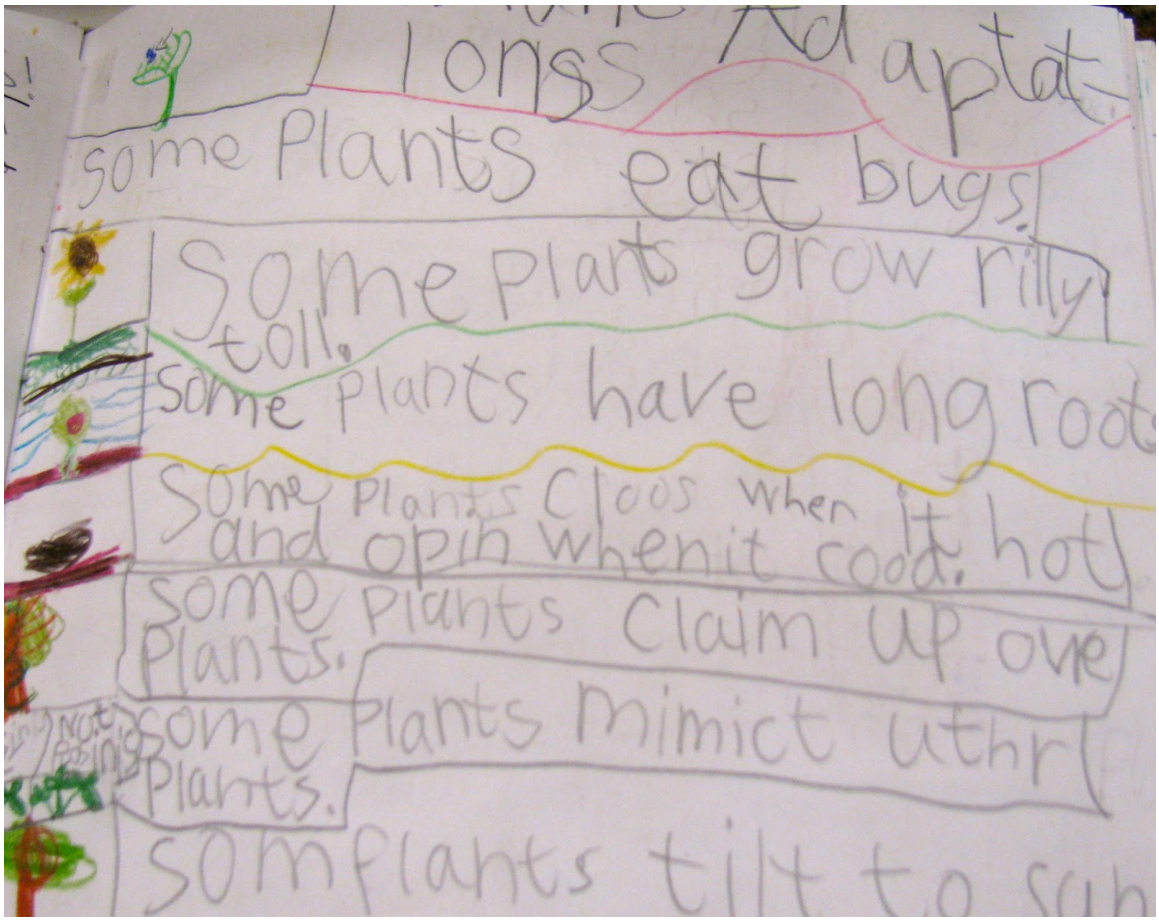

Figure 2. Level One journal demonstrates complex ecological understanding. On this page, a second grader demonstrates complex ecological knowledge in applying the concept of adaptation to diverse plants. She then invents an original creature that would be uniquely adapted to the school garden.

Figure 3. Level One journal demonstrates of sense of place. This picture was drawn after a winter walk on which the class observed bare deciduous trees. The 6-year-old student wrote, "It was winter. I saw some good nests. It was fun."

Figure 4. Biomimicry inventions address environmental issues. This 5th grade student's invention, "The Disintegrator" employs knowledge about a worm's digestion system to transform old plastic bottles into new products.

Figure 5. Level Four students exemplify communication skills. An 8th grade student fields question from parents and peers about his Capstone project.

