

PLACE-BASED EDUCATION IN A RURAL APPALACHIAN ELEMENTARY
SCHOOL: A PROGRAM EVALUATION

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Dedication

I dedicate this dissertation to my family. Taking on a doctoral program while rearing three children under the age of two is, perhaps, not an exercise in good judgment. But good judgment and good fortune shined on me when I married Karen. A remarkable mother and a successful career woman, she often rearranged her priorities so that I could tend to my studies. Moreover, Karen's sacrifices and understanding allowed me to pursue fiction writing while immersed in the doctoral program. Karen—I owe you, and I love you. You let me dream. I know that Karen joins me in thanking her parents—Uschi Nottnagel and Paula Hallberg & Reinhard Radermacher, and sister, Astrid Scheerer—for countless hours of child care and related support which provided a modicum of equilibrium in our lives over the last few years.

I suspect that my DNA drove me to education. My parents are retired public school educators and my educator lineage goes back four generations. I appreciate that my parents—Sharon and David Sugg along with my brother, Deron—set an example that educational pursuits should aim for knowledge acquisition and social justice. I was never taught that economic ends should steer the educational journey, and for that I am grateful.

Emmett, Anja, and Ty (my children), I hope and trust that my doctoral work didn't take me away from too many milestones or small moments precious in their simplicity. If I play a role in making your educational journey authentic and outdoor-rooted as what the children at Crellin Elementary enjoy, I'll be quite pleased. As I write, I smile when thinking of each of you.

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My dissertation committee, chaired by Dr. Leslie Grant, provided valuable guidance and modeled excellent teaching throughout the doctoral journey. Dr. Grant's program evaluation course was instrumental in focusing my research, and her ongoing counsel led to a clearer dissertation that retained my rural sociologist-tinged voice. Drs. James Stronge and Michael DiPaola (the other members of the committee) prove that first-rate teaching and preeminent research can, indeed, occur in tandem. My committee members are outstanding teachers—the highest compliment I know.

Though now with advanced training in the education field, I am also a rural sociologist. Dr. Rex Campbell, a rural sociologist and emeritus professor (but still teaching!) at the University of Missouri, has influenced my career and academic journey in countless ways; I think of him and his lessons often. Once, one of my undergraduate students told me that he wanted to teach at the college level and he asked how I learned to make sociology “not boring”. I sent him Rex's “My Philosophy of Undergraduate

Teaching”, which is rooted in the progressive notion a student taking an active role in his or her education learns more than a passive learner. Rex never lectured, and he understood that classroom walls are too often an impediment to authentic learning. Rex modeled a “guide on the side” role for professors in lieu of a “sage on the stage”. I contend Rex was a sage on the side. And I am one of generations of Missouri Tigers indebted to Dr. Campbell, who holds teaching in the highest esteem. Thank you, Rex.

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Abstract

The purpose of this case study program evaluation study was to gain a deep understanding of the place-based education strategy at an award-winning Appalachian elementary school serving primarily low-income students. The school has earned recognition for state-leading test scores, character and environmental education, and for its ability to generate external support. In addition to investigating key elements in implementing and maintaining the place-based education strategy, the study identified the strategy's key instructional aspects while noting participants' perceptions and/or working definitions of place-based education. Further, this study combined with the accompanying literature review in seeking to contribute to the nascent place-based education nomenclature base. Participants included the school's principal and staff (teachers, special service area personnel, etc.) and five community partners who take on substantial instructional and related roles supporting place-based education at the school. Semi-structured interviews were the primary data source; observation of instruction, both indoor and outdoor, and a review of documents and related materials provided additional data. The findings underscored the holistic and intertwined nature of the place-based strategy while offering that the school's focus on student, faculty, and community affective needs coupled with the principal's strong leadership and relationships with the broader community drive the strategy. Instructional-related findings emphasize the school's interdisciplinary approach, integration of the arts, use of community partners in instructional roles, and importance of hands-on and largely outdoor-based instruction. Other findings included the school's eschewing of test-preparation, its consideration of state standards as a baseline, and a reliance on informal assessment. Recommendations

included tracking of alumni to gauge their future academic achievement and their levels of environmental engagement and civic engagement as measures of the place-based strategy's long-term impact. Recommendations for the broader place-based education field included exploration of the funding environment for place-based education research and practice. Another suggestion offered evidence from the literature review and Crellin's experience that place-based education is not exclusive to rural schools and communities.

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CHAPTER 1:

Introduction

A fledgling movement called place-based education stands out as an enigma in the post-No Child Left Behind (NCLB) era, when narrowed curriculum, an emphasis on test scores to gauge student achievement, and increasing rationalization of education practices are pervasive (Smith, 2013). Yet, to those adhering to the writings of John Dewey and like-minded champions of progressive education, place-based education is far from novel: it is what education should be in a healthy democracy. Place-based education has shown promise as an antidote to deeply-rooted social and environmental problems while boosting student achievement in even the most challenging schools (Lewicki, 2010; Smith, 2002, Smith, 2013; Theobald, 2006). But in an increasingly intertwined world, place-based education's embedding student learning in local context appears at first glance to be wholly counter to the aims of Common Core and related efforts to ensure consistency and quality in classrooms across the country.

Though definitions of place-based education are still forming and often dependent on local application, Lewicki (1997) offered four tenets helpful to grounding discussion of the strategy:

- nature teaches.
- understanding place is indispensable to understanding community.
- where and how a student learns is as vital as what a student learns.
- respect is integral to learning. (5)

As researchers and practitioners examine place-based education's role in the modern era, a handful of schools—urban and rural, domestic and international—have embraced the strategy, and initial results are adding to a growing base of evidence that

rooting education in local context boosts student achievement (Powers, 2004; Sobel, 2005; Smith, 2013). More important to place-based advocates, however, are goals relating to holistic student development, deepened connections between school and the broader community, and fostering stewardship of resources, both community and environmental (Sobel, 2013; Theobald, 1997). However, the research base for place-based education is limited and largely qualitative (Nespor, 2008; Smith, 2013) and even identifying what constitutes place-based education is still a challenge for educators (Jennings, Swidler & Koliba, 2005).

Even place-based education's most ardent supporters underscore the need for additional research and evaluation of the approach, noting the need for an evaluative framework that is both rigorous and cognizant of place-based education's nuances (M. Duffin, personal communication, February 28, 2014; P. Theobald, personal communication, February 27, 2014). Such research might examine place-based strategies while relating research on complementary instructional practices (e.g. problem-based learning, service-learning, and environmental education) to place-based education's research base when appropriate. But place-based education is inherently tied to locality, thus presenting challenges for researchers and evaluators attempting to replicate place-based findings and best practices (Smith, 2013). Innovative social and educational programs rooted in place, often with interwoven and complex variables, are not well-suited for evaluation methodologies often favored by government agencies and private philanthropy, even though such place-rooted strategies may offer the best remedies to deeply-rooted educational and social problems (Schorr & Farrow, 2011; Schorr, 2012).

Problem

Researchers seeking well-worn blueprints for peer-reviewed place-based education evaluation examples would never pass the starting point. Paul Theobald (personal communication, February 27, 2014), an early advocate for place-based education (his 1997 work coined the “Place—Conscious Classroom” phrase) with multiple books and articles cited in this evaluation, was blunt in his assessment of place-based education evaluation. “It has not been done well in the past,” he said, noting that traditional evaluation measures are an “impediment.” Theobald said the post-NCLB funding environment “dried up” philanthropic support for place-based education research and program support, which was “showing promise” prior to NCLB. Finally, Theobald emphasized that place-based education’s overt crossing of disciplinary boundaries renders evaluation (with standard metrics) difficult, especially in a political environment where education is viewed as a means to an economic end, not a broader enterprise with more communitarian goals.

Michael Duffin (personal communication, February 27, 2014), a partner at PEER Associates, a private-sector consulting firm at the forefront of place-based and environmental education evaluation (PEER Associates is closely associated with the now largely defunct Place-based Education Evaluation Collaborative), emphasized the “desperate need” for place-based education evaluation that examines either instructional practices/strategies and/or the community impact of the place-based education. Duffin said that the “fundamental question” is “how can [successful] place-based education strategies happen at other places.”

The problem addressed in this case study evaluation of place-based education at one small (K-5) Appalachian elementary school (Crellin Elementary) is a microcosm of the underlying issue facing place-based researchers and evaluators: The place-based education strategy at Crellin Elementary appears highly successful, but a systematic examination of the components that make it successful has never happened. The inputs are many (as addressed in the logic model), crossing instructional strategies, academic disciplines, teaching roles, and traditional school and community boundaries. Moreover, place-based education at Crellin happened “organically” (D. McCauley, personal communication, April 18, 2013), and after much trial and error. There was no blueprint that led to the place-based strategy at Crellin; it occurred largely out of a principal and her staff’s sustained effort to boost student achievement and engage the broader community.

Crellin, a Title I school, consistently outpaces more urban and affluent Maryland schools in test scores; in 2010 the school had the highest test scores in state according to *Baltimore Sun*’s analysis:

Of the 874 elementary schools in the state, Crellin Elementary, a schoolhouse nestled in a coal mining area that has amassed a collection of prizes for leadership, environmental teaching and character education, is the school with the highest pass rate on the Maryland School Assessment. (Bowie, 2010, para. 2)

However, Dana McCauley, Crellin’s principal, (personal communication, April 18, 2013), emphasized that goals including community engagement, students connected to

their local and broader environment, and critical thinking, are far more important to Crellin's stakeholders than state-leading test scores.

Crellin's fidelity to place-based education's tenets is unambiguous and place-based education advocates and researchers look to Crellin to play a key role in both cementing a research base for place-based education and to train practitioners in place-based education (Gliner, 2012; D. McCauley, personal communication, April 18, 2013; Sobel, 2011). Thus, a program evaluation of place-based education at Crellin Elementary has the potential to delineate crucial elements of the strategy and their implementation while building a foundation for future place-based education researchers seeking to evaluate a strategy in which community and environmental aspects appear as important as pedagogical elements.

Statement of Context

Garrett County is part of Appalachia, a cultural region generally following the Appalachian Mountain chain. For generations, Appalachian communities have faced disproportionately high levels of poverty and geographic and economic isolation. Appalachian people are known for close ties to the land, familial connections, and a general suspicion of outsiders. The region has long-held ties to coal and its culture is intertwined with the rugged topography (Douglas & Walker, 2013). Such a backdrop provides context for Crellin Elementary the County's entire school district, including 6 elementary schools, 2 middle schools, and 2 high schools. Garrett County faces challenges that are much different than the state's non-Appalachian and more urban or coastal counties and school districts.

Garrett County's school and county government's fiscal difficulties are structural and intertwined with the area's demographics and dim economic outlook for many Appalachian communities. Since 2000, the district has lost 842 students, and is only one of three districts in Maryland (the other two are the bordering Appalachian districts) to face enrollment declines. The state projects a 10% reduction in Garrett County's enrollment from 2009-2019 (Waggoner, 2012). In Garrett County, the median household income is \$46,273, compared to the state's \$73,211 (U.S. Census, 2013). Declining enrollment has contributed to an 18.5% reduction in state aid for the school district over the last 4 years (Bieniek, 2014). These cuts have forced substantial reductions in instructional staff, elimination of numerous programs, deferred maintenance, grade consolidations, and school closures. But additional cuts must be made and the district is even considering a pay to play plan for students participating in school-sanctioned sports (D. McCauley, personal communication, September 4, 2013; Waggoner, 2012). In December of 2013, the Garrett County Board of Supervisors agreed to \$500,000 cuts in county government expenses coupled with \$200,000 in school district operational expense cuts as conditions for a \$2.2 million cash infusion for the school district. Conditions for the County's cash infusion included that the district cease consideration of consolidation of elementary schools and engage in long-term fiscal planning (Blaisdell, 2013). In May, 2014 Maryland's Governor signed legislation limiting reductions in student-count based state aid to Garrett County and an adjoining rural district, which are experiencing disproportionately high reductions in student count; the legislation also calls for a study of declining enrollment in rural districts (General Assembly of Maryland, 2014).

In 2012, 46% of students in the Garrett County district qualified for free and reduced meals (FARM) (Garrett County Public Schools, 2012); in 2013, 87% of Crellin Elementary's students were FARM-eligible (Garrett County School Improvement Plan, 2013-2014). Since McCauley came to Crellin elementary in 2001, the school has always had a substantially higher percentage of students eligible for free and reduced meals in comparison to the rest of the district (D. McCauley, personal communication, April 18, 2013).

Only 17.3% of Garrett County's residents hold bachelor's degrees or higher in comparison 36.1% of Maryland residents. The 2007-2011 poverty rate in Garrett County was 12.7% compared to Maryland's 9% (U.S. Census, 2013). For McCauley, the entrenched poverty in Garrett County magnified within Crellin's boundaries provides important context for understanding the need for the place-based strategy at Crellin (personal communication, April 18, 2013).

In 2013-2014 school year, Crellin Elementary had 109 students, 8 teachers, 1 para-professional instructional assistant and 1 principal. Crellin's principal maintains substantial instructional duties in addition to her administrative role. Crellin's grounds include 5-acre Environmental Education Laboratory (EEL), used for hands-on instruction in all content areas and grade levels. Other aspects largely unique to Crellin include a reliance on "Experts in the Community" or "Learning Partners" who collaborate with instructional staff and deliver a substantial portion of the school's instruction. By design, Crellin's instruction crosses disciplinary boundaries and often occurs outside of the traditional classroom (Garrett County School Improvement Plan, 2013-2014; D. McCauley, personal communication, September 4, 2013).

Program Evaluation Model

The constructivist paradigm of program evaluation using the case study evaluation design (both described by Mertens & Wilson, 2012) undergird this program evaluation. The constructivist paradigm emphasizes a qualitative approach, rich detail in descriptions, and partnerships with stakeholders throughout the evaluation. Case studies can be especially relevant when the evaluation focuses on a single site.

The work of Schorr and Farrow (2011) and Schorr (2012), which focuses largely on programs aligned in terms of complexity with the place-based strategy at Crellin, also inform this evaluation's approach. Especially relevant is Schorr and Farrow's expansive view of what constitutes evidence and their placement of program evaluation in a public policy context that recognizes philanthropic and government funding at stake in modern-day program evaluation. Also germane to the place-based program at Crellin is Schorr and Farrow's (2011) recognition of interrelated program elements, which are represented in this evaluation's logic model:

Building evidence for what it takes to accomplish good outcomes requires looking not only at the effectiveness of specific programs but mapping backward from the desired result to identify the interrelated and mutually reinforcing experiences, interventions, opportunities, and support that collectively produce the result. From a research point of view, this is extraordinarily challenging. But from the perspective of the schools, health care providers, community organizations, parents, and many others trying to help entire populations of children, such guidance is essential. (p. 7)

Logic Model

A logic model “is a planning tool to clarify and graphically display what your project intends to do and what it hopes to accomplish and impact” (National Network of Libraries of Medicine, n.d., para. 1). Logic models are also a communications tool that can assist stakeholders in understanding and participating in program evaluation (Mertens & Wilson, 2012). The logic model in Figure I represents key components of the place-based strategy at Crellin while noting their interconnectedness. Place-based education at Crellin breaks down walls between school and community (D. McCauley, personal communication, April 13, 2013) and the logic model reflects such partnerships, several of which have led to substantial outside externally-generated financial resources to support Crellin’s activities. Since 2002, Crellin has raised nearly \$700,000 to support its programs.