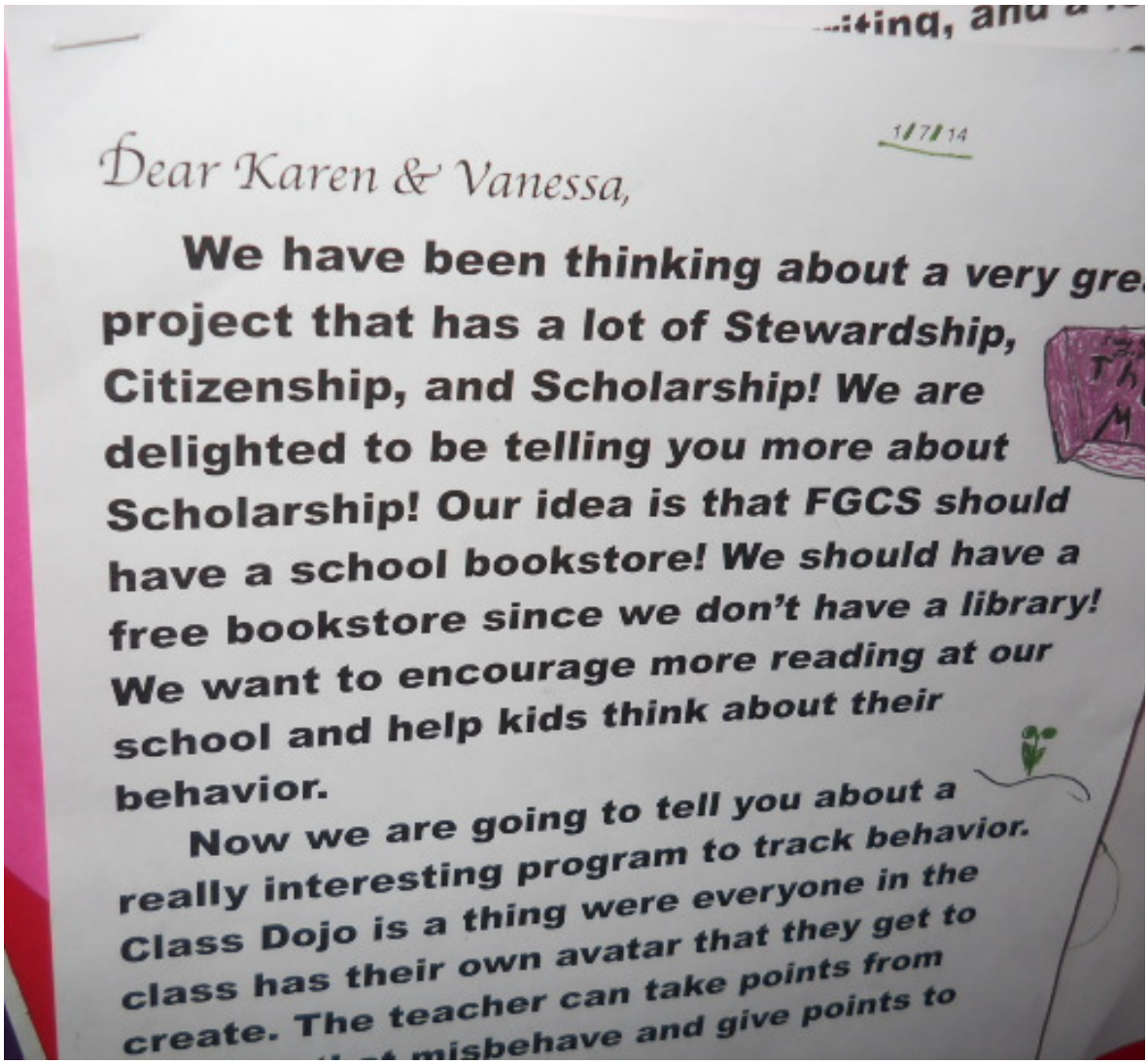

Figure 6. Level Two students demonstrate written communication skills. This persuasive letter advocates for students' permission to start a free bookstore at the school.

Figure 7. Level Three students demonstrate skills in community outreach. These students welcome guests to a fundraiser dinner hosted at a local homestead and education center.

Figure 10. Level One students demonstrate collaboration. This team of three second-graders helps one another saw wood to make shelves for their "bug hotel."