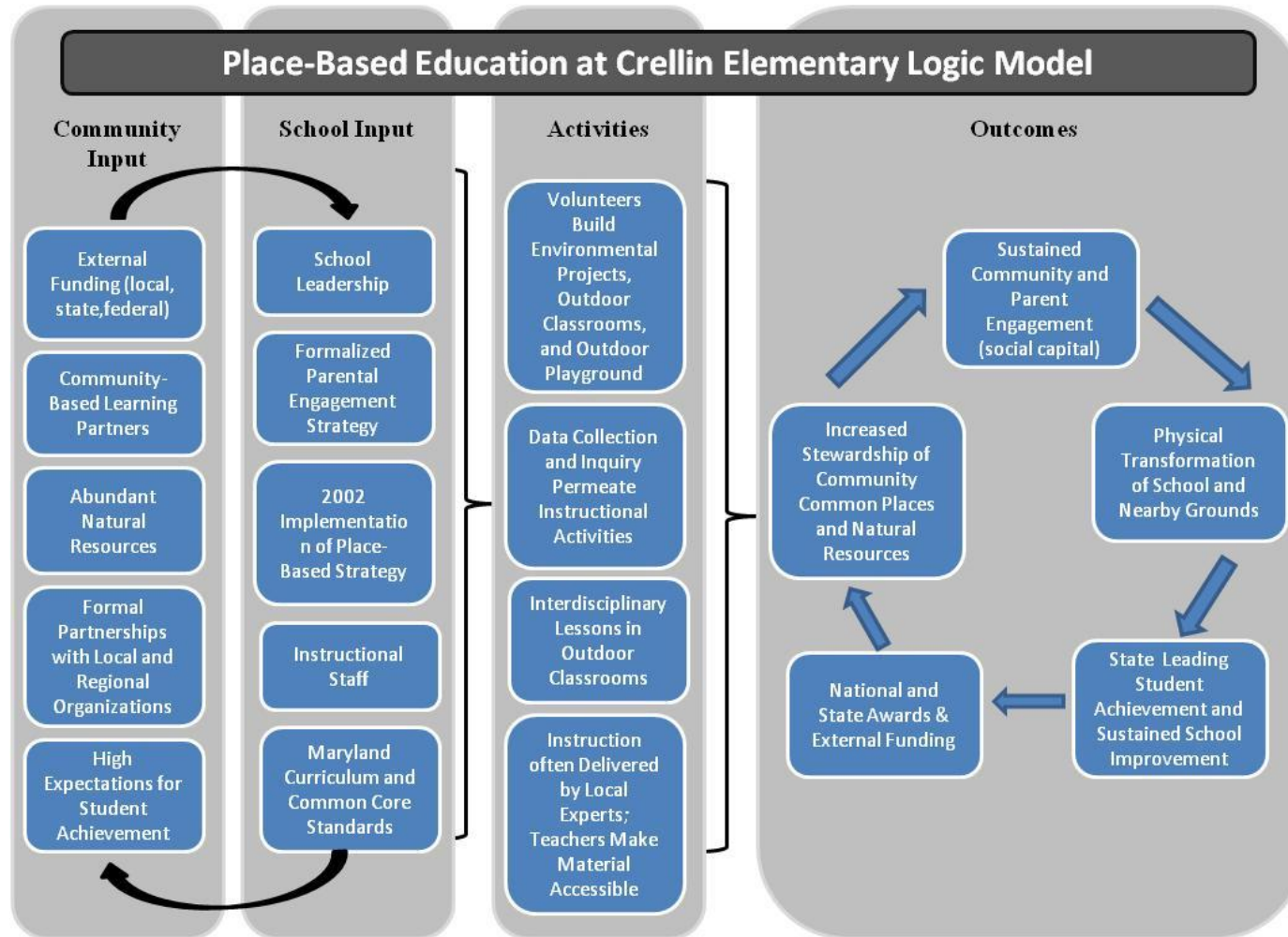


Figure 1. Logic Model – Place-based education strategy at Crellin Elementary

Evaluation Questions

The focus of this program evaluation is on the activities of place-based education and specifically centered on the instructional aspects of place-based education at Crellin.

To that end, this study seeks to answer three evaluation questions:

1. What are Crellin Elementary School teachers', administrators', and community partners' perceptions and working definitions of place-based education?
2. What are and were the key elements in implementing and maintaining the place-based education strategy at Crellin Elementary School?
3. What instructional aspects of the place-based education strategy at Crellin Elementary School are most important to its success?

The first question was generated in response concerns expressed in place-based education literature (e.g. Jennings, Swidler, & Koliba, 2005) that educators lack clear parameters for defining what constitutes place-based education. Further, contributing to nomenclature building can be an important contribution of case study program evaluation (Yin, 2014).

The second question was developed largely in response to the discussion of place-based and similar programs with multiple variables (educational and human or community service-based) by Schorr and Farrow (2011) and Schorr (2012), which emphasized the too-often neglected focus on implementation in program evaluation as evaluators often focus heavily on programmatic content. Multiple informal conversations with Crellin's principal and staff coupled with causal observations during visits to the school offered preliminary evidence that implementation is the linchpin of the place-

based strategy's success at Crellin. "Success" refers both to Crellin's long record of student achievement as gauged by test scores, but equally to Crellin's more holistic goals centering on civic renewal, environmental and community stewardship and character education (Wheeler, 2011).

The third question was developed largely in response to conversations (noted in the "Problems" heading) with Paul Theobald and Michael Duffin, and the work of Powers (2004) and Smith (2013), all of which noted the need to delineate the instructional strategies inherent within place-based education as critical to growing the base of research undergirding the strategy.

Definition of Terms

**Environmental Education:* "Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.

The components of environmental education are:

- Awareness and sensitivity to the environment and environmental challenges
- Knowledge and understanding of the environment and environmental challenges
- Attitudes of concern for the environment and motivation to improve or maintain environmental quality
- Skills to identify and help resolve environmental challenges
- Participation in activities that lead to the resolution of environmental challenges

Environmental education does not advocate a particular viewpoint or course of action. Rather, environmental education teaches individuals how to weigh various sides of an issue through critical thinking and it enhances their own problem-solving and decision-making skills” (United States Environmental Protection Agency, n.d.).

**Inquiry-based learning:* “Inquiry-based instruction is a student-centered and teacher-guided instructional approach that engages students in investigating real world questions that they choose within a broad thematic framework. Inquiry-Based instruction complements traditional instruction by providing a vehicle for extending and applying the learning of students in a way that connects with their interests within a broader thematic framework. Students acquire and analyze information, develop and support propositions, provide solutions, and design technology and arts products that demonstrate their thinking and make their learning visible” (Northeastern Illinois University, para. 1)

**Place-based education:* “Place-based education is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students’ appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the engagement of local citizens, community organizations, and environmental resources in the life of the school” (Sobel, 2005, p. 7).

**Problem-based learning:* “Problem-based learning (PBL) is an instructional method in which students learn through facilitated problem solving. In PBL, student learning centers on a complex problem that does not have a single correct answer. Students work in collaborative groups to identify what they need to learn in order to solve a problem. They engage in self-directed learning (SDL) and then apply their new knowledge to the problem and reflect on what they learned and the effectiveness of the strategies employed. The teacher acts to facilitate the learning process rather than to provide knowledge” (Hmelo-Silver, 2004, p. 235)

**Progressive Education:* Progressive education is focused on creating real-life or “authentic” learning experiences for students—the kind of experiences that enable them to produce work that is meaningful to them and that has value beyond school. Through an integrated curriculum, topics are examined across all disciplines for more relevant, profound learning (Green Acres School, n.d., para. 1).

**Service-learning:* “(SL) is a well-recognized teaching approach that integrates meaningful community service with classroom teaching” (Stephenson, Stephenson, & Mayes, 2012)

CHAPTER 2:

Review of the Literature

In this review of literature, I present an overview of place-based education in which the newness of place-based education (identified as a distinct educational strategy) is noted, while, at the same time, acknowledging the centuries-old place-based education foundations. For the review's clarity and alignment with contemporary place-based education literature, the seminal contributions of Theobald (1997), who emphasized the school-community connection and an interdisciplinary approach to place-based education, are discussed at length and threaded throughout the review. The work of Gruenewald, Smith, and Sobel is also noted throughout the review, an acknowledgement of their substantial contributions, both scholarly and practitioner-focused, to the still-nascent literature base. Personal communications with Paul Theobald and Michael Duffin supplement the literature review. Theobald provided historical context explaining the dearth of available place-based education program evaluation examples. Duffin was helpful in addressing the status quo of place-based education program evaluation, much of which is conducted by PEER Associates, where Duffin is a partner.

The review's first section examines the roots and theoretical foundations of place-based education while discussing the still-forming definitions of the strategy and the strategy's ties to progressive and constructivist approaches to education, both of which are linked to John Dewey. The section discusses also the wide-ranging influences on Paul Theobald's work, in an attempt to underscore the inherently interdisciplinary nature of place-based education literature (influenced largely by Theobald) that is often, but not

always, coupled with critiques of modern social, education, economic, and political systems.

The review's second section focuses on the contemporary practice of place-based education, including school and community linkages and the strategy's relationship with environmental education. The section also discusses the emerging field of brain science and its connections to place-based education. The review's final section covers attempts to measure the impact of place-based education in relation to student achievement and student empowerment, while noting literature gaps and the dearth of quantitative research in available literature. The review also touches on areas of conflict in place-based research and discusses criticisms of strategy.

Theobald (1997) coined the "place-conscious classroom" moniker in a book titled, *Teaching the Commons*, which served (in addition to subsequent works that he authored and co-authored) as a starting point for pivotal discussions of place-based education, including Gruenewald's (2003) connection of place-based education to the Freire-inspired critical pedagogy. Smith (e.g. 2002 and 2013) and Sobel (e.g. 2005, 2011, 2013) are best known for bridging the work of place-based education theorists and practitioners (especially environmental educators in Sobel's case) and their work is regularly cited in place-based education literature. The prominence of Theobald, Smith, Sobel, and Gruenewald (Gruenewald changed his name surname to Greenwood and is cited under both names in this review) in place-based literature is an indicator of their contributions to the study of place-based education (Nespor, 2008), and, quite likely, as Theobald (personal communication, March 7, 2014) and Duffin (personal communication, March 8, 2014) noted, the need for additional researchers and evaluators

in the place-based education milieu. Finally, Duffin's (2006) reminder of the "interdisciplinary" and "still emergent" (p. 19) nature of place-based education offers a qualifier for this review, which is an attempt to further understand the strategy while adhering to Smith's (2013) and Theobald's (personal communication, March 7, 2014) admonitions that place-based education is ill-suited for placement in modern education's disciplinary, curricular, and program evaluation boundaries.

Roots of Place-based Education

Place-based Education Defined

This review of literature and broader study is anchored to Sobel's (2005) definition of place-based education (provided in chapter 1). To further clarify place-based education with a focus on this study's evaluand and the literature review's focus, the below definitions are complementary to Sobel's (2005).

Azano's (2011) focused on instruction in a definition anchoring her study of one rural Appalachian English teacher's use of place-based education. "Educational practices that purposely seek to tie the realities of place to instruction, particularly for the purpose of student engagement, are typically referred to as place-based education" (pg. 1).

Elements of place-based education are inherent in examples of strategies that are especially familiar to educators versed in John Dewey inspired progressive education (e.g. experiential education, case-based learning, service-learning, action research, problem-based learning, outdoor education) with place-based education's uniqueness tied to its contextualization at the local level, its inherently interdisciplinary nature, and clear intention to motivate students toward bettering and understanding their community and

environment as primary educational objectives (Woodhouse and Knapp, 2000; Semken, 2012). Place-based education is also aligned with constructivist theory (Lewicki, 2010).

Smith (2010) noted the non-anchoring of place-based education in theory leads to a slippery slope in defining place-based education.

In some respects, place-based education can mean almost anything people want it to—much like the term sustainability...I'm seeing this happen with the way school gardens are becoming synonymous with place-based education. There is nothing wrong with the creation of school gardens...But school gardens, unless they are coupled with investigations of industrial agricultural systems and the inequitable ways that food is distributed to the majority of people on the planet, do little to help students grapple with the deeper forms of cultural change that motivate my commitment to place and community-based education. (para. 1, 2)

Smith's (2010) concern coincides with working examples of place-based education that point to the importance of embedding a commitment to place-based education in a school and community's culture, or, in other words, an emphasis that the most effective place based education requires sustained community and school commitment (Lewicki, 2010; Powers, 2004; Smith, 2002; Sobel, 2005; Tolbert and Theobald, 2006; Theobald, 1997).

Responding to Smith's (2010) concern, Greenwood (in a public exchange of letters with Smith), noted place-based education's potential to help bridge long-standing political divides as shared interest place can lead to "shared care and investment" (para. 4). Greenwood concurred with Smith's (2010) concern that examples of what some call

place-based education too often not rooted in larger context, but Greenwood was more forgiving.

It doesn't really bother me that people call what they do "place-based education" even when they don't fully confront all of the issues that inhere in places, and even when a full-blown program never emerges. It also doesn't bother me when people are confronting these issues but not calling what they do place-based education. Though I believe that more fully theorizing PBE is a worthwhile task, I think what is needed is an intersectional approach so as to make room [sic] for coalition and alliance building between groups doing similar work and calling it by other names. (para. 4)

Ultimately, in the exchange, Greenwood (2010) and Smith (2010) both emphasized the potential for place-based education as a force in confronting ecological crises and long-standing political divides while renewing social capital.

Theoretical and Philosophical Origins

The theoretical underpinnings of place-based education go back centuries. Theobald (1997) linked place-based education to John Dewey's emphasis on connecting the student to his or her environment and even to theoretical foundations of community and interdependence dating to ancient Greece. Smith (2013) joined Powers (2004) and Woodhouse and Knapp (2000) in a line of scholars consistently linking place-based education to Dewey; Powers also linked place-based foundations to Piaget's emphasis on intrinsic motivation and active learning. Azano (2011), citing inequities in rural education, linked place-based, especially in a rural context, to the ideas of Paulo Freire on

critical pedagogy. Gruenewald (2003) built on the work of Freire and a cross-section of philosophers (ancient Irish to Thoreau) in crafting his multidisciplinary “Critical Pedagogy of Place”.

The work of Theobald and Gruenewald offers a stable foundation for searching place-based education’s philosophical roots. Academic database searches reflect that Theobald and Gruenewald are cited consistently in nearly all scholarly place-based education articles and books that discuss the strategy’s foundations. Thus, a deepened understanding of the influences on Theobald and Gruenewald offers a framework for exploration of the place-based strategy, while also providing a foundation for those with critiques of strategy.

Theobald (e.g. 1997; 2006; Theobald & Curtiss, 2000) has a communitarian outlook rooted in local empowerment, but succinctly characterizing his range of theoretical influences and disciplinary home is difficult. Theobald regularly crosses disciplinary boundaries and his philosophical influences span thousands of years. Gaither’s (2010) description of Theobald provides an apt portrait not only of Theobald, but also of the range of influences on place-based education’s foundations.