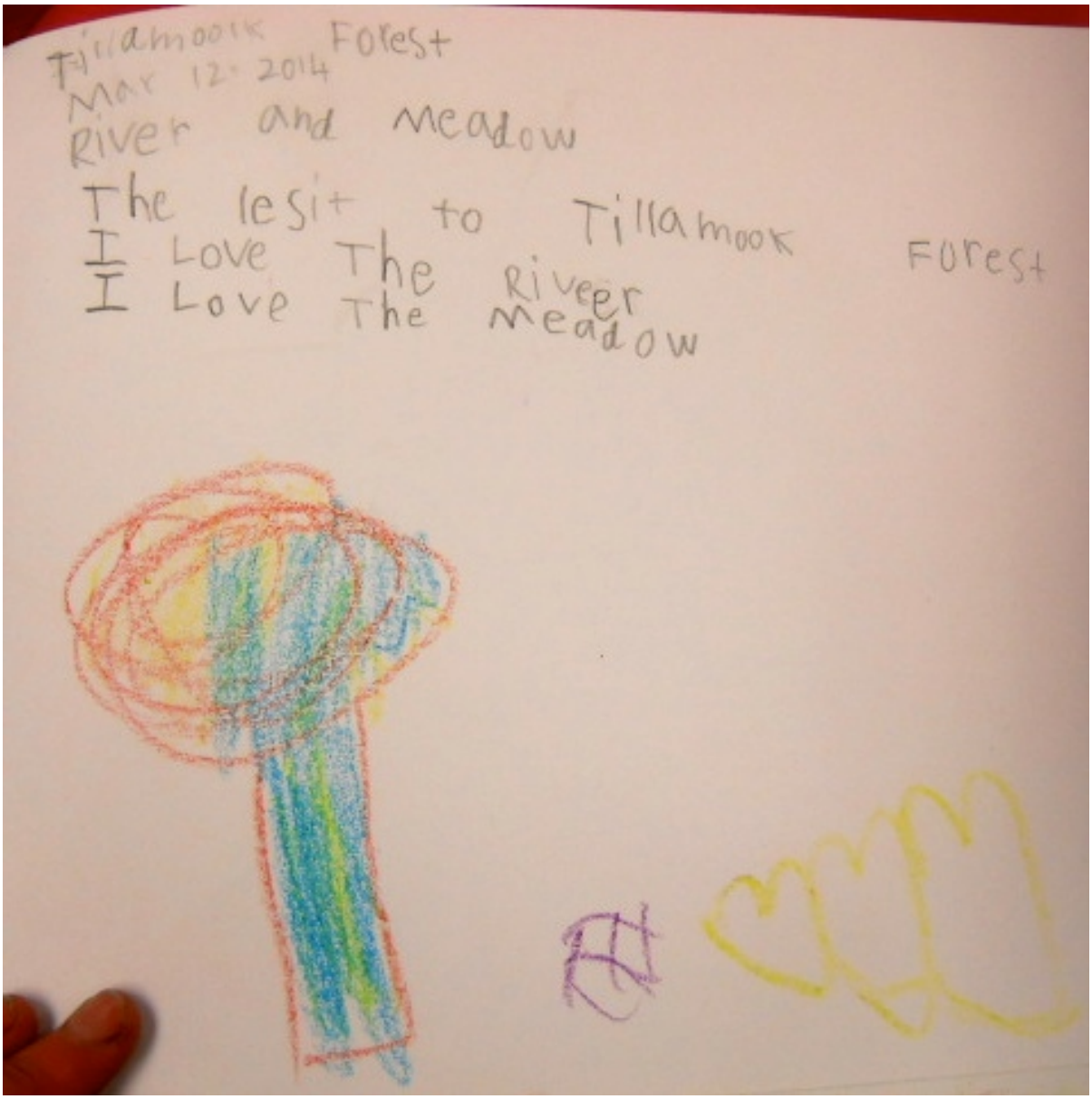

Figure 9. Level One journal demonstrates student voice. This student, a first grade learner of English as a second language, writes an original poem after a visit to the Tillamook Forest.

Figure 10. Level One journal demonstrates connection with place. This first grader draws a forest tree full of wildlife, and a portrait of himself, looking up and smiling.

Figure 11. Level One journal demonstrates value for adult mentorship. A first grader draws a memorable trip to learn about spiders at a local education center where she and her classmates met an educator and her pet tarantula.