Theobald is that rare contemporary academic whose intellectual project crosses disciplines and methodologies to get leverage on big questions. He is something of an anachronism today: a public intellectual, a man of letters, a synthetic thinker in an age that has little use for such vocations. His intellectual bent is similarly unfashionable: he’s an agrarian. (p. 249)

Ultimately, Theobald (e.g. 1997) takes on the philosophies and human forces that promoted economies of scale, specialization, rationalization, and a drive toward assembly-line like efficiency and social Darwinism, both industrial and educational, that he sees as hallmarks of the post-industrial revolution American landscape. Place-based education, for Theobald (1997), is an antidote to the frayed social and environmental fabric caused by forces—largely influenced by greed and individualism—that shaped much twentieth and twenty-first century America and England. For Theobald, history, both American and world, provides examples of community that inspire his vision for and description of place-based education. One example of Theobald’s viewpoint is his belief that school consolidation—urban and rural—strips local ownership and accountability while contributing to lost communal ties with no educational gain in return (1997; 2014)

Gruenewald (2003) linked place-based education to the highly political critical pedagogy of Paulo Freire. Critical pedagogy focused on empowerment of the marginalized and social justice (Azano, 2011). Gruenewald (2003) critiqued critical pedagogy’s neglect of environmental justice issues, which he considered intertwined and interdependent with the social justice issues addressed by critical pedagogy. Gruenewald (2003) also argued that place-based education lacked a clear theoretical base, but its ecological rural emphasis (Theobald was among those he cited) led to the “neglect” (p. 4) of conflicts in American culture including the oppression of marginalized populations. Such neglect, according to Gruenewald, affects perceptions of place between dominant and oppressed groups, and can impact how one or a group views the social construction of place. Gruenewald (2003) attempted to marry critical pedagogy and place-based

education, calling it “critical pedagogy of place” (p. 3). Judging by subsequent place-based scholarship (e.g. Nespor, 2008; Smith 2013; Tolbert & Theobald, 2006), it appears that Gruenewald’s joining of critical pedagogy and place-based education was influential, although Theobald’s (1997) work raised similar environmental and social justice concerns, albeit in a context not explicitly linked to Freire’s critical pedagogy. Theobald (personal communication, March 7, 2014) noted his general agreement with and support for Gruenewald’s (2003) viewpoint, however, he (Theobald) concurred with my assessment that Gruenewald (2003) underestimated the environmental and social justice focus in Theobald’s (1997) *Teaching the Commons*.

Contemporary Origins

John Dewey’s emphasis on connecting the student to his or her environment and connecting the realities of daily life with instruction and curriculum binds the philosophical and contemporary origins of place-based education (Flynn, Kemp, & Callejo Perez, 2009; Smith, 2002; Sobel, 2005; Theobald, 1997; Tolbert & Theobald, 2006; Woodhouse & Knapp, 2000).

Smith’s (2013) synthesis of place-based research noted that available evidence thus far reflect that, “...place-based education could well provide a way for overcoming the division between the classroom and community Dewey identified over a century ago. In doing so, students, communities, and the environment could all be the beneficiaries” (220).

Smith’s conclusions are consistent with findings from Powers’s (2004) in her cross-program analysis of four place-based programs combined with a review of place-

based literature. Powers analyzed place-based programs connected to the Place-Based Education Evaluation Collaborative (PEEC), an organization that fosters place-based evaluation and professional development. PEEC formed in 2002 (Powers, 2004), the year that the place-based moniker first appeared in a major educational publication (*Phi Delta Kappan*) (Rosenthal, 2008).

Powers's (2004) linking of "closely related research" (pg. 18) to the growing body of evidence supporting place-based learning is consistent with Sobel (2005) and Smith (2013) who are among the scholars and practitioners working to link research from environmental education and other closely related fields (i.e. experiential education, service-learning, project-based education) to place-based education; doing so strengthens the argument that strategies within place-based are supported by base of high-quality research far greater in scope than the mostly qualitative and anecdotal research base currently undergirding place-based education (Semken, 2012). A survey of Vermont teachers encountered little consistency in what teachers thought constituted place-based education, despite state-mandated standards addressing place and sustainability in the curriculum. The lack of consistency in use of the place-based moniker is an indicator of the difficulty in applying a base of research to the strategy (Jennings, Swidler & Koliba, 2005).

Contemporary Practice of Place-based Education

Discussions of contemporary place-based education regularly emphasize the broadness of the strategy's aims, the difficulty in measuring the strategy in the current standards-based era, and linkages to broader discourse surrounding declining civic

engagement, environmental education, and emerging brain science. This section describes place-based education's ties to such discussions.

Against the backdrop of fading support for public education (Fowler, 2013), researchers have noted that place-based education's ability to increase school and community ties (*Bartholomaeus, 2013; Gliner, 2012; Lewicki, 2010; Sobel, 2005; Theobald, 1997*). Gliner (2012), Lewicki (2010), and Sobel (2005; 2013.) offered examples of schools—urban and rural—that built bonds across generations in communities via place-based education. Such bonds represent the interdependence of school and community as described in Theobald's (1997) description of a “place conscious classroom” in which he provided scenarios where students, teachers, and community conduct mutually beneficial research and other activities in which the school is a center of the community for all ages and a focal point for civic engagement and even enterprise. Similarly, Sobel (2011) called Crellin Elementary the “center of the community” (p. 6) as it took on local history, environmental reclamation, and community-based learning projects in an effort to connect the school and community at multiple levels.

Place-based Education and Ties to Environmental Education

With place-based education's long-established ties to environmental education, discussions of place-based education often occur in forums for environmental educators and researchers (Greenwood, 2013; Powers, 2004, Smith, 2013). However, place-based education is not simply another name for environmental education. Greenwood (2013) argued that place-based education can bring ecological and cultural context, for example, to the study of the environment, in addition to other disciplines. Place-based education

scholars also note (as discussed further below) that the interdisciplinary nature of place-based education and the grounding of place-based education in local context can to greater can lead to a holistic, but grounded, understanding of phenomena acting as a counterpoint to the “abstractness that sometimes surrounds globalization discourse” (Greenwood, 2013, p. 93) In short, place-based education’s broad aims including community empowerment, understanding across disciplines and environmental sustainability, for example, should be taken in to account when scholars and practitioners couple place-based education and environmental education (Brandt, 2013).

Louv (2005) coined the “nature deficit disorder” term to describe the consequences of the increasing isolation of children from nature. Such isolation contributes to obesity, attention-deficit disorder, and disconnection from the natural world. By “disconnection” from the natural world, Louv is referring in part to the fear of outdoors and the likelihood that students not exposed to nature and the outdoors will be less inclined to support conservation and environmental initiatives. The disconnect between children and nature is manifest in fewer visits to historic sites, a loss of regional identity, and increased societal fragmentation (Center for Place-based Learning and Community Engagement, n.d.)

Sobel (1999) used the term “Ecophobia” to describe the impact of well-intended environmental efforts around large issues (e.g. acid rain, ozone hole, whaling, etc.) that expose children to environmental problems which they have little capacity to address before they are exposed to, or grounded in, their local environment. In short, Sobel proposed that children to connect with the environment at a level they can see, touch, and feel prior to exposing them to and asking them to address the world’s most pressing

environmental problems. Sobel (1999) built on these arguments when arguing that grounding education in local helps provide critical context for grasping global-scale issues and themes.

Place-based education's tying of education to local landscape is a counter to the nature deficit disorder described by Louv (Stevenson, 2008). Modern schooling's emphasis of task, recess on asphalt and field trips to synthetic environments are counter to the needs of children in developing ecological awareness. Tying local geography and topography to curriculum is an effective launching point for heightened environmental awareness. Otherwise, students are unable to make connections between macro environmental problems (e.g. rainforest destruction or climate change) and their own lives (Sobel, 2005; Sobel, 2013).

Brain Science and Place-based Education

John Medina (2008), a developmental molecular biologist, offered a set of "Brain Rules" synthesizing a wide range of brain-focused research in an effort to understand and influence teaching and work. Inherent in Medina's work is an emphasis on placing teaching and learning in meaningful, memorable context.

What do these studies show, viewed as a whole? Mostly this: If you wanted to create an education environment that was directly opposed to what the brain was good at doing, you probably would design something like a classroom. If you wanted to create a business environment that was directly opposed to what the brain was good at doing, you probably would design something like a cubicle.

And if you wanted to change things, you might have to tear down both and start over. (p. 5)

Medina's (2008) views on the modern classroom and teacher education coincide with much of the theory undergirding place-based education, especially the work of John Dewey. Medina (2008) linked Dewey's laboratory school at the University of Chicago to modern discussions of placing education in "real world" (p. 275) scenarios. Medina (2008) used medical schools and teacher education programs as discussion starters. Medina (2008) noted that medical schools offer a "...surprisingly successful way to transfer complex information from one brain to another" (p. 275). Medina lauded the connections that medical schools make with the real world (i.e. teaching hospitals) during training, via participation of medical students in activities with clinicians and researchers, and in the "exploratory magic" (p. 276) that occurs "By the simple juxtaposition of real-world needs with traditional book medicine" (p. 276). Medina then goes on to propose a college of education teacher training model based on the same premise of merging research, field experience, and, in the case of education, brain science. He argued such a scheme would work for other academic subjects (giving business school as an example) and underscored that such a model heeds the "evolutionary need to explore" (p. 277)—a point (exploration) which he notes as key to much of emerging brain science. Perhaps not coincidentally, many examples of place-based education (e.g. Bartholomaeus, 2013; Gliner, 2012; Sobel, 2005; Smith, 2002) also emphasize the need for exploration in tapping a students' innate curiosity.

While further discussion of mind, brain, and education science may well permeate future literature reviews of place-based education (my own prediction), the overlap of

Medina's (2008) synthesis of emerging brain science with the tenets of place-based education is notable; Medina's (2008) exploration of Dewey's legacy furthers this link. Medina's (2008) emphasis on sensory stimulation, exploration, and even exercise reads like recap of key points from Smith and Sobel's (2010) primer geared toward place-based education practitioners.

Tokuhamas-Espinosa (2010; 2011) described the emerging "Mind Brain Education Science" which links the work of cognitive neuroscience, education, and psychology. While noting the promise of the "transdisciplinary" (2011, para. 2) linkages, also noted are the challenges of merging differing research methods, traditions, cultures, etc. within the three fields. Further, neuroscience, psychology, and even education (as we currently know it) are relatively young fields in comparison to fields such as biology. Yet, Tokuhamas-Espinosa (2011), much like Medina (2008) expressed confidence that the collaborations among educators, neuroscientists, and psychologists will lead to better teaching and learning. Theobald (1997) may or may not have been thinking of emerging brain science when he said it is "pedagogically wise for students to be out in the community during school hours" (p. 127). But Tokuhamas-Espinosa's (2011) words read much like an endorsement for the ideas expressed by Theobald (1997). Tokuhamas-Espinosa (2011) noted that the "global thinker" and "interdisciplinary thought" (para. 25) lauded by the Greeks have come back in to fashion. The complexities of the modern world and globalization make rooting education in place ever more important, as doing so provides context across disciplines and generations for grounding of thought (Stevenson, 2008). Yet, the modern school schedule is "antithetical" to interdisciplinary inquiry (Theobald, 1997, p. 150).

Measuring the Impact of Place-based Education

Attempts to synthesize place-based education literature to determine the strategy's impact provide consistent conclusions, while offering reminders that the aims of place-based education are much broader than gauging student achievement solely by test scores (e.g. Flynn, Kemp & Vallejo Perez, 2009; Duffin, 2006; Smith, 2013, Tolbert & Theobald, 2006). Themes from available syntheses note a demonstrated trend in available studies, both qualitative and quantitative (some are peer-reviewed; many are not) showing that connecting students to place via progressive education strategies (often via hands-on environmental education) appears to boost test scores while often pointing to increased student and/or instructor engagement. Other discussion points touch on the still-ambiguous, or evolving, nature of what constitutes place-based education and the difficult to measure goals of place-based education such as community engagement. Finally, there is an overt effort to harness evidence from the more established (with more available quantitative and peer-reviewed studies) field of environmental education and apply it to place-based education as appropriate (Duffin, 2006; Powers, 2004; Smith, 2013). There is also a heavy reliance on case studies in American place-based education research (McInerney, Smyth, and Down, 2011; Smith, 2013). Theobald (personal communication, March 7, 2014) and Duffin (personal communication, March 8, 2014) noted the circular impact of the fragmented evidence base undergirding place-based education. Funders (government and philanthropic) often require demonstrated (often quantitative) evidence of impact before funding a strategy, and this has been magnified since the passage of No Child Left Behind (NCLB) law in 2001. Yet, without seed funding research and evaluation of an emerging strategy, it is difficult to provide initial

evidence to secure the attention of funders. Complex and place-based programs in education and other human service fields, which are inherently difficult to measure, are passed over for funding in the current environment, despite their possible substantial impact, because possibly less effective, but easier to measure, interventions fare better in the modern funding environment (Schorr, 2012).

Student Achievement

I have chosen to highlight Duffin's (2006) synthesis of available place-based education and student achievement literature because of its thoroughness and consistency with the above noted syntheses coupled with Duffin's immersion (via his 2006 dissertation and intertwined work at PEER Associates) in the field of place-based and environmental education evaluation for over a decade bridging the work of practitioners and academic research. Further, Duffin (personal communication, March 7 & 8, 2014) provided context for his 2006 synthesis in which he noted that PEER and much of its work has an "environmental angle". PEER's (n.d.) open-sourced body of work on its website confirms Duffin's point: environmental focus in its body of work (tied at varying levels to place) highlight the ties between the last four decades of environmental education and the nascent field of place-based education.

In heeding Sobel's (2005) definition of place-based education (provided in chapter 1), I am avoiding Duffin's (2006) level of detail in summarizing the broader array of environmental education-focused studies that he (Duffin) and Smith (2013) (in separate forums) describe to provide a broader base of support for place-based education. In doing so, I am concurring with Smith's (2010) concern that place-based education is in need of theoretical anchoring while emphasizing that environmental, progressive and

experiential education strategies (sometimes intertwined) are not inherently place-based. In this, I am heeding Smith (2002) and Theobald's (1997) influential descriptions of place-based education that underscore the educational and community engagement/renewal aims as primary; positive environmental impact and increased connection to the physical environment is an outcome, but not necessarily the primary goal of the overtly interdisciplinary strategy. Put differently, environmental education, as described in Chapter 1, has an explicit goal of environmental literacy/awareness; place-based education has broader aims.

While registering my concern with casually linking an environmental education literature to place-based education, I join environmental educators and place-based advocates who regularly point out a study by Lieberman and Hoody (1998) that is notable for its scope, clarity of findings, and understanding of place-based education's tenets at the core of the research, which uses the term "environment as integrating context" or EIC to describe place-based education. The non-peer reviewed study (supported by Pew Charitable Trust and a multi-state consortium of state education agencies) examined 40 schools with fidelity to EIC tenets. In the study, 98% of educators surveyed indicated that EIC increased student engagement and enthusiasm. Additional findings (though from a smaller subset of data) showed links between EIC-rooted pedagogy and standardized test scores. Finally, the study offered multiple examples of EIC's ability to energize teachers and produce positive outcomes across subject areas while reducing behavior-related incidents.

Special Needs

Place-based education's observed benefits for special needs populations were notable in an evaluation of four place-based education programs. Specifically, teachers and support personnel that showed the positive impact of place-based learning on Attention Deficit Hyperactivity Disorder students, English language learners, and those with developmental delays. Educators from the four evaluation sites reported that place-based programs engage children physically and in an applied way that utilizes skill sets of students who do not thrive in a traditional classroom. However, claims of place-based education's potential positive impact on special needs students were given with qualifiers noting the preliminary nature of the evaluation findings combined with the need to establish a research base for place-based education (Powers, 2004). Duffin (personal communication, March 8, 2014) acknowledged the regular citation of the Powers (2004) article as it is the sole available peer-reviewed program evaluation article in the body of place-based education literature. However, (Powers is his business partner) Duffin added that the Powers (2004) article is closely aligned with the work that PEER Associates (their firm) has done in the decade since the Powers article; he acknowledged the importance of peer review, but added that PEER's (open-sourced) body of work since the Powers article adds to the place-based evidence base, bolstering the findings in the 2004 article.

Student Empowerment

Theobald (1997) summoned the work of Dewey when he decried the modern educational system's viewing of children as trainees for a corporate world and economic success instead of as citizens who can impact their communities at any age.

When schooling is reduced to the provision of human resources for the economic market, the moral dimension of education is reduced in significance, if not eliminated altogether. Our cultural deification of the successful extends so far as to make heroes out of wealthy individuals, despite the fact, and in some cases because of the fact, that they broke laws or ruined lives on the climb to the top. (p. 121)

Tying closely to the theory undergirding service-learning, engaging students via learning opportunities in their communities as part of a comprehensive strategy aligned with curriculum and coupled with reflection offers a powerful method for meaningful civic engagement (Stanton, Giles, & Cruz, 1999). Such engagement also promotes real-world problem-solving skills while tying students to community economic and civic life (Smith, 2002). Additional benefits of instruction that views students as investigators and solvers of community-based programs include intergenerational collaboration and enhanced sense of self-worth for students (Lewicki, 2010).

Evaluating Place-based Education

Logic models, a tool of program evaluators, offer a way to ameliorate the difficulties of evaluating place-based programs which are, of course, anchored to locality (Smith, 2013). An attempt to mediate the ongoing dispute between experimentalists and inclusionists (proxies, in part, for the quantitative vs. qualitative disputes) in evaluation research is especially salient for those seeking to further place-based education research while placing it in a context of broader research and evaluation questions and models. Some programs—especially ones similar in scope and breadth to place-based education strategies—are not suited for traditional experimental design, but evidence shows that

they are worthy of support (Schorr, 2012). Additionally, Schorr (2012) gives credence to concerns raised by Jennings, Widler, and Koliba (2005) and Powers (2004) when they noted the difficulty of defining elements of place-based education into measurable components while simultaneously tying the concept to closely related educational strategies. Essentially, the breadth, numerous working definitions, and newness of place-based education to education evaluation and research discourse make it difficult to fit place-based education into existing parameters (Powers, 2004; Smith, 2013).

The federal government and foundations increasingly seek evidence-based experimental evaluations with control groups to determine whether a project is a “prudent” investment (Schorr, 2012, p. 50). Such focus on experimental and largely quantitative evaluations coinciding with the NCLB era challenged sprouts of place-education practice, research, and evaluation that had emerged in the 1990s (Smith, 2013; Theobald, personal communication, March 7, 2014). Considering the dearth of quantitative research undergirding place-based education (Nespor, 2008; Powers, 2004; Smith 2013), Schorr’s work has clear implications for place-based stakeholders.

Schorr (2012) described the value of non-experimental evaluation methods in circumstances especially relevant to place-based.

Non-experimental evaluation methods, on the other hand, help us learn about the effectiveness of interventions that are complex, place-based, evolving, and aimed at populations, rather than individuals and that include too many variables and too few units (for example, communities) to make randomization a reasonable choice.
(p. 53)

Additionally, identifying core components of successful programs, whether contextual or at the implementation stage, is an important step for evaluators of place-based programs with deep and multiple community ties (Schorr & Farrow, 2011; Schorr, 2012). Logic models, which aid in the identification of program components, are also a cost-effective tool for evaluators facing a difficult funding environment for place-based research (Smith, 2013).

Conflicts in Place-based Education Research

While a consensus emerges around place-based definitions and that place-based is a distinct strategy (Smith 2013), a disagreement about place-based education in the post-No Child Left Behind era exists.

Gruenewald (2003), Sobel (2005; 2013), Theobald (1997) represent the camp regularly expressing deep reservations about the rationalization of education (e.g. state and national standards, standardized testing, homogenized curriculum) and they believe rationalization of education undermines attempts at place-based education while ushering a long litany of negative consequences including students who are disconnected from their communities and environment and schools that disconnected from communities.

Jennings, Swidler, and Koliba present a different view. Their (2005) survey teachers using place-based strategies in Vermont offered no evidence that the “standards era” (post No Child Left Behind Act “NCLB”) thwarted place-based initiatives, and their discussion pointed to the compatibility of the standards movement and place-based strategies, noting that nothing in NCLB prevented place-based strategies.

Theobald (personal communication, March 7, 2014) responded to the argument that the post-NCLB era provides ample opportunity for place-based instruction, noting that,

...teachers CAN do place-based teaching inside current parameters (though those parameters seem to grow ever more restrictive). The point is, at least from my perspective, that the NCLB milieu works against the possibility of moving districts, schools, or just groups of teachers in a place-based direction. For as long as the idea has been around, we should have many Crellins to point to, but we don't. I attribute that to a lack of curricular and instructional freedom tied to larger state and federal policy.

Echoing Theobald's arguments, Greenwood (2013) offered that linking place-based and similar strategies to student achievement, while "strategic", also "potentially reinforces" the "problematic ends" (e.g. testing emphasis, curricular boundaries, lack of interdisciplinary inquiry) that produce the "constraining conditions" that thwart widespread adoption of place-based and similar strategies in schools (p. 95).

Criticism of Place-Based Education

Searches of academic databases yielded few results examples of works mounting criticism of place-based education as a strategy, which is, perhaps, a sign of the strategy's newness coupled with the relatively limited number of researchers providing a foundation for place-based education research. However, a few critiques emerged, centered on notions of place.

One critique is that advocates for place-based education cling to a notion of place and community that is more sentimental than realistic (Ruitenber, 2005; McInerney, Smyth, & Down, 2011). Another critique comes in two related arguments. There is a concern that a localized focus may be “myopic” in an era of globalized economic and cultural exchange (McInerney, Smyth, & Down, 2011, p. 10). Coupled with that concern is the scale of modern environmental and social problems, which often require collective action to address at a level beyond the local. Such an inward focus may give students too immersed in place a false sense of the scope of their impact (McInerney, Smyth, & Down, 2011; Nespor, 2008). Finally, Nespor (2008) applauds the range of influences on those calling for place-based focus, but calls out the place-based education advocates for lack of engagement with empirical inquiry while reiterating the concern that over-romantization of place may mask inequities experienced by those marginalized in a particular place.

As a counter to concerns that place-based education may thwart global perspective, advocates for place-based education are consistent asserting that rooting inquiry in local is cultivating influence for broadening educational horizons and student interest far beyond the local level, albeit with enhanced context for understanding interplay between local and global (Sobel, 2005; Smith, 2013; Theobald, 1997).

Sobel (2005) went further in calling place-based education “...the antidote to not-thinking about the earth common in many schools” (p. 6) while giving examples homogenized textbooks and standardized curriculum that ignore local learning opportunities and lead to students who are disconnected from both their schooling and the

broader world, and comparing the modern educational landscape in America to “urban sprawl” (p. 5)

Hayes-Conroy’s (2008) review of Gruenewald and Smith’s (Eds.) (2008) collection of place-based essays summarized a common refrain among place-based education advocates:

Importantly, several of the authors are clear to point out that a focus on place or on ‘the local’ does not preclude but actually requires a focus on what lies beyond the bounds of any one community or locale—that is, on the relationships between places. (para. 3)

Gruenewald’s (2003) tying of place-based education to Freire-inspired critical pedagogy was an effort to assuage concerns that place-based education may marginalize less powerful groups sharing space with dominant cultures, especially indigenous people. Nespor’s (2008) detailed discussion of Gruenewald’s (2003) and Theobald’s (1997) construction of place and place-based education is an indicator that that Gruenewald’s tying of critical pedagogy and place-based education still resonates, though the debate over whether Gruenewald’s (2003) merger of critical pedagogy and place-based education sufficiently accounts for the plight of marginalized populations and over-sentimentality for rural places is ongoing.

Conclusion

This literature review is an incremental attempt to construct a broader foundation for the exploration of place-based education as a distinct educational strategy while

acknowledging wide ranging (across history and disciplines) influences on the strategy. It is not an attempt to force place-based education inside still-evolving parameters.

I conclude with a nod to history. Lewicki's (2010) review of pre-WWII American education books yielded rich and abundant examples of what is clearly place-based education. Education in that era allowed for a natural community/school interaction and school structure forced the merging of disciplines in teaching. Plentiful examples of education using nature and the community as a canvas for interactive learning exist. Specialization of teachers was not the norm and the regular merger of science and the humanities, for example, was "awe inspiring" (p. 124). In short, Lewicki (2010) proffered, citing books nearly a century old, the manual for place-based education was written generations ago. Those (Lewicki included) now supporting the place-based education strategy are merely rekindling a fire.

The books Lewicki reviewed were from a far more agrarian time in history, and I suspect skeptics would remind that it is possible to become over sentimental about a bygone era while glossing over inequities and inefficiencies. Regardless, Lewicki (2010) joins Theobald (1997) in a clear reminder that place-based education is far from new.

CHAPTER 3:

Methodology

Chapter 2 presented paradoxes inherent in place-based education. The strategy (though not the moniker) has roots that are ancient (Theobald, 1997) and place-based education practices were prevalent in American education in the early twentieth century until forces promoting homogenization and efficiency began to chip away at locally rooted approaches to pedagogy and curriculum (Howley, 2009; Lewicki, 2010). Yet, defining what educational strategies constitute place-based education is still a challenge for educators (Jennings, Swidler, & Koliba, 2005; Smith, 2013) and there remains a need to address the largely piecemeal research base undergirding place-based education (Duffin, 2006; Powers, 2004; Smith, 2013).

This purpose of this program evaluation was to further the understanding of what instructional and implementation and maintenance (combined) aspects are most important to the place-based education strategy at Crellin Elementary, which is known for its decade plus of fidelity to place-based education principles (Gliner, 2012, Sobel, 2011) and a long list of accolades for its successes in student achievement (i.e. test scores), environmental education, external funding awards, community engagement, and emphasis on citizenship (Bowie, 2010). This program evaluation also sought to capture stakeholders' perceptions and/or working definitions of place-based education at Crellin Elementary.

The place-based education strategy at Crellin, though frequently a subject of interest to outside researchers, has never undergone a program evaluation. The strategy was put in place ad hoc, and grew over time (with some failures), and thus no documents

(e.g. school or district level strategic plans) exist as a guide for those attempting to replicate and/or understand the key elements of the strategy or its implementation. (D. McCauley, personal communication, March 13, 2013).

Evaluation Questions

Ultimately, this program evaluation's questions were built on Yin's (2014) "how" and "why" question foundation, which he asserted as particularly well-suited for case study methodology.

1. What are Crellin Elementary School teachers', administrators', and community partners' perceptions and working definitions of place-based education?
2. What are and were the key elements in implementing and maintaining the place-based education strategy at Crellin Elementary School?
3. What instructional aspects of the place-based education strategy at Crellin Elementary School are most important to its success?

The first question was generated in response concerns expressed in place-based education literature (e.g. Jennings, Swidler & Koliba, 2005) that educators lack clear parameters for defining what constitutes place-based education. Further, nomenclature building can be an important contribution of case study program evaluation (Yin, 2014).

The second question was developed in part as a response to concerns raised by Farrow and Schorr (2011) and Schorr (2012), who lamented a chronic lack of emphasis on implementation as program evaluators often emphasize programmatic content in their work. Thus, modern evaluation too often fails to capture key factors in successful

programs (e.g. social capital, leadership, organizational capacity, funding levels, community commitment, etc.), thereby limiting the replicability and scale-up of programs that produced outstanding results in a single site. Further emphasizing their point, Schorr and Farrow (2011) invoked a 1993 quote by then-President Bill Clinton: “You can find virtually every problem in our country solved by somebody somewhere in an astonishingly effective fashion...The challenge for us is to figure how to replicate that.”

Using an example from the school and community angle, Schorr (2012) noted that the highly successful and often lauded Harlem Children’s Zone (HCZ) program crosses boundaries of education, health, family services and community development/empowerment. Reducing programs such as the HCZ zone program into “quantifiable metrics” (p. 58) to measure impact is nearly impossible, especially when considering that the program targets an entire population. Similarly, the aims of place-based education include difficult to measure goals such as community renewal and empowering citizens for participation in civil society, which are far different than test scores, dropout rates, and other measures that are common post NCLB American education (Smith, 2002; Tolbert & Theobald, 2006).

My informal, context gathering conversations with Crellin’s principal and staff coupled with my causal observations during visits to the school offered preliminary evidence that implementation—spearheaded by the principal’s highly-visible leadership—is the linchpin of the place-based strategy’s success at Crellin. Farrow and Schorr (2011) and Schorr’s (2012) emphasis on implementation and the identification of core components of successful programs aligns with Yin (2014), who noted that implementation and process evaluations are useful both in “capturing the complexity of a

case” and understanding “changes in the case over time” (p. 222). Likewise, Fullan (2007) discussed increasing interest in implementation from the public sector while describing an “abundance” (p. 96) of evidence linking a school principal’s actions to successful implementation. Ultimately, if another school or community sought to replicate all or portions of Crellin’s place-based strategy, this evaluation’s emphasis on implementation Crellin may offer helpful insights, especially considering its emphasis on Crellin’s long-time principal’s role.

The third question was developed in response to conversations with Paul Theobald (personal communication, March 7, 2014) and Michael Duffin (personal communication, March 8, 2014), and the work of Powers (2004) and Smith (2013), all of which noted the need to delineate the strategies inherent within place-based education as critical to growing the base of research undergirding the strategy. Clarifying interventions with similar monikers, which may or may not be alike, can be foundational for future researchers (Yin, 2014). “Success” as used in question 3 refers both to Crellin’s long record of student achievement as gauged by test scores, but equally to Crellin’s more holistic goals centering on civic renewal, environmental and community stewardship and character education (Wheeler, 2011).

Evaluation Model

Program evaluation is a “relatively young discipline” that builds on numerous disciplines and research methodologies (Mertens & Wilson, 2012, p. v). Though having much in common with and building on traditional academic research, program evaluation is unique in that program evaluation, by nature, intersects with and is inherently tied to politics. Since the 1970s, several professional organizations, domestic and international,

have coalesced around program evaluation as a professional endeavor, an indicator of the growing acceptance and distinctness of the field (Mertens and Wilson, 2012).

Evaluation Paradigms

The constructivist paradigm of program evaluation using the case study evaluation design, (both described by Mertens & Wilson, 2012) undergird this program evaluation. The constructivist paradigm emphasizes a qualitative focus (though allowing for mixed methods, including quantitative data), rich detail in descriptions, and partnerships with stakeholders throughout the evaluation. The constructivist paradigm allows for modifications during the course of an evaluation in response to stakeholder responses; stakeholders are viewed as partners and understanding their experiences is at the core of program evaluation rooted in the constructivist paradigm. Ultimately, constructivists attempt “to achieve understanding of the meaning of social phenomena” (p. 134).