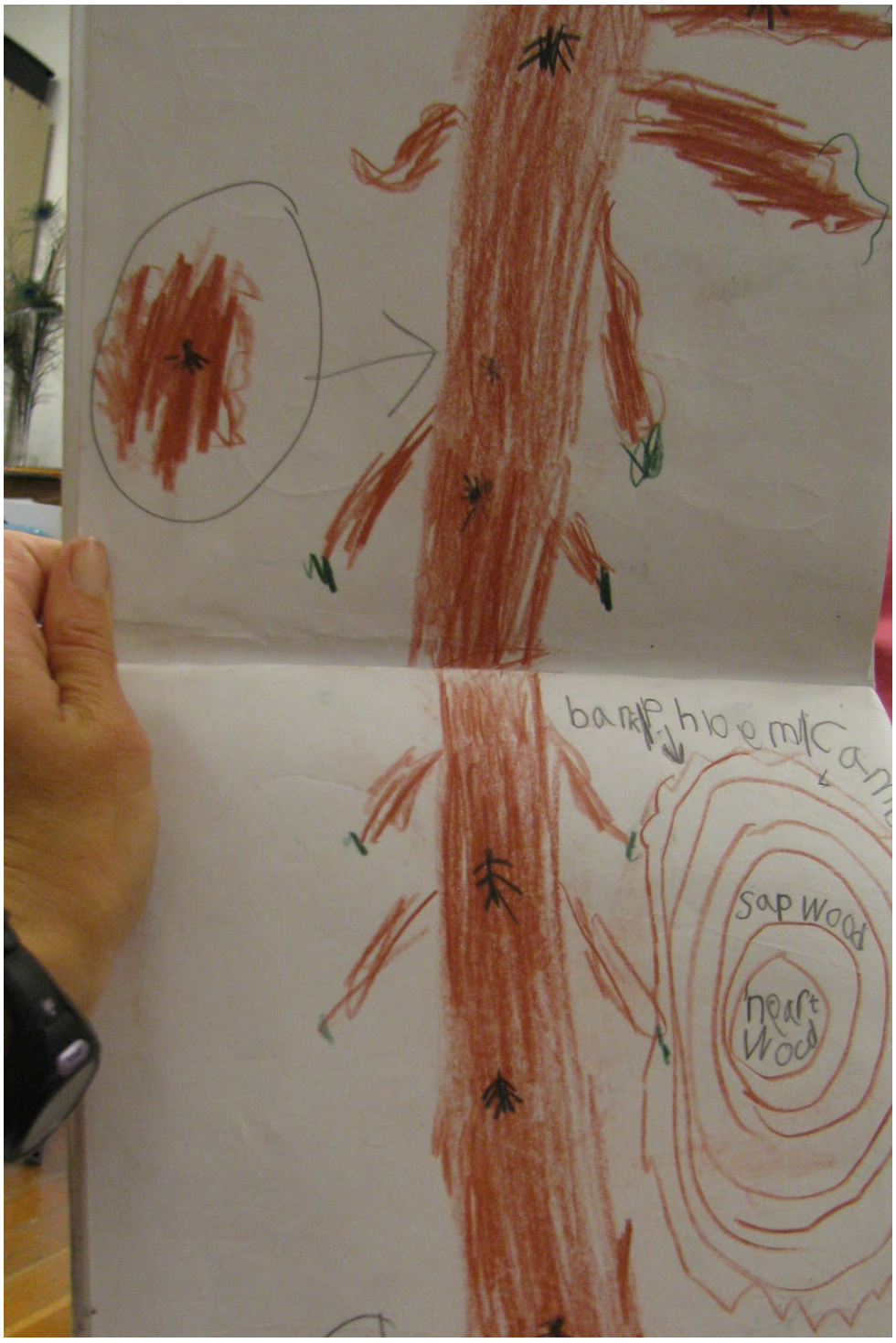

Figure 12. Level One journal demonstrates pride. This second grade student asks me to take a picture of his Douglas Fir drawing. He was proud that he thought to turn the journal sideways so that he could show how tall the trees in the Tillamook Forest are.

Figure 13. Level One journal demonstrates sense of accomplishment. This student stands in front of the newly planted bed of insect-attracting flowers that he designed and planted with his group. He just practiced the tour he will lead his family next week at the Celebrations of Learning, and is excited to show off his hard work.

Figure 14. Level 1 O&A Journal demonstrates friendship and community. This first grader draws a memorable moment, when she and her classmates held hands and wrapped around a giant cedar tree to measure its perimeter.

Appendix A. Consent Forms

A1. Parent/Guardian Consent

Dear FGCS Parents and Families-

A central part of the mission of Forest Grove Community School is to foster stewardship and citizenship among students through place-based education in our community. This spring, Erin Morgan will be conducting an evaluation of FGCS's place-based education program as a part of her Master's thesis. With your permission, your child will be invited to participate in this study.

Who will be leading the study?

I (Erin) will conduct the research. Currently, I coordinate Out&Abouts with Levels 1 and 3, provide literacy support in classes, and teach afterschool Spanish. I am also working to earn a Master of Arts degree in Education through Prescott College, Arizona. For my graduate program, I hope to improve my understanding of how students learn, especially through experiential means that connect them to their communities and environments.

What is the study for?

The purpose of my study is to evaluate how well FGCS is preparing students to be citizens and stewards of their communities. I hope to better understand what teaching techniques are most effective in building the knowledge, skills and values to meet this goal. The research is intended to help develop strategies for creating deeply meaningful learning experiences at FGCS.

If I provide permission, how will my child be involved?

Your child will participate in regular classroom activities, including Out & Abouts and project-based work. He or she may be asked to reflect about these experiences through class discussions, surveys, or written journal entries. With your permission and your child's consent, I will record of your child's responses during these activities as a part of my data collection.

Students will further work on presentations or other final projects to demonstrate their learning. Again, with permission, this work may be photographed or video-recorded for the purpose of data analysis and to maintain a record of student work. This information will only be shared within the school community and within my graduate cohort at Prescott. Student names will be removed from all data collected, and will not be used in any presentation.

What if I decide not to consent?

Children who choose to not participate in the study will still be able to participate in all lessons with classmates. However, I will not use any of their responses on surveys or observations towards my research. You may also withdraw your consent at any time during the year if you decide it is not in your child's best interest to participate.

What are the benefits of having my child participate?

I hope that his project will engage your child more deeply in their learning, and support educators at FGCS in developing meaningful projects. Your child may also be excited to share with you some of the work he or she is doing during class projects. By consenting to your child's participation, you are additionally helping me learn more about how students learn and connect to their environment and community.

How can I find more information?

If you have any questions, please contact me by email at e.morgan@fcgschool.org or at the school phone (503) 359 4600. You may also speak with Vanessa Gray or my research supervisor, Noel Cox Caniglia (877) 350 2100 #3201 should you have any concerns or questions.

Additionally, I invite all families to come to a meeting at 5:30, Thursday, January 16th, in the art room. This will be an opportunity to ask questions and discuss concerns with me in person. Thank you for taking the time to consider your child's participation in this research projects. **Please read the below consent form, and return to the office before Friday, January 17th.** I appreciate your cooperation, and look forward to speaking with your more about this project!

Sincerely,

Erin Morgan

_ _

Parental Consent Form

Please check all corresponding boxes below. Turn this in to the office before Friday, January 17th. Request an additional singed copy of this form by checking here: ____.

_____I have read the above information, and am comfortable with my child participating in the evaluation of FGCS's place-based program. I understand that my child's behavior and comments may be recorded during Out & About activities or reflections, and their work saved or photographed. I understand that I may withdraw consent at any time during the year.

____ I am comfortable with my child being photographed for the purpose of data collection and presentation among FGCS staff and Erin's graduate cohort.

____ I am comfortable with my child being video recorded for the purpose of data collection and presentation among FGCS staff and Erin's graduate cohort.