Mertens and Wilson (2012) divide program evaluation in to four paradigms (with constructivist being one of the four). Other paradigms and their key tenets are listed below:

- *Postpositivist paradigm* is largely quantitative, steeped in traditional scientific method, and emphasizes a detached, neutral evaluator.
- *Pragmatic Paradigm* relies on mixed methods and the pursuit of utility for stakeholders as central to the paradigm. The Pragmatic Paradigm was a response by those who determined that stakeholder input and usability of the final product were important and overlooked components of postpositivist program evaluation.

- *Transformative Paradigm* overlaps in theoretical and practical orientation with the Constructivist Paradigm, but is unique in that social justice, the explicit recognition of systemic inequality, and a focus on underrepresented (populations) are key elements of the paradigm.

Case Studies

Case studies are useful when the evaluation focuses on a single or a small number of sites and when rich detail is needed (Mertens & Wilson, 2012; Yin, 2014). Yin (2014) called case study research “one of the most challenging of all social science endeavors” (p. 3) while noting that the federal government and other entities may prefer other research types of research. Yin presented three scenarios when case studies are particularly relevant:

- (1) The main research questions are “how” or “why” questions; (2) a researcher has little or no control over behavioral events; and (3) the focus of study is a contemporary (as opposed to entirely historical) phenomenon. (Abstract, para. 1)

Yin (2014), noted the “mixed attention” (p. 219) that case study research has received in recent program evaluation texts, ranging from omitting case studies altogether to putting case studies on a level commensurate with other well established methodologies in program evaluation.

The work of Schorr and Farrow (2011) and Schorr (2012), which focuses largely on programs aligned in terms of complexity with the place-based strategy at Crellin also inform this evaluation’s approach. Especially relevant is Schorr and Farrow’s expansive

view of what constitutes evidence and their placement of program evaluation in a public policy context that recognizes the philanthropic and government funding at stake in contemporary program evaluation. Also germane to the place-based program at Crellin is Schorr and Farrow's (2011) recognition of interrelated program elements, which are represented in this evaluation's logic model:

Building evidence for what it takes to accomplish good outcomes requires looking not only at the effectiveness of specific programs but mapping backward from the desired result to identify the interrelated and mutually reinforcing experiences, interventions, opportunities, and support that collectively produce the result. From a research point of view, this is extraordinarily challenging. But from the perspective of the schools, health care providers, community organizations, parents, and many others trying to help entire populations of children, such guidance is essential. (p. 7)

Program Evaluation Standards

The evaluation's design and data collection procedures adhere to *The Program Evaluation Standards* (standards) as described by Mertens and Wilson (2012), which were developed by a joint committee led by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education along with input from twelve other organizations with a focus on education. The standards are met to promote utility, feasibility, propriety, accuracy, and meta-evaluation in the evaluation of education and related programs. Adherence to the standards is discussed further in the ethics heading in this chapter.

Research Design

Though student empowerment, rooted largely in the work of John Dewey, is a tenet of place-based education (Smith, 2002), students were not formal participants in this evaluation. In focusing the study on the instructional strategies and implementation of the place-based strategy at Crellin, I determined that faculty, the school's principal, and the community partners who take on a substantial portion of the instructional load and place-making tasks at Crellin are best-suited to address the research questions. However, observing student learning at Crellin and in the surrounding community (where instruction often occurs) is critical to outside observers gaining an understanding of the interconnected components of the place-based strategy as represented in the logic model, according to Dana McCauley, the school's principal (personal communication, March 14, 2013). McCauley's observation coincides with DeWalt and DeWalt (2002), who noted that observation helps the researcher to achieve a "holistic understanding" (p. 92) of phenomena while increasing the overall validity of a study. Thus, the evaluation's data collection did include observation at Crellin.

Participants

School staff. School-employed interviewees included the principal, who takes on a part time instructional role, five teachers, and two special service area certified staff members (e.g. counselor, arts teachers, etc.) and an administrative assistant. At Crellin, support staff is integral to the school's place-based strategy and the principal makes a concerted effort to hire both teachers and support staff who share in her vision for breaking down the walls between school and community (Sobel, n.d.), thus, the decision to interview an administrative assistant, in addition to instructional, staff. Interview

questions for school staff largely followed the interview protocol (Appendix A), but were slightly modified based on conversations with the school principal prior to the interviews in which she detailed specific interviewees' contributions to the place-based strategy.

The school's small size allowed for near-full participation of instructional and administrative staff in the interview process. Interviews are foundational to case study program evaluations, and semi-structured interviews allowed the capture of "similar information" from interviewees, while offering the flexibility to inquire deeper via open-ended questions in areas of unique interest or expertise of the interviewee.

Understanding the experiences of those being interviewed is integral to semi-structured interviews in program evaluation; standardizing the experiences with a static set of questions for all participants is not integral (Balbach, 1999, p. 8).

The semi-structured interview format allowed exploration of areas in which interviewees have particular expertise or interest. For example, several of Crellin's staff members have taken ownership of the school's outdoor learning facilities including vernal ponds, a reclaimed mining site, a trout hatchery project, a butterfly, and native plant garden, and a barnyard with three kinds of livestock. Others have taken leadership roles in tailoring place-based instruction to meet the state's academic standards or in adapting technology to meet the needs of the place-based strategy (D. McCauley, personal communication, March 14, 2013).

Community partners. Community partners take on a substantial portion of the instruction at Crellin. When community partners take on instruction, the role of Crellin's teachers shifts from instruction to ensuring that the instruction provided by community

partners is age-appropriate and aligned with curriculum. Community partners providing instruction at Crellin are often, but not always, are part of institutions (e.g. state conservation department) with financial and/or programmatic ties to the school. Thus, community partners, selected via purposeful sampling, provided insight on both the instructional strategies at Crellin and the place-based program's implementation. Examples of community partners at Crellin include a retired physician and amateur naturalist who provides hands-on science lessons such as recording migratory bird-related data and building wildlife habitat. Another example is staff from a nearby environmentally-focused quasi-public agency which regularly provides science instruction, often on-site at the organization's headquarters, which doubles as environmental learning center. Crellin's principal, cognizant of the community's largely blue-collar make-up, has found ways to build partnerships with parents and community members that capitalize on skill sets prevalent in the community. For example, community members including local farmers and even members of the nearby Amish settlement assisted with the construction of an ongoing animal husbandry at the school's active barnyard. Other projects such as a massive playground with a local history theme were built by volunteers from the community and efforts were made to tie such projects to instruction, with a focus on mathematics and local history (D. McCauley, personal communication, March 14, 2013 and personal communication, September 9, 2014).

Ultimately, the community partners selected for interviews via purposeful sampling were recommended by the principal based on their experience with and extensive ties to the place-based strategy at Crellin. The five community partner

interviewees have long-held relationships with Crellin Elementary and/or have a leadership role at local institutions with established ties to Crellin Elementary.

Data Sources

The constructivist paradigm undergirds this case study program evaluation. Thus, qualitative data from interviews are integral to this evaluation, as is common in case study program evaluation (Balbach, 1999). Other data sources included participant as observer observations, a review of documents related to the place-based program at Crellin, and a review of audio-visual materials (e.g. photographs of Crellin's barnyard and 5-acre Outdoor Learning Laboratory). Document source examples include Crellin's external funding (e.g. grant) applications, articles from local newspapers, and county tourism and business recruitment materials highlighting Crellin's achievements. All of the data sources align with Creswell's (2009) suggested data sources for qualitative research and with Mertens and Wilson's (2012) emphasis on qualitative methodology within the constructivist paradigm of program evaluation.

School staff and community partner interview protocol. Based on Creswell's (2009) suggested template, semi-structured interviews with school staff and community partners started with several ice-breaker questions and then precede to the evaluation questions. After that, probe questions were based largely on the position of the interviewee at the school, the interviewee's familiarity (or lack thereof) with instructional nomenclature, and the responses to the ice-breaker questions the standard evaluation questions. Crellin's principal indicated that most of the instructional staff and community partners are familiar with place-based education instruction-related terms such as inquiry-based learning, service-learning, etc., but she predicted mixed responses

in interviewees' use of the "place-based" term (personal communication, August 4, 2014). Semi-structured interviews allowed for consistency across interviews while also paving the way for in-depth probing in areas in which the interviewee has a particularly rich or unique perspective (Balbach, 1999). Sample questions from the school staff (Appendix A) and community partner (Appendix B) interview protocols include:

1. What instructional aspects of Crellin's place-based education strategy are most important to its success?
2. What are and were the key elements in implementing and maintaining the place-based education strategy at Crellin?

Interviews were recorded via handwritten notes and audio recorded with the consent of the interviewee; all but one interviewee consented to audio recording. Follow-up conversations with interviewees (largely informal) were recorded in field notes, but generally were not audio recorded. The Appendix section includes the interview protocols and the consent forms for interviewees.

Document review and audio-visual review protocol. Yin (2014) suggested that documents and archival pieces (e.g. photographs) may serve as evidence in case studies, but the researcher should take in to account the intended audience for the collected evidence. Documents examined for the evaluation were catalogued via photograph or by saving an electronic file of the document examined. Several documents reviewed, included student-produced books, permanent displays, and temporary displays (e.g. student projects, etc.), were not duplicable, but are available at the school. With the just-noted exception, materials reviewed are part of a case study database, which can be referenced by the researcher and that is open to the others for examination (Yin, 2014).

Observation protocol. The National Science Foundation (NSF) (1997) suggested the below protocol for qualitative observation, which has been adapted verbatim for this evaluation. It was chosen because of its inclusion of physical setting, which is paramount to place-based education (Tolbert and Theobald, 2006) and its emphasis on being alert to unanticipated events, which may re-focus evaluation questions. Openness to altering evaluations mid-course based on stakeholder input is embedded in the constructivist evaluation paradigm (Mertens & Wilson, 2012). The NSF (1997) protocol:

- Describe the setting of program delivery, i.e., where the observation took place and what the physical setting was like;
- Identify the people who participated in those activities, i.e., characteristics of those who were present;
- Describe the content of the intervention, i.e., actual activities and messages that were delivered;
- Document the interactions between implementation staff and project participants;
- Describe and assess the quality of the delivery of the intervention; and
- Be alert to unanticipated events that might require refocusing one or more evaluation questions. (para. 8)

Data Analysis

Merging data from various sources and collection methods constitutes triangulation, which elevates the credibility of program evaluations (Mertens and Wilson, 2012; Yin, 2014). Information from interviews and other evidence sources (i.e. observations, document review, and audio-visual material review) will be coded and

emergent themes will assist in identifying trends and sense-making of the data (Creswell, 2009, Yin, 2014).

The coding procedure adhered to Creswell's (2009) suggestion to first "Get a sense of the whole" (p. 186) and then pick several data sources and draw out the key concepts in an effort to establish baseline information for coding. After repeating this process several times, major topics or themes and other categories may emerge to which specific codes may be assigned. Gibson and Brown (2009) noted that coding qualitative data is largely "non-technical" and has "no concrete rules" (p. 128) and that the ultimate goal is finding commonalities in data and to aid in sense-making of a phenomenon. Further, in completing the coding process, cultural awareness, following the researcher's hunches, and noting areas such as recurring themes, disagreements, and points of emphasis and/or intonation within speech are important.

In tying Gibson and Brown's (2009) suggestions for working with qualitative data coding to this study and Crellin's context, I was particularly attuned to the importance of descriptive terms interviewees used for the place-based education strategy, especially when describing instruction. Jennings Swidler and Koliba (2005) and Smith (2013) noted the lack of consistency among educators when describing what connotes place-based education. Noting the linguistic consistency or lack thereof in the interviewees' descriptions of instructional and larger strategies within the place-based education strategy played a role in coding decisions and ultimately, in the usefulness of the data per Yin's (2014) reminder that case study research can help to clarify nomenclature. Finally, in respect for the importance of stakeholder involvement throughout the program

evaluation process and in recognition of my willingness to adjust the research focus (or questions) based on stakeholder input, which is inherent in the constructivist paradigm (Mertens & Wilson, 2012), I did not identify preliminary codes or to speculate on coding categories prior to collecting data. Table 1 (below) notes data sources and data evaluation techniques

Table 1

Evaluation Data Sources and Analysis

Evaluation Question	Data Source	Data Analysis
1. What are teachers', administrators', and community partners' perceptions and/or working definition(s) of place-based education?	Interviews	Qualitative analysis and interpretation of interview responses
2. What are and were the key elements in implementing and maintaining the place-based education strategy at Crellin?	<ul style="list-style-type: none"> • Interviews • Observation • Document Analysis & Review of Audio-Visual 	Qualitative analysis and interpretation of interview responses, observations, and review of documents and audio-visual materials
3. What instructional aspects of Crellin's place-based education strategy are most important to its success?	<ul style="list-style-type: none"> • Interviews • Observation • Document Analysis & Review of Audio-Visual 	Qualitative analysis and interpretation of interview responses, observations, and review of documents and audio-visual materials

Ethical Considerations

Institutional Review Board

Upon defense and approval of the dissertation proposal by a committee comprised of three faculty members, the researcher submitted an application to the College of

William and Mary Institutional Review Board (IRB). Permissions from Crellin Elementary were received, though no student data was collected except extant and non-identifying information recorded in observations. Informed consent was required from all interviewees. Precautions were taken (e.g. non-identification of the grade-level or subject area of the interviewed teacher) to preserve the anonymity of interviewees. In reporting interview results, efforts were made to conceal information that could tie comments to a particular interviewee. However, the principal (Dana McCauley) agreed to make her name public. Additionally, and with the input of the researcher's faculty committee and consent of Crellin's principal, the school's actual name is used.

Program Evaluation Standards

The evaluation adheres to the *Standards for Program Evaluation* (standards) which exist to promote industry-accepted standards for quality in program evaluation (Mertens & Wilson, 2012). Specific examples:

- **Utility:** The researcher developed a relationship with the school's staff on several visits to the school to fulfill coursework requirements. These visits allowed the researcher to gather context that contributed to the evaluation questions and the logic model.
- **Feasibility:** The researcher timed the research to coincide with a school summer camp in which the entire school faculty was available, but not constrained by the demands of the regular school year (per the suggestion of the principal).
- **Propriety:** In addition to adhering to the previously-noted ethical guidelines, the researcher has taken note of the cultural and economic circumstances which are unique to Appalachian communities, including Crellin and the surrounding area.

The researcher also noted similar studies (e.g. Azano, 2011) in which Appalachian context helped to shape both methodology and findings.

- **Accuracy:** The researcher has scheduled adequate time at the school coupled with immersion in place-based education literature in an effort to provide sufficient context, which is integral to information accuracy. Further, the researcher has committed to ongoing dialogue with stakeholders (per the constructivist paradigm) and agreed to mid-course adjustment of evaluation questions based on feedback and findings.
- **Meta-Evaluation:** The supervision of the study by an experienced faculty committee helps to ensure that the evaluation meets standards for quality.

Delimitations and Limitations

Per the constraints of case study evaluation, the findings apply only to Crellin Elementary (Yin, 2014). In focusing the project on Crellin's place-based education strategy's instructional and implementation components, the evaluation only nominally, at best, addresses the community impact of the strategy. As the logic model reflects, community partnerships are interwoven throughout as inputs and outputs and school and community lines are intentionally blurred. Thus, a limitation of evaluation is that it does not address community impacts in a way commensurate with the importance of community to place-based education (e.g. Tolbert & Theobald, 2006; Powers, 2004).