____I prefer that my child did not participate in this study.

_____ _____

Child Name Date

_____ _____

Parent Name Parent Signature

A2. Teacher Consent

Dear Teachers and Colleagues-

As you know, this spring I will be conducting a research project at FGCS for my thesis through Prescott College. I would like to invite you to join me in portions of this research, though your participation is completely voluntary. Please read the following information, and sign below to provide your consent to participate. If you have any doubts or questions, please talk to me before signing.

Deep thanks,
Erin

What is the purpose of the research?
A central part of the mission of Forest Grove Community School is to foster stewardship and citizenship among students through place-based education in our community. The purpose of my research will be to evaluate the degree to which our place-based education program is succeeding providing students the skills, knowledge and values to be active citizens and stewards. Along the way, I hope to discover ways to develop or strengthen aspects of the place-based program at FGCS. The proposed research will take place from January – June, 2014.

What will the research include?
In January, I hope to start the project. I will be sending a consent form home with all students describing my study, and hope to get these back by the end of the month. You can help me by directing confused parents my way, and assuring them that the research will not require students to participate in any activities they wouldn't normally.

With the classrooms I work with regularly, I would like to present the project and gain student assent as well. I'll explain to them that I would like their help to make O&As more fabulous, and that I might take notes when I'm on trips of things that I notice, take pictures of them participating in interesting activities, or ask to make a copy of great work that they do. I'll be coming along on O&As as usual, but will be more deliberate and organized in my observations and reflections.

I also hope to borrow level four students to complete a 20-minute survey about their knowledge, values and perceived self-efficacy as stewards and citizens. I chose Level 4 students because I believe that they will provide us the richest information due to literacy skills and allow us to compare the knowledge and values that our long-timer students possess with newer students.

I also have written a survey for parents that will be administered online, completely optional and anonymous. This will provide a chance to collect those stories of how students have been impacted by our O&A adventures and projects in ways that we

don't get to see. These surveys won't ask parents to evaluate any specific teachers or projects, but I will ask before sharing any data that might be linkable with you or your teaching.

I also hope to gain some observations regarding O&As through eyeballs besides my own. I have made a brief check-list form that I will invite each of you to fill out on a few O&As this spring, with the idea that this would give us a more complete picture of what kinds of place-based activities are having the most impact on students. Again, this is completely voluntary – you can choose not to participate in this part of the research.

Finally, the work that we do at PLCs will become a part of my research. I will be reflecting on our discussions and taking notes to help inform and restructure my research. These will be a chance to put our heads together to improve the program, and I'll be collecting your best ideas and incorporating them into the research. If you prefer not to have your comments and feedback recorded for that purpose at any time, you can let Vanessa or me know. My priority is for the PLCs to be a forum where we can be open and explore how we feel about our work, so please don't feel my research limits your ability to speak honestly.

What will you do with the data?
I plan to gather all these observation, student work samples, photos and reflections, and use a coding process to synthesize them into broader themes. In PLCs, we'll probably look at some of these big ideas in order to make more sense of them. I hope that this process will help reveal some of the strengths of the program, and possibly some weaknesses or holes that we could address. Finally, this will be a chance to collect and celebrate all the ways that our program has been successful in fostering motivated, knowledgeable citizens and stewards.

My final research report will be shared with staff at the school, as well as in a one-time presentation at Prescott College. No names or identifying information will be included in this report.

What if I choose not to consent to participate?
If you would rather not play any role in this research, you are welcome to decline participation. This means that I will not conduct any observations in your classroom, ask you to participate in field observations, or use any of your comments during PLC discussions in my research. You are welcome to speak with Vanessa or my research supervisor, Noel Caniglia (877) 350 2100 #3201 should you have any concerns or questions.

I understand the information above and am comfortable with the research proposed.

_____	_____	_____
Name	Signature	Date

A.3 Minor Assent

Level 1: Read to students

I understand that Erin will be joining us on Out & Abouts and other activities this spring. I understand that Erin is also a student, and that she wants to learn how to make Out & Abouts even better. To help her learn, she will take notes about the things we learn during trips and write down some of my ideas. She might take pictures of my work or ask me to tell her about what I learned. There won't be any right or wrong answer, though, and I won't be graded on my work. If I don't like the project, I can talk to Erin, my teacher, or my parents. I only have to participate if I want to.

I understand the project and feel okay about it:

Name _____ Date_____

Level 3/4:

I understand that Erin will be joining us on Out & Abouts and other activities this spring. I understand that Erin is a graduate student, and that for her College, she wants our help to find out whether Out & Abouts are helping us be good citizens and stewards. To help her learn, she will take notes about the things we learn during trips and record some of my ideas. She might take pictures of my work or ask me to share about what I learned. I will also complete a survey about what I know about our community and how I feel about it. There won't be any right or wrong answers, though, and I won't be graded on my work. If I don't like the project, I can talk to Erin, my teacher, Vanessa and Karen, or my parents. I only have to participate if I want to.

I understand the project and would like to participate:

Name _____ Date_____

A4. Site Authorization

October 1st, 2013

Dear Erin Morgan,

I have discussed with you your proposal to conduct the study "Out and About in Our Community: Action Research in Place-based Schooling" and welcome you to complete your research project at Forest Grove Community School. Your request to use FGCS as a research site is granted.

I understand that your research will include an evaluation process that will take place from January – June, 2014. You will seek parental consent in order for students to participate through a consent form and will host an informational meeting to field additional questions from parents. You will also gain consent from teachers and parent interviewees for their participation. I am also willing to speak with parents that have concerns regarding the research.

I understand that this research may include surveys of students and parents, observations during class activities, class discussions, analysis of student work samples, and discussion with teachers during professional development gatherings. I will additionally grant access to school records, such as demographic data and yearly Climate Survey results. I also understand that photos or videos may be taken and will be used exclusively for educational presentations at FGCS or at Prescott College. All participants' names will be kept confidential in stored data, presentations, and the final published thesis.

The teachers and I hope that you will share your findings with the school community upon completion of the research and will support you in these projects as possible.

Sincerely,

Vanessa Gray
Principal
Forest Grove Community School
1914 Pacific Ave, Forest Grove, OR
(503) 359 4600

Appendix B. Data Collection Tools

B1. Student Survey

Hi! Please answer the following the best you can, and be honest!
Do not write your name - this is anonymous

Circle your answer:
I have been at FGCS since grade: 1 2 3 4 5 6 7 8
I am now in: 7th grade 8th grade

Which of these would you use to describe yourself? (check all that apply)

☐ a leader	☐ a citizen	☐ likes science
☐ an environmentalist	☐ thoughtful	☐ likes to be outdoors
☐ a political activist	☐ observant	☐ likes technology
☐ a great friend	☐ an artist	☐ other

_____

Which of these have you done? (check all that apply)
☐ set my own stewardship or citizenship goals and worked to accomplish them
☐ given a presentation to adults (besides a teacher)
☐ raised money or made donations to help a cause
☐ been allowed by teachers to study a topic you're passionate about
☐ been challenged by teachers to find a solution for a real problem
☐ worked on your own, outside of school, to change something in the community or the larger world
☐ is there something else you've done that is important to you? _____
_____

What is one of your favorite Out & Abouts of all time? Why?
_____

_____

How is this school different from other schools? _____

_____

Okay, time to be honest – circle your answer

1) I think that natural resources, like water and wildlife, need to be protected
Yes, very much A little Not very much Not sure
Tell me more (optional): _____

2) I put recyclables (like paper or plastic bottles) in the recycling:
Always Usually Sometimes Huh, what's recycling?
Tell me more (optional): _____

3) I think about the environment when I go shopping:
Always Sometimes Hardly ever No way, I need my stuff! I don't get to buy things in my family
Tell me more (optional): _____

4) I care about whether people in my community are being treated fairly
Yes, very much A little I don't think about it very much
Tell me more (optional): _____

5) I think that I have made a positive change in this community:
Definitely A little Not at all I haven't, but I could
Tell me more (optional): _____

6) I think most adults in our community want to hear what kids think about politics or the environment
Yes Sometimes Not really Maybe/Not Sure
Tell me more (optional): _____

7) I feel comfortable interacting with people different from me:
Yes Sometimes Not really Maybe/Not Sure
Tell me more (optional): _____

IMAGINE…read these imaginary scenarios then choose a response and fill in the blank if needed. The more specific you can be, the better.

Example: Zombies are taking over Earth, what would you do?

A. I would build myself a tree house and learn how to hunt with a bow

B. I don't know man…

On an O&A, we discover that a chemical from a local factory is polluting our watershed and hurting the migrating birds and local wildlife. What would you do to solve this?

A. I would _____

B. I don't know, man!

C. I probably wouldn't do anything.

A law is proposed in Forest Grove that youth under 14 should not be allowed to use the city parks without adult supervision. If you disagreed with this law, what would you do to change it?

A. I would _____

B. I don't know how to change laws, man!

C. I probably wouldn't do anything.

You find out that an earthquake destroyed a small city in South America, and a lot of the people there have no warm clothes, food, or homes. What would you do to help them?

A. I would _____

B. I wouldn't know how to help!

C. I probably wouldn't do anything.

Vanessa receives $1,000 from the district to improve education at Forest Grove Community School, and asks students for advice on how to use it. What would you tell her to do with the money?

A. I would _____

B. I don't know, that's why she's the principal!

C. I probably wouldn't care.

Last part, pop quiz! (Don't worry, you won't be graded)

Can you name three plant or animal species that are native to Oregon?
A. No problem! Three are-_____
B. Here's a guess: _____
C. I don't think so.

Can you name one invasive plant or animal?
A. No problem! Here's one - _____
B. Here's a guess- _____
C. I don't think so.

Can you name 3 rivers or bodies of water in our watershed?
A. No problem! Here you go-_____
B. Here's a guess- _____
C. I don't think so

Can you name two places you could go to learn about what's going on in our community?
A. No problem! Here you go-_____
B. Here's a guess- _____
C. I don't think so

Can you name two local organizations working to help people in our community?
A. No problem! Here you go- _____
B. Here's a guess- _____
C. I don't think so

Can you name an environmental or social problem that you care about?
A. Yes - _____
B. No
If yes, what could you do to help that problem? _____
_____

Thanks, you're awesome! Turn this in to the folder on the desk, and talk to Erin if you want to know more about why I'm doing this.