An important delineation in the evaluation is the underlying assumption that the place-based strategy at Crellin is successful. This assumption rests on Crellin's high-profile among place-based education researchers and advocates, its many awards, and its consistently high standardized test scores. Chapter 5 offers future researchers ideas for

both probing the long-term impact of the place-based strategy at Crellin (e.g. standardized test scores of Crellin students upon entering middle school in comparison to scores of students from other feeder elementary schools in the district) and for examining whether factors in addition to or in lieu of the place-based strategy are the primary drivers of Crellin's achievements.

A final note of limitation involves my own potential biases. I am an advocate for the constructivist approach to education. My own teaching strategies (at the college level) are often rooted in place and in progressive pedagogy. As a rural sociologist by training (master's degree), and a community development professional by trade, the language of place, place-making, and community empowerment is both familiar and important to me. Yet, the lack of sustained research undergirding place-based education concerns me, and I have tried to ensure that this program evaluation and the accompanying literature review are not exercises in advocacy for place-based education. Further, I hope that my familiarity with place-based education and community development adds richness to descriptions of findings in Chapter 4, which is a hallmark of the constructivist approach to program evaluation (Mertens & Wilson, 2012).

Summary

This program evaluation is an attempt to further place-based education inquiry via a heightened understanding of key instructional, implementation, and maintenance components of the place-based strategy at a school (Crellin) known as a model for a highly successful and comprehensive place-based strategy (Gliner, 2012, Sobel, n.d.). Further, this evaluation attempted to adhere to Creswell's (2009) and Yin's (2014) advice to maintain clear boundaries of scope in case studies while simultaneously heeding

Schorr's and Farrow's (2011) advice to avoid research parameters that are too narrow to gauge the often complicated and interconnected components of programs that address interwoven and entrenched educational and social problems.

If this program evaluation clarifies what instructional practices constitute place-based education at Crellin while identifying key components in the place-based strategy's implementation, it will meet the needs of local stakeholders while offering a platform on which future place-based education researchers and evaluators may build.

CHAPTER 4:

Results

“It’s a simple proposition really. Bring education back into the neighborhood. Connect students with adult mentors, conservation commissions, and local businesses. Get teachers and students into the community, into the woods, and on the streets—closer to the beauty and true grit. Get the town engineer, the mayor, and environmental educators onto the schoolyard...These are the places we all belong” David Sobel, 2013, p. 12

Along with identifying stakeholder perceptions of and key instructional elements in the place-based education strategy at Crellin Elementary, the study’s purpose was also to identify core components in implementing and maintaining the place-based education strategy. Such components intersect with instruction, but are also tied to larger aims at Crellin including, but not limited to, community connectedness, resource stewardship/sustainability, and promoting a spirit of inquiry. This chapter presents the study’s findings.

Consistent with the constructivist paradigm, which emphasizes stakeholder input and partnership (Mertens & Wilson, 2012), I have attempted to describe and categorize the findings in a manner useful to scholars and thus consistent with available place-based education literature and program evaluation standard practices (e.g. Mertens and Wilson, 2012). Another goal is reporting the findings in way wholly accessible to k-12 practitioners, especially at Crellin Elementary, where the majority of interviewees expressed appreciation for the possibility that this study might help to illuminate a

phenomenon known colloquially as the “Crellin Way”. “Crellin Way” encompasses Crellin’s overall strategy, instructionally and the school’s approach to building relationships and stewardship of the environment. “Crellin Way”, is the stakeholders’ casual working definition of place-based education as applied to Crellin Elementary.

As Smith (2013) noted, place-based education “cannot be slotted into specific curricular domains” (p. 213) while emphasizing the incongruity of post-No Child Left Behind American education (e.g. standardized testing’s prominence) with the aims of place-based education. The lack of consistent nomenclature—especially regarding the interviewees’ widely varied initial reactions to and working definitions of the place-based education term—also limited the utility of coding to gauge the frequency of terms used in interviews. The logic model (see chapter 1) offers a model of Crellin’s place-based strategy that, while accurate (according to stakeholders with whom I shared it), offers only a glimpse of the connective threads and intentionality of the place-based strategy permeating every aspect of schooling and community at Crellin. The upcoming “Snapshot of Instruction and Learning Environment” heading in this chapter and the analysis in Chapter 5 both detail the overlapping elements that merge to create the place-based strategy at Crellin.

Participants

Six teachers, representing every grade level with one exception and a special service area at the school, the principal, two certified staff members assigned to Crellin and other schools (i.e. counselor, music teacher, art teacher, etc.), and a member of the administrative staff were interviewed. With her permission, the principal is identified by name throughout this document. For all other interviewees, identifying information (e.g.

grade level taught and in some cases, gender) is obscured to protect participant confidentiality. The five community partner interviewees had a combined (approximately) 30 years of service to Crellin Elementary. I surmised that the remarkable level of agreement among interviewees in their responses is attributable to the school's small size (100 students), the multi-year tenures with the school for all interviewees, the principal's long-tenure, and the place-based strategy's decade plus hold at Crellin. Further, a number of researchers, philanthropic entities, documentary film makers, journalists, and educators have visited Crellin, eager to learn about or report on its success. The staff, community partners, and students are accustomed to questions and to being subject to observation from outsiders, and they seem generally well-versed in describing the "Crellin Way". In addition to the interviews, informal conversations with staff during my observation at the school provided valuable information, as my presence during their instructional duties, before and after classes, and during planning time often prompted additions to their formal interview responses and suggestions for data collection.

The remainder of the chapter is categorized in four headings, the first three of which correspond with the evaluation questions, while leaving the final heading ("Snapshot of Instruction and Learning Environment") as a avenue for describing the interconnected elements that combine to create place-based education at Crellin. The data sources, described in chapter 3, are noted, as applicable, in the below narrative. Detailed field notes (both written and orally recorded) were particularly helpful in tying instructional components of the strategy to broader goals within the strategy (e.g. character education, stewardship). Observing instruction and play in classrooms, in the

school's barnyard, on the school's local history-themed playground, and in the stream adopted by the school (the latter four are part of the school's 5-acre Environmental Education Laboratory) was invaluable to my understanding of Crellin's connective threads and the embeddedness of instruction within the larger aims inherent in place-based education. By design, the whole at Crellin is far greater than the sum of its parts within the place-based strategy—a point made throughout the interviews and confirmed in my interpretation of the data. Cognizance of such connective threads is imperative as I note the overlap in the data presented as tied to each evaluation question. Chapter 5 offers recommendations and discussion based on the findings, while also pointing out limitations.

Evaluation Question #1: What are Crellin Elementary School teachers', administrators', and community partners' perceptions and working definitions of place-based education?

The principal and teachers present when place-based education took root at Crellin admitted that they, for approximately the first two years of the strategy, were wholly unaware of place-based education as a descriptor for their approach. The lack of initial place-based education awareness is discussed further in the Evaluation Question #2 heading and later within the current heading. Notable is that—consistent with the predictions of the principal and a long-time teacher as I began the interview process—interviewees, both instructional staff and community partners, were not necessarily accustomed to using the place-based education term as a descriptor for the “Crellin Way.” However, a chart showing familiarity with the term by category (e.g. length of tenure and/or role at Crellin) would lack validity as some interviewees discussed

interview questions with each other prior to the process's completion and over half of the interviewees requested contextual information and/or a place-based education definition prior to the recorded interview. Several interviews, due to time and space constraints, were not in private settings, and non-interviewees (usually other teachers) at times, offered thoughts during interviews in which they happened upon—often offering information that buttressed their own interviews responses while eliciting helpful comments from their peers. Overall, it appears that just-mentioned level of informality led to more meaningful data, but at the expense of a precise breakdown of interviewees' perceptions of or familiarity with the place-based education term. Without exception every interviewee was consistent in describing either place-based education or the "Crellin Way", but, there was a marked level of variance of interviewees' use of the place-based term as primary descriptor for the education strategy at Crellin.

Table 2 (below) offers representative interviewee responses when discussing their perceptions and/or working definition of place-based education.

Table 2

*Selected Interviewee Quotes re: Perceptions of Place-based Education**Working Definition*

Interviewee	Significant Excerpts
Principal	“We have broken down the walls between the school and community.”
Teacher	“It’s been a unification not just of the staff but also the community. The community is a big, big part of our school. They get excited...they want to help...I mean, the whole playground was built in three days. It’s amazing to see that many people come in and do what they know how to do and put things together.”
Teacher	“And so, when you do a place-based education and you are doing so many hands-on things, which a lot of kids, especially these young are hands-on learners, but I think we try to give a variety of learning styles, learning strategies. And we try to show it to them so many different ways in every subject that it comes across.”
Teacher	“They [those seeking to understand place-based education] [have] got to throw their whole ideas out. It's not just about getting through the book anymore. It's about everything I've said, it's about teamwork, flexibility, what's best for the kids, what do the kids need in order to get from step A to step B, what do they need? It is not about what makes it easier for the teacher.
Community Partner	“I would say its [place-based education] a metaphor people probably use but they just open a school up.
Community Partner	“They just opened the school up to people and ideas.”
Community Partner	“But I’ve never seen any school that had this kind of motivation... We usually refer to it as project based learning.”

In her 13th year at Crellin, the principal is comfortable with the place-based description of the strategy at her school, and she notes her relationship with David Sobel, an often-cited advocate for place-based education who has visited and written about Crellin as a model of place-based education (e.g. 2011), and participated in presentations

and discussions with Crellin stakeholders at various forums across the country. Importantly, a community partner involved with Crellin since the principal's arrival noted her familiarity with place-based education literature—specifically several books by David Sobel—during the time she worked with the Crellin staff at the strategy's inception. Unequivocally, though, data from the interviews indicates that the principal's "organic"—meaning that the strategy developed from within as a response to local conditions—term for the strategy's origins at Crellin is accurate. The ensuing discussion synthesizes responses from teachers, administration (i.e. principal), and community partners, while acknowledging, especially in the "Teachers" heading, the overlap with other categories, reflective of the intertwined roles of teachers and community partners, and the long-standing contributions to instruction by community partners at Crellin.

Teachers. As several teachers and community partners noted, the technical and/or instructionally rooted nomenclature for describing the "Crellin way" shifts, adapting to terms with which outside educators, evaluators, and funders can identify. As one teacher said, observers coming to Crellin to learn from its success might, for example, be familiar with project-based learning, or possibly, problem-based learning. Crellin's staff is comfortable using such terms, with the emphatic (in the case of all interviews) caveat that local context and local problems and possibilities are drivers of instructional strategies, and that larger themes of reciprocal caring and community building undergird place-based education at Crellin. This is described further in the "Principal." subheading below. A thread of mild frustration in several interviews and follow up conversations emerged as Crellin's teachers discussed outsiders' attempts at

understanding Crellin's success by framing the "Crellin way" in instructional terms while largely dismissing the importance of relationships, school culture, and committed leadership.

Of the thirteen interviews, only Crellin's principal, two teachers with long tenures at Crellin (over a decade in each case) and a community partner with an outside (he/she spearheaded a partnering organization's substantial early investment of resources toward the strategy) role in bringing place-based education research and practice to Crellin appeared wholly familiar with the place-based education as *the* descriptor of Crellin's education strategy while, simultaneously highly conversant in larger national conversations about place-based education. However, for the interviewees whose memories were not jogged by the term initially, several returned to the place-based moniker at later points in the interview and/or in follow-up conversations; these subsequent interactions indicated clear familiarity with the tenets of place-based education by every interviewee. All interviewees described Crellin's learning environment, instruction, and school culture with consistent verbiage, with terms including "inquiry-based learning", "problem based learning" "project based learning" and related descriptions often substituting for the place-based moniker—especially when describing instructional components of the strategy. All interviewees agreed that instructional strategies alone were only one of many components of the "Crellin way", or place-based education.

Administrators. Dana McCauley, Crellin's principal, discussed the place-based label at length, offering anecdotes of place-based education as the best way to describe the strategy. "You have to see it in action," she told me several times. McCauley noted

Crellin's fidelity to place-based tenets and the importance of school culture and community ties as drivers of the strategy. I did not seek out other administrators within the district for interviews, based largely on Crellin's relative geographic isolation and its autonomy in carrying out the place-based strategy. Further, I encountered no evidence that the district's administrators or schools aside from Crellin have a sustained interest in place-based education or in replicating Crellin's place-based strategy.

Below, McCauley's responses are synthesized, many of which are equally applicable to Evaluation Questions #2 and #3.

- McCauley notes that she regularly encounters educators looking to duplicate Crellin's success by using what they (the other educators) know as project based learning at their schools. Such efforts, she believes, largely fail. "Place-based is not project based in a box", she said, adding, "Using the local context is the hard and the important part." McCauley noted that those seeking a "paint by numbers" formula for place-based education will be "disappointed".
- McCauley—consistent with Powers (2004) and Theobald (1997; 2006) emphasized that place-based education at Crellin came about, largely, because it "worked" and engaged students. "We didn't even know that we were doing it. That's what someone told us. 'You're doing place-based education'... We only do it because the kids were interested and they were producing and they were engaged and the community liked all that stuff," she added.
- McCauley, who holds a doctorate degree in education and has traveled nationally and internationally accepting recognition on behalf of the school

while disseminating its strategy, is cognizant of available place-based education research. She asserts (consistent with Powers, 2004 and the majority of those that I interviewed) that place-based education is especially powerful in engaging traditionally hard-to-engage students, including special education students—even though this has not been confirmed via peer-reviewed studies or in program evaluations. She described repeated examples of “problem” or “squirrely” children who began to “perform” once in their “element” (often the outdoors or in hands-on activities). McCauley joined several teachers, and community partners in noting that place-based education “makes leaders” out of students who are otherwise disengaged in the regular classroom. “I’ve seen these patterns over and over,” she said, while pointing to test scores and success stories of students who transferred to Crellin after trouble at other schools as evidence to confirm her observations.

- McCauley, perhaps most importantly from my synthesis of our conversations, emphasized that the human elements inherent within effective place-based education are the ultimate drivers of the strategy’s success at Crellin, and of her perceptions when presented with the place-based term. For example, she emphasized the “paramount” role of selecting and empowering great teachers, noting that her role is to “give them permission” to succeed, while she is “taking care of the politics.” McCauley, provided dozens of accounts of how tending to student, faculty, staff, and the broader community’s emotional and material (poverty is pervasive within the school and community) needs being

met is the linchpin of the strategy's success. An interview excerpt underscores this point:

Can't fool a child, they know when you really care. And they see us do that with each other...They see us have each other's back and do all that and they hear certain conversations or see things that happen and that's good for them to see that, that it's not just a rule for them. They see us get excited; they see us get emotional over things. You know, when [name of teacher's grandson died], [they] saw me when I walked in with tears coming down because my heart ached for [name of teacher]. Her first grandson passed away, and so when I walked in and they knew right away, can tell by your face something's wrong. Doesn't look good and I cried and I told them and their hearts broke, you know, and it was okay to be emotional and feel.

Community Partners. The findings reported in the above “Teachers” subheading apply largely to the community partners section, as well. Two of the five community partners interviewed—both with over a decade partnering with the school—expressed a working knowledge of the place-based education term. Being presented with the place-based term led to the broader discussion and commentary about Crellin and yielded several comparisons to other elementary schools.