B2. Parent/Guardian Questionnaire

Parent/Guardian Questionnaire – Place-Based Education at FGCS
Dear FGCS Parents/Guardians: Please take 5-10 minutes to share with us about you and your child's experience at FGCS through this short anonymous survey. This questionnaire was designed by Erin Morgan, FGCS instructional assistant and Spanish teacher, as a part of her graduate research in place-based education. She is exploring the degree to which FGCS helps prepare students with the knowledge, skills and confidence to be active citizens and stewards. Your input will provide us a "behind the scenes" view of what teachings students take home at the end of the day.

*** Consent**
Your participation is completely voluntary, and will help us develop a better program. By choosing to complete this survey, you are consenting to have your anonymous responses included in data analysis and reporting for Erin's evaluation project. Any responses that may be linked with you, your child or your child's teacher will be kept confidential.
____Yes, I understand.

What went into your selection of FGCS as a school? (Check all that apply.)
___Interest in the school's mission and program
___Looking for an alternate to traditional public schools
___Looking for smaller class sizes
___Suggested by a friend or community member
___Seeking more personalized learning for my child
___Seeking more experiential learning for my child
___Other: _____

Are you familiar with the basic ideas or philosophy of place-based education?
___Yes
___Somewhat familiar
___Not familiar

Based on your experience, what do you like best about the school? (Check top three.)
___Experiential learning opportunities
___Out and Abouts
___Environmental focus
___Literacy and/or math curriculum
___Integrated projects
___Staff and teachers
___Small school community
___Individualized learning
___I am not satisfied with my child's experience at FGCS
___Other _____

In what ways have you noticed changes in your child(ren) during their attendance at FGCS? (From the list below, check all that you agree with.)

I have noticed that my child…
__ is more confident exploring in the community or environment
__ is more confident interacting with adults
__ is more confident in his/her ability to set personal goals and follow through with them
__ likes to play outside more
__ is more curios or interested in learning
__ is passionate about the topics explored in class; is eager to share learning at home
__ makes choices based on health of environmental (i.e., food consumption, recycling, etc.)
__ encourages you to make choices based on health of the environment
__ is more interested in attending or participating in community events
__ is more empathetic or compassionate about others' wellbeing
__ is more willing to take risks
__ demonstrates greater perseverance or determination
__ I have noticed no significant changes in my child during his/her attendance at FGCS
__ Other: _____

Please take a moment to share a story about a project or activity at FGCS that has had a positive impact on your child(ren):

Is there anything else you would like to share about your experience with FGCS? Remember, all comments are anonymous.

Thank you for taking the time to contribute to this project.
If you would be interested in participating in discussion about place-based education at FGCS, please share your contact information. This will not be linked to your survey responses:

Name: _____

Email: _____

B3. Out and About Reflection Form

OUT & ABOUT REFLECTION SHEET

O&A/Activity: Class(es): Date:
Objectives:

BEFORE TRIP - CHECKLIST	**No**	**Somewhat**	**Yes**	**Describe/ Notes**
Are students excited about the O&A?				
Are students prepped w/ knowledge & skills to be successful?				
Do students have a "need to know" motivation to participate in O&A?				
Are students able to express learning objectives for O&A?				
Is the community organization set up for youth education?				
What can you do before the trip to better prepare students? What can you do before the trip to better prepare the organization or activity?				

DURING TRIP- CHECKLIST	**No**	**Somewhat**	**Yes**	**Describe/ Notes**
Do students appear engaged?				
Do students ask relevant questions?				
Are students respectful to space and community members?				
AFTER TRIP - CHECKLIST	**No**	**Somewhat**	**Yes**	**Describe/ Notes**
Did students have opportunities … to advance or apply classroom learning?				
...to participate in service learning?				
…to practice leadership skills?				
...to interact with community experts?				
…to engage with community members in a meaningful way?				
…to practice teamwork or build classroom community?				
…to practice problem-solving or critical thinking?				
…to be reflective? Practice in-process reflection?				
…for free choice or exploration?				
Did you reflect upon the trip as a class?				How?
Any other thoughts?				

B4. PLC Exit Ticket and Final Reflection

PLC Exit Ticket – 4/4/14

I like….

I wish….

A question that I have leaving today is….

Final Reflection – PLCs
Name (Optional) _____

Overall, what have you most valued from these meetings?

What specific activities or discussions were most helpful for you?

What specific discussions were less useful? What might you have changed about the structure or content of the meetings?

If a PLC were to continue on an optional basis next year, how likely would you be to participate?

A. Not likely – this kind of meeting isn't my priority right now
B. Not likely – I would want to come, but wouldn't have the time
C. Somewhat likely – I would probably attend some of the time
D. Very likely – I would come whenever my schedule allowed it
E. Other – explain _____

If a PLC were to continue on an optional basis next year, what themes would you like to discuss? What would you want to accomplish?

What are the biggest challenges you still face with O&As or with designing and conducting place-based projects with students?

What could the school do to better support this piece of your work next year?

In your opinion, what is one way FGCS could better support students in becoming citizens and stewards?

Finally, circle a response for each of the following, and explain if you can!