Several community partners with vast experience in elementary level science education noted the level of “motivation” in Crellin’s students in comparison to prevailing norms in the region where instruction is “traditional” and “textbook-driven. They attributed the “Crellin way” (e.g. place-based education) as the driver for such motivation. Several community partners lamented that instruction at other schools they

have worked with is focused on “covering” state standards, at the expense of in-depth learning while adding that Crellin’s instructional approach leads to better performance on tests. Crellin’s openness of discovery and inquiry and willingness to embrace technology, they note, creates an excellent learning environment for not only students, but also for pre-service educators. Another community partner, well-versed in education research, noted that he/she refers to Crellin’s strategy as “project based learning” but was quick to point out the importance local context for developing projects, singling out Crellin’s Environmental Education Laboratory and long record of involving the community in projects ranging from playground construction to oral history projects.

Discussion of place-based education and the “Crellin way” prompted one of the community partners to laud the school’s inherent focus on inquiry (or “thinking like a scientist” as teachers often remind the students), including an encouragement of “I wonder” questions which allow children to ask broad questions (i.e. Why do we have dirt?) and then devote educational resources to answering such questions. Importantly, at least four interviewees noted, the spirit of inquiry and asking questions extends to the teachers and community partners, who often have to seek out answers to student questions. One community partner noted a familiarity with the place-based term, but added that [s]he was more comfortable with describing the school than in using the place-based moniker:

I would say its [place-based education] a metaphor people probably use but they just open a school up. And so, the school is very open to, not only different people coming in, but different ideas being presented, and part of the big draws that they try and get people in the community here. They have a historian come,

and parents. They have very involved parents that come and teach things to the kids. And so, it's very open receptive school to different ideas and people coming in and sharing what they know with the kids.

Of the five community partners interviewees, none resided the school's boundaries or within the larger school district boundaries. As expressed regularly throughout the interviews, "place" and "community" at Crellin are as tied to the local ecosystem, governmental and non-governmental regional organizations, and interested individuals (community partners) and institutions such as colleges in the region as to the immediate neighborhood—though such ties do not negate the importance of the school's immediate surroundings. Several interviewees said that outsiders sometimes underestimate the scope of "place" at Crellin, with one interviewee describing the faculty and especially the principal's "long reach" of relationships across the region. One interviewee described a wide "web" of relationships across the region, with the web centered at the school.

Ultimately, teachers, the principal, and community partners offered remarkably similar descriptions and perceptions in describing the educational strategy at Crellin. However, the use of the place-based moniker varied widely among participants, and it was clear that the "Crellin Way" term was used most often by interviewees to describe the school's workings.

Evaluation Question #2: What are and were the key elements in implementing and maintaining the place-based instructional strategy at Crellin Elementary School?

Those present during the emergence of place-based education at Crellin, circa 2002-3003, recall “organic” (a term used by the principal) events, occurring largely out of necessity (the status quo was failing) coupled with the arrival of the still-serving principal, who ushered openness toward new instructional and community engagement strategies in an effort to turn around the school. This section discusses the interwoven key elements in implementing and maintaining the place-based education strategy at Crellin. Identification of these key elements emerged from coding of the interviews and from analysis of field notes that chronicled largely informal follow-up conversations to interviews. Though the below-identified elements are largely applicable in both categories (implementing and maintaining), the implementing heading emphasizes history and the importance of starting slowly. The maintaining heading discusses leadership, a global focus, school culture, appreciation, encouragement of failure, attention to emotional needs, and finding a niche for all community partners and parents, as drivers of the place-based strategy, though large portions of findings reported in evaluation questions #1 and #2 are also applicable, at least in part.

Implementing. The principal, teachers, and community partner present at the strategy’s implementation discussed the importance of chronicling the place-based strategy’s history (implementation) for all stakeholders, including current teachers and students, as a condition for understanding the place-based education strategy.

Interviewees responsible for the strategy’s origins at Crellin combined their advice about

starting slowly with other interviewees who offered the “start slowly” advice to their peers who might be interested learning from Crellin’s experience with place-based education.

History. One teacher said, “So we need to go back and teach them everything about the original history. So as teachers, your challenge is you keep wanting to move forward. But you have to go back and let them understand why you are doing what you're doing.” When asked to clarify her remarks, the teacher noted that “teaching the history” applies both to the place-based education strategy’s history, and to the community’s history, which is intertwined. Crellin’s award-winning student-designed playground, based on local history themes and constructed by volunteer labor from the community is representative of the ongoing commitment to local history at Crellin. The playground’s construction, according to three interviewees, was a catalyst for the “snowballing” (a term used often by those describing place-based education’s implementation) the community’s engagement at Crellin. When I visited the school for data collection, teachers were reading a student-written book about the playground to students who had been transferred to Crellin from another school within the district.

If gauged by test scores, facility condition, and school environment, Crellin, prior to the place-based strategy taking hold, had hit “bottom”, as one interviewee described. Sobel (2011) wrote, “There wasn’t a lot of hope at [Crellin]” in the early 2000s. A teacher who began at the school in the 1990s and is one of several interviewees who taught at the Crellin prior to the current principal’s arrival, echoed Sobel’s point, describing the school’s lack of achievement, low expectations and history of a detached community, especially in the late 1990s and early 2000s:

It [the school] was a dump inside and outside... The children had a terrible reputation because, you know, out in here, there [pointing to the environmental learning laboratory] were vagrants... [it was] nothing to find condoms out here and litter and so they didn't take care of it outside. Inside, they didn't expect anything, so the year before I came here, kids received zeroes on their testing. Most of them received zeroes, so when I got hired, four teachers left the building.

Another teacher with a long history at the school added that her children (now grown) were affected by the remnants of coal production at Crellin when they attended the school. "I would put milk-white tights on my daughter, and she'd come home black. And I learned right away no dresses, no tights", she said, before discussing the transformation of the once-tainted area into the much-recognized Environmental Learning Lab.

Two teachers reported that a principal who lasted only a year at the school—immediately preceding the current principal—did take steps in faculty empowerment, hiring new faculty, and promoting culture change that did help to boost test scores and improve the school overall. However, the arrival of the current principal expedited the turnaround and established a culture that did not rest on laurels with incremental academic improvement. According to all teachers (among this study's participants) at Crellin prior to the current principal's takeover, a major shift brought forth by the new principal was an emphasis on intrinsic motivation in learning and a focus on citizenship within the school and community, ushering out a focus on test scores and external rewards for academic achievement, as was the prevailing norm in the school prior. Evaluation question #3 provides additional details on this topic.

A student question in a grant-funded summer science camp in 2003 led to a turn of events—as multiple external (e.g. Sobel, 2011; Wheeler, 2011) and internal accounts confirm—that were a catalyst for what now constitutes the physical and instructional manifestation of the place-based strategy at Crellin—the Environmental Education Laboratory. Sobel (2011) described it:

During a walk behind the school, students discovered tinted water seeping into nearby Snowy Creek and one asked, “*Why is that water orange?*” Taking the question seriously, teacher [name redacted] went to the principal and the principal sought help from the Department of Natural Resources and the Canaan Valley Institute. They discovered that the six acres between the school and the creek had been a coal tailings dump during the early 20th century and that the orange water was acid mine drainage—water that was absorbing acids from the coal waste that was then polluting the Snowy Creek. The [Crellin] staff realized that something needed to be done and that the doing could possibly make for valuable curriculum. That initial question reverberated throughout the community, county, and state as residents, volunteers, and agencies got on board and garnered over \$150,000 in funds and over 1000 volunteer hours to do much more than abate the acid mine drainage that was flowing into Snowy Creek. The Corps, as it became known, was an association of students, teachers, community members, nonprofits, and state and federal agencies committed to protecting the natural resources of Crellin and engaging students in meaningful learning opportunities. (pp. 5-6)

Start slowly (and mistakes are okay). Several teachers representing the spectrum of tenure lengths at the school noted the school culture’s openness to mistakes and

encouragement of small-scale (and sometimes larger-scale) experimentation as a precursor to widespread adaptation of place-based practices (whether instructional or broader) at the school. The principal repeatedly called ideas that didn't work "learning opportunities" during a conversation (doubling as part of an interview) with a long-time teacher, in which she (the principal) noted her coaxing of experimentation from the teaching staff:

I think what they needed permission to do. I think they were already good teachers; they just needed permission and support from the person who sits in the office to do things differently and permission to go outside the box and permission to make mistakes.

In response to the above quote from the principal, a long-time teacher noted, "And not necessarily permission [to make mistakes], but encouragement!"

A long-time community partner with experience at multiple schools offered advice for implementing and maintaining place-based education, noting that she observed teachers (external) visiting Crellin, only to return to their classrooms "overwhelmed" and "not knowing where to start". This community partner added that community partners are far more than "guest speakers" and that integrating them "takes time". Ultimately, she suggests, starting with "one changeable product" and building from that there. Another long-time teacher echoed this point, adding her advice for those seeking to implement a program akin to Crellin's place-based strategy:

We didn't do this all in one year. Every year there's been something new added. And we never stopped, it's like, you have success here, but you don't rest on your laurels too long until you start thinking about, 'Okay, let's do this stuff'.

Maintaining. In order to accommodate stakeholder concerns that the interview protocol (teacher and community partner) wasn't broad enough to capture the place-based strategy's holistic nature, I added a final question to the protocol asking interviewees how to "bottle Crellin" for colleagues from other schools seeking to replicate the "Crellin way". Or, alternatively (dependent on situation and the interviewee), I would ask how they would export and/or explain the "Crellin Way" to other schools if hired as a consultant to do so. This question yielded responses (synthesized below) that informed subsequent questioning and opened broader conversation about why place-based education, in the interviewees' perception and collective experience, appears difficult to export. Below, the key findings are synthesized. Though most applicable to discussions of maintaining the place-based education strategy, the findings below also apply to the strategy's implementation and to portions of evaluation questions #1 and #2.

Table 3 (at the end of this section) synthesizes classroom teachers' and the principal's citations of the below-identified themes as key to the place-based strategy's maintenance at Crellin. The subsequent Table 4 shows the community partner interviewees responses to the same themes. The N/A category represents that interview questions did not address the topic. However, the principal repeatedly noted the importance of teacher leadership in the place-based strategy; all other interviewees noted the principal's leadership as critical.

Leadership matters. Every interviewee, except for the principal (who noted the importance of teacher leadership and empowered teachers) cited the principal’s leadership and the ensuing school culture as paramount to the strategy’s success and/or ongoing renewal. Several members of the instructional staff described leadership at Crellin in comparison to other schools where they had worked. In describing the differences, terms including “empowered”, “appreciated” “trust” and “kids [are at] the heart of every decision [at Crellin]” were common when describing key aspects of Crellin in comparison to other schools.

Global focus. Though paradoxical, a global focus, both in terms of ecological awareness and broader engagement (socially and scientifically) permeates the place-based strategy at Crellin. Crellin’s global focus aligns with place-based literature noting that 1) grounding learning in the local provides valuable context for broader inquiry and 2) place-based education imparts a sense of responsibility and community that ameliorates disconnection common (e.g. low voting rates, lack of civic involvement) in America (Sobel, 2005; Smith, 2013; Theobald, 1997). The global focus, or perspective, at Crellin extends across subject areas, reflective of the school’s interdisciplinary approach. Several examples:

* A community partner described working with students in building a model (to scale) solar system as a counter to textbook models of the solar system that distort the size of the planets and sun.

I was really impressed with how many kids really wanted to know something about the space program. Yeah, huge number... We actually

created a solar system in the classroom to scale, and that was kind of interesting, because if you really look at how much space, literally, space, there is in the solar system and how little content there is--so we made the sun to scale, which is like a BB in that classroom, and of course the planets were infinitesimal.

* A community partner and avid birder allows the students to assist in bird banding, which leads to lessons about data collection, habitat, migration, and related topics. On a related note, the school's butterfly garden hosts a large collection of native plants. The students study butterfly migration routes and the ensuing lessons cover geography, ecology, and civics.

* Crellin has a relatively new emphasis on the study of food—especially local food production via eggs hatched by Crellin's chickens and produce from the school's vegetable garden. During one of my visits to the school, students were eating broccoli and eggplant from the school garden, fresh locally-grown strawberries, and baked goods made with eggs hatched from the chickens roaming outside. Another time, students were mapping their lunchroom food, showing the hundreds and sometimes thousand plus mile journeys that their food took to reach them. On my final day at the school, students were meeting two goats, delivered by high school students who had attended Crellin. Earlier, the principal had reminded me that it is important for students to understand that meat “comes from somewhere...other than McDonalds”.

* Crellin students have a well-documented interest in the reclaimed stream that runs through the Environmental Education Laboratory. But students are also taught

about watersheds and the impact of local conservation best practices (or pollution) downstream. To emphasize this, students traveled 300 miles in a school bus to spend several nights at an island in the Chesapeake Bay, viewing firsthand the connections between their stream and America's largest estuary, all while collecting data while learning about Smith Island's culture.

School culture. A community partner interviewee with a long history in the private sector called me the day after his interview, offering follow-up information. He/she was especially interested in pinpointing what, in his/her estimation makes Crellin different or "special" (a term used several times in the initial interview). Ultimately, this interviewee offered a wide-ranging description of Crellin's culture, comparing it to Toyota's (the automaker) commitment to quality, which he/she had studied in a previous capacity. Several specifics in the comparison touched on pervasive respect at the school with examples including:

- Absolute respect for the time of volunteers (community partners)
- No time wasted at the school (a theme noted by 5 interviewees)
- Respect (from adults) for students, which empowers students and leads to excellent (and inquisitive) behavior
- Elimination (by leadership) of policies and procedures that are ineffective or wasteful
- Respect by the CEO (principal) of employees, who are, in turn, loyal
- An emphasis on long-term growth over immediate profit, which at Crellin translates to a focus on character and meaningful learning in lieu of laser-like focus on test scores

Another portion of the school culture description relates to ownership, a theme noted in a majority of the interviews. For teachers, ownership themes harkened to their empowerment to experiment and bring forth new ideas. For community partners, ownership connoted their ability to bring their experiences to classrooms without the constraints of fitting narrow confines of curriculum (discussed in evaluation question #3). For students, ownership and accompanying responsibility (a theme noted repeatedly when interviewees discussed students at Crellin) often ties to substantial student responsibilities for caretaking and data collection at the school's barnyard and Environmental Education Laboratory. As a teacher described, "They [students] feel like they have ownership in the garden, and the farm, and the river, and everything around them..." Students, for example, have daily egg collection, manure scooping, and other animal husbandry and garden-related duties.

Appreciation. Coding the interviews pointed out "appreciation" as a word repeated in half of the interviews (more if counting follow-up informal conversations and synonyms for appreciation). Each time, appreciation was given as a reason for the interviewees' motivation to support Crellin's place-based strategy. The term and themes were equally prominent among community partners and instructional staff. One community partner explained why he/she chooses to share his/her talent at Crellin instead of other institutions or schools.

And that's really, I guess, the feel as you walk into Crellin and things are being taken care of. If you do something, you get a thank you. You offer to do something, they take you up on it, and if it's not something that fits perfectly for them, they'll find a way to still keep you engaged to make something work out for

the kids. It takes quite a bit of time to put together the little bit of stuff I do for the kids...you end up spending a fair amount of your time doing it but you don't feel like you're wasting your time because you know that it's appreciated, and you know that the kids are going to get something out of it, and so I think it's just a very simple aspect that if I felt like I was wasting my time, I wouldn't be back.

While the above community partner quote is wholly representative of sentiments repeatedly noted in interviews, another interviewee was more succinct. After her interview, she came back to me, offering “the most important thing” that she had omitted. “Every day,” she told me, “someone says ‘thank you’, either the kids or staff, and I’ve never had that anywhere else I’ve worked,” she concluded.

Failure encouraged. The principal and teachers all expressed themes that they felt free to experiment at the school, with failure (or non-success, as one called it) viewed as learning opportunity. The philosophy appeared to bubble down to students, who, during my observation and as noted by teachers and especially community partners in interviews, appeared accustomed to viewing non-successes in data collection, for example, as part of the scientific process. Not surprisingly, perhaps, Crellin’s principal and teachers repeatedly reminded students to “Think like a scientist” dozens of times throughout my time at the school. More importantly, the principal shared with me the importance of a school-wide emphasis on inquiry, of which, failure and learning from failure is a cornerstone.

Emotional needs of students, staff, and community are paramount. Though discussed in the Evaluation question #1 heading, the focus on emotional needs is also

noted here because of its importance as noted by all interviewees. The interviews uncovered an unwritten, but often-repeated mantra at Crellin that tending to emotional (and in some cases material) needs of the Crellin family undergirds the place-based strategy. The ensuing quote from an interviewee represents sentiments expressed in nearly every interview with school staff: “You know what? These tests be damned. We're going to do something for these kids first. We're going to make sure that they're emotionally ready to learn”. The school’s approach to testing is described further in Evaluation question #3. Meeting the basic material needs of students, as a prerequisite for meeting emotional needs, was an ongoing theme throughout the data collection. Providing food for hungry students or families, buying shoes for a needy student, and providing rides for students without transportation are samples of activities endemic to Crellin’s faculty and staff.

Finding a niche for all community partners and parents. All data sources provided examples of community partners with a wide range of education levels contributing to Crellin—a point McCauley and several other interviewees with long-held ties to Crellin emphasized in dozens of conversations. While the community partners interviewed for this project were white-collar professionals, the school is successful at building alliances with Crellin’s largely blue-collar residents. Photos and news articles pasted Crellin’s walls provide one data point. A photographic tribute to the school’s barnyard building included pictures of overall-clad local farmers and members of the local Amish community pitching in to complete the barnyard.

A community partner and the principal noted that a high percentage of parents and local community members have negative connotations when recalling their own

experiences with schools. To combat this, the school offers hands-on activities designed especially to engage parents (often fathers), many who have valuable skill sets (i.e. carpentry and horticulture), but who are disinclined to participate in more traditional PTA meetings and similar activities. After recounting a long list of examples of creative ways that the principal and staff have engaged the community, a community partner recalled grandmothers in the stream collecting macro invertebrates and other (previously disengaged) community members enlisted to build compost bins. The principal, reports a community partner, is “strategic” in tapping the strengths of the community for projects, which builds their allegiance to the school. The result is that crowds test the school’s capacity at back to school night and related events.

Ultimately, data indicated that implementing place-based education at Crellin was spurred by a confluence of three primary forces: 1) An unacceptable status quo; 2) eagerness to adopt community-building and instructional strategies that appeared successful; and 3) a student question about “orange water” that did, according to remarkably consistent accounts in the interviews for this study and in external accounts (Sobel, 2011; Wheeler, 2011) spur a massive environmental reclamation and remediation effort. These forces combined to “snowball” (a term used frequently by interviewers in describing the place-based strategy’s trajectory) in to what is a current place-based strategy that is subject to continual tweaking, based on stakeholder input, student responsiveness, and local conditions. Maintaining the place-based strategy at Crellin is largely dependent on relationships, both within the school, and between the school and broader community.

Table 3

*Classroom Teachers' and Principal's Identification of Selected Key Themes in
Implementation and Maintenance of Place Based Strategy*

	Start Slowly / Risk Okay	Leadership	Flexibility	Global Perspective	Appreciation	School Culture / Emotional Needs
Teacher A	X	X	X	N/A	X	X
Teacher B	X	X	X	N/A	X	X
Teacher C	X	X	X	X	X	X
Teacher D	X	X	X	X	X	X
Teacher E	N/A	X	X	X	X	X
Teacher F	X	X	X	X	X	X
Principal	X	N/A	X	X	X	X

Table 4

Community Partners' Identification of Selected Key Themes in Implementation and Maintenance of Place Based Strategy

	Start Slowly / Risk Okay	Leadership	Global Perspective	Start Slowly / Risk Okay	Appreciation	School Culture / Emotional Needs
Partner A	X	X	X	X	X	X
Partner B	X	X	X	X	X	X
Partner C	X	X	X	X	X	X
Partner D	X	X	X	X	X	X
Partner E	X	X	X	X	X	X

Evaluation Question #3 What instructional aspects of the place-based education strategy at Crellin Elementary School are most important to its success?

This section focuses on instruction, and large portions of the findings from Evaluation Questions #1 and #2 apply to the below findings. Table 5 (below) offers quotes representative of all interviewees' collective responses to instructional-related aspects of the place-based strategy.

Table 5

Representative Instruction-related Interview Quotes

Interview Question	Representative Quotes
Did you receive specialized training in place-based education when beginning your teaching assignment at Crellin?	“No, there’s no orientation. It was more like I was coming here to do something specific. And so, I just went and delivered. I had never even heard of a place-based education. I don’t think.” (community partner of 10+ years)
How do you go about planning lessons?	“Well, I do think of getting outside. I do make a conscious effort, like, if you're teaching adjectives, why can we not go outside and find the adjectives? But let's go outside and let's just start getting some rich vocabulary...Kids love to be outside. I mean, 95 percent of them.” (teacher)
What are the key elements of instruction?	“I've had many principals [say] ‘You need to do this, this, this, this, this, this, this, and teach,’ where Dana [Crellin’s principal] keeps everything away from us -- all of the politics...so that we can concentrate on what's actually important.” (teacher)
How do you assess student learning?	<p data-bbox="764 1178 1312 1346">“Well, we hate weighing the pig, I can tell you that. We have to weigh the pig, but we hate weighing the pig. Absolutely detest it. We make it our business to know our students, so yesterday, I'm assessing 24/7. 24/7.” (teacher)</p> <p data-bbox="764 1381 1305 1575">“But I assess the whole child: who's getting along, who isn't getting along, who is the isolate, who isn't the isolate. Who is helpful, who bails. Who sticks with the task, who doesn't stick with the task? Because later on, I have to build those.” (teacher)</p>

Interdisciplinary. Interviews—especially of the instructional staff, but also of several community partners—noted the importance of interdisciplinary instruction at Crellin, which is pervasive, and noted in Crellin’s School Improvement Plan (2013).

Several teachers said that crossing disciplinary boundaries is “part of” the “Crellin way” while doing so at other schools where they had worked rarely happened. One teacher noted that, by design, faculty and community partners sometimes “forget” which subject they are teaching and the breadth required of problem based learning rooted in the local environment lends itself to crossing disciplinary boundaries. Crossing disciplinary boundaries is core to place-based tenets, but the rigidity of modern school scheduling combined with teacher specialization thwarts interdisciplinary instruction, and is a primary barrier to place-based instruction (Theobald, 1997). At Crellin however, “flexibility” was a word appearing often in coding, referring to the school’s—especially the principal’s—willingness to change schedules to accommodate events and opportunities. For example, a local conservation biologist sometimes stops by the school with a tranquilized bear in the back of his truck. Such an event, according to the principal, constitutes a learning activity, and schedules are adjusted accordingly, as the biologist takes an opportunity to discuss bear conservation and habitat with the students. At Crellin, one teacher said, non-flexible teachers “won’t last”. Crellin’s interdisciplinary nature appears to feed on a flexible culture, and vice versa.

Hands-on. An interviewee offered that he/she has duties at Crellin and at other schools in the district. “At Crellin,” the interviewee said, “I expect to find kids outside”, adding that the presence of outdoor space, especially animals, is tool for reaching students facing emotional issues or other difficulties. The principal noted that instruction occurs outdoors “year round” and she enforces a “no whining” rule for students participating in outdoor activities. Additionally, students are taught not to overreact at the site of wildlife (frequent visitors) on the school’s 5-acre E.E. L. A teacher added, “At

other schools, the only time the children have been outside would be at recess for 30 minutes...here and you want to go learn about animals and life cycle? Well, we're going to walk out to the barn."

One teacher offered that she makes a "conscious effort" to integrate outdoors with planning instruction. For example, she said, if teaching adjectives, "Why not go outside and find the adjectives?" However, as several teachers and the principal offered, hands-on instruction requires a high level of flexibility. One example is eggs. While several grade levels built units around weighing, counting, selling, and even eating the barnyard's eggs, there is "always a possibility" that chickens will escape or not produce eggs because of external conditions. If so, teachers at Crellin, according to the principal, "go with the flow" and find alternative activities (usually outdoors) as circumstances warrant.

Additionally, as a community partner reminded, "hands-on" instruction at Crellin is sometimes classroom-based, but linked to the outdoors. One example is in-classroom aquariums that house trout hatchlings released yearly in the school's stream. I also observed a multi-grade level art project in which students drew activities (e.g. wildlife grazing, hunting, homes under construction, water plants, sewage, etc.) on a large waterway displayed in the gymnasium. Students applied lessons and discussion from their mock stream to the next day's jaunt to the "real" outdoor stream. This allowed instructional staff to relate the indoor lesson not only to ecology, but it also brought forth a vivid discussion of how upstream activities influence downstream commerce and property rights—especially if those upstream "mess it up" as one student said.

Testing philosophy and assessment. A teacher who began and Crellin prior to the current principal's arrival in 2001, noted the change in testing philosophy that took place since the onset of place-based education:

Yes, yes. Every year, they [standardized test scores] got better, but here was the problem: you would think that we would go "test scores are rising" and we would go, "Yay!" Never. Never. If one child was left behind, that bothered us, and the other thing was, we're going to have to do this again. Okay, and the other principal had where if you score, you got to go to this pizza party...and so if you scored, there's this huge reward for you at the end. So they were externally motivated. We had pep assemblies about the testing...it was all external. Where when [name of current principal] came, it was all internal, it's [testing] just another day in school.

The term "informal" was used repeatedly when teachers and other instructional staff discussed their approach to assessment, with assessing the "whole child" another common refrain. One teacher, in a quote representative of a majority of responses to assessment questions, used the term "kid watching" in her description of assessment at Crellin:

...when I'm working with kids, I'm constantly assessing, it's not--I had a professor one time that asked what the definition of assessment was and one student went out and thought she was going to be real smart and she wrote out this big long dictionary thing of assessment, and he said, 'no, it's kid watching'. And it's exactly what it is. When we do our kid watching on a daily basis, we know where

those kids are. When we do the assessments, we're very rarely surprised. Very rarely.

Perhaps the most salient point regarding assessment—made initially by the principal and repeated by both community partners and teachers is that test scores do not drive instruction and that state standards, which drive the school's baseline curriculum are the “minimum”. Over and over, interviewees noted (and seemed to revel in) their freedom to teach “what is important” in lieu of what is tied to standardized tests. One community partner emphasized her appreciation for the lack of test score focus, especially in comparison to other schools where he/she worked, where concern over test scores narrowed curriculum and instructional focus.

You never hear them talking about the test here. Really. It's not why they do stuff. They do it because it enriches the student's learning experience or their lives. It's teaching them the life lesson. She'll take 10 minutes to show them how to pronounce “sunscreen” because they don't know all that stuff that does not have a curriculum standard with them. But it's still important information. So, I think you need a strong leader who's willing to let teachers teach.

Leaving no child behind. Though an interviewee stated that the *No Child Left Behind* mantra has become “clichéd” in public education vernacular, the same interviewee noted that the phrase “truly” applies to Crellin. The principal described weekly staff meetings in which the entire faculty and principal discuss every student. Doing so allows all teachers to stay abreast of particular challenges or praise-worthy events in students' lives, and to work seamlessly to in assisting students. One

interviewee explained the school's approach, emphasizing the role of special service areas (e.g. reading specialists, art teachers, etc.) in working with classroom teachers.

...they really look at a kid's strengths and weaknesses, and they work as a team on what's best for that kid. Say a kid is in 3rd grade, and [name of third grade teacher] is struggling with the kid and how to help them, then somebody else in the school wants to step up and help [name of teacher] and help that kid...In bigger schools especially, there is no time for other people to step in and help. It's the classroom teacher, and if the classroom teacher can't do it, then that kid suffers.

As Crellin's staff described what leaving no child behind at Crellin means in practice, it became apparent that the confluence of several factors including the collective long tenure of staff, the staff and principal's own children's ties to the school, and the staff and principal's deep community ties contribute to an atmosphere of collective responsibility for and knowledge of each pupil's needs—academic and affective. Leaving no child behind at Crellin refers to meeting a wide range of student needs, academic and beyond.

Project based and/or problem based learning. An ongoing thread of discussion—especially in Evaluation Question #1 involves the use of problem based and/or project based learning as a descriptor for the Crellin's instructional approach. A synthesis of interview responses coupled with observation of instruction confirms the applicability of the Buck Institute for Education's (n.d.) (a non-profit that promotes project based learning) definition of project based learning to Crellin, with the caveat that local context and relationships undergird the broader place-based strategy at Crellin.

Components of the Buck Institute's problem based learning definition include a focus on in depth inquiry, empowered students, and a public audience for student work—all of which permeate Crellin's approach to instruction.

Crellin's staff and community partners (and in turn, this program evaluation) use project based learning and problem based learning interchangeably. A discussion of the problem based and project based terms notes the substantial overlap between the terms and their common (rooted in John Dewey's work) origins, but also some subtle differences. The same discussion notes the applicability of place-based education to discussions of problem based and project based education (Larmer, 2014).

Arts are equal and integrated. During my first visit to Crellin, students in music class were making music with unrecognizable "instruments". Later, the principal, music teacher, and other teachers described what I saw as the "Rhythm and Rubbish Band", which the school's promotional materials describe: "Students create and perform music using buckets, trash cans, and "instruments" many would consider to be garbage." Faculty explained that the Rhythm and Rubbish Band serves several purposes, including tying of arts instruction to the school's environmental education emphasis. Also, the use of "what's available" (as one staff member described) is representative of the Appalachian culture's resourcefulness. The Rhythm and Rubbish band has regular gigs at community events, and it headlined a national Old Time Fiddlers convention in October, 2014.

A special service area teacher (e.g. visual art, physical education, etc) described how Crellin "truly" integrates and values arts, "incorporating everything that we do [arts teachers] between the classroom teachers and arts teachers. The teacher, who has years

of experience at schools other than Crellin, noted that “cooperation” at Crellin drives the arts integration, adding that support from the principal, faculty, and community undergird a robust arts program at the school.

Food and agriculture. Also discussed in Evaluation Question #2, tying instruction to food and agriculture permeates much of Crellin’s instruction, even at early grade levels. A lower-grade level teacher noted that much of the impetus behind the school’s barnyard (complete with cattle, goats, sheep, chickens, and with more animals on the way) was that she desired a learning “hook” for younger students, especially since older students had their niche at the stream. “Every little kid loves farm animals”, the teacher noted, as another added, “They fight over who gets to scoop the manure”.

The agriculture focus is a way to bring students “full circle” at Crellin, as the principal and two teachers noted. A teacher with deep family roots in Crellin