These meetings met my expectations for a Professional Learning Community.	No Somewhat Very much so N/A	*Explain:*
My understanding of PBE has increased because of these meeting	Not much Somewhat Very much	*Explain:*
These meetings have increased my connection or sense of community with other teachers	Not much Somewhat Very much	*Explain:*
I intend to seek more authentic projects in the next 1-2 years.	Unlikely Possibly Definitely	*Explain:*
I intend to seek more student-driven projects in the next 1-2 years	Unlikely Possibly Definitely	*Explain:*
I intend to seek deeper place-based connections in curriculum in the next 1-2 years	Unlikely Possibly Definitely	*Explain:*
I intend to try different O&A reflection practices in the next 1-2 years	Unlikely Possibly Definitely	*Explain:*
I intend to implement new ideas we discussed in some other way next year	N/A Possibly Definitely	*Explain:*

Thanks!

Appendix C. Products Created through Research

C1. Rubric: Great Projects at FGCS

	Level 1/2	Level 3	Level 4	Admin	*
RELEVANCE Meaningful to students & the world.	I learn stuff that is fun and interesting.	I care about this. I know why we are doing this.	My work can be seen in the community.	Embraces or enhances unique school tradition.	D A E
ENGAGEMENT	I get to do something exciting.	I get to do, build or act. There is a "Wow" factor.	The project is interactive.	Students are interested and happy.	D A E
ACADEMIC LEARNING Fulfills standards, Integrates subjects.	I become a better reader, writer, scientist and mathematician.	I am growing as a scholar. It helps me reach my "get better" goals.	I have a greater depth of understanding.	Uses academic skills.	D A E
21st CENTURY SKILLS -tech - collaboration - communication	I get to work with my friends. I get to use a computer	I get to work together with friends.	I get to work with peers and community partners.	Prepares students to be successful in HS and beyond.	D A E
STUDENT CHOICE & VOICE	I get to choose a project or solve a problem my own way.	I have multiple options to choose from. I am heard.	I have choice but not too much.	Kids have a voice.	D A E
PRODUCT & AUDIENCE	I get to share it with my family.	I get to present to an audience where I feel safe.	I get to "show off." I am successful.	Product showcases academic skills.	D A E
PLACE-BASED EDUCATION	I learn outside and visit new places.	I explore new places and make a difference.	I meet experts and make a difference.	Uses local resources and opportunities.	D A E

*** Rubric evaluation: E = exemplary, above expectations for grade level**
A = Accomplished, meeting expectations for grade level
D = Developing, not fully meeting expectations for grade level

C2. Action Plan Draft: Moving Forward with PBE at FGCS

Part One: Areas of School Focus

Focus Area	Primary Objective	Action Step	Indicators of Success
Social Justice & Service Learning	Increase cultural knowledge and agency through service-learning and social justice action projects.	- Selected as priority focus of 2015 PLCs	*To be determined in collaboration with teachers.*
Project Work and Academics: Integration	Integrate project work more deeply with academics in order to strengthen skills and engagement.	- Selected as priority focus of 2015 PLCs	*To be determined in collaboration with teachers.*
Teacher Sense of Place Education	Build teacher knowledge around local environmental and social issues.	-Throughout PLC work	*To be determined in collaboration with teachers.*
Define role of PBE in program	Clarify the role that PBE has in the program in relation to other emphases and testing philosophy.	- Address during vision meetings with Guadalupe	Sense of clarify and focus by teachers.
O&As – Non-Academic Learning	Incorporate and value social learning, natural exploration, repeat trips	- Address during O&A Reflection and level meetings	*To be determined in collaboration with teachers.*
Consistent & Engaging Reflection Routines	Establish a system in classroom to reflect upon O&As and project work to strengthen learning outcomes and internal locus of control.	- Work on with Pacific Education student research with Level 3	*To be determined in collaboration with teachers.*
Grade-Level Structure	Examine strategies to balance mixed-grade benefits with PBE challenges.	- Meet and discuss with Vanessa	*To be determined in collaboration with teachers.*

Part Two: Areas of Personal Focus

Focus Area	Primary Objective	Action Steps	Indicators of Success
Building Partnerships	Work towards building partnerships, pre and post work, tracking and reflection	- Arrange meetings with two partners over year.	When surveyed after project, partners ask to work with us again.
Pre & post work	Develop curriculum and structures to deliver effective preparation and reflections around O&As.	- Collaborate with Levels 2 and 3 to develop pre/post-reflection methods.	(a) students know O&A objectives and (b) reflection happens on higher % of trips this year.
Tracking and O&A Reflection	Maintain thorough and consistent tracking around O&As for reference and analysis.	- Complete O&A Reflection for all trips in 2014-15 - Analyze results	Observe growth in three areas through analysis.
Continue PBL PLCs	Conduct 4 yearly PLCs around place-based education/ project-based work.	- Plan meetings for November, February, April, May	Positive feedback on exit tickets.
Scope and Sequence of S&C Skills.	Build guidelines for skills to teach at each grade level in order to better scaffold critical skills.	- Develop list of critical skills in each area by level - Present to teachers	Draft developed by 2015-16 school year.
On-going Evaluation	Continue to evaluate impact of place-based education on student learning, stewardship and citizenship. Create model for this to continue sustainably.	- O&A Reports for all trips - Conduct Level 4 survey in 2016 - Track project rubrics - Stories of great projects	*To be determined in collaboration with teachers.*
Ongoing Action Research: Student Voice & Student-Directed Projects	Research and test strategies of incorporating greater student voice in projects to encourage development of agency.	- Develop research plan for 2015-16 school year.	*To be determined.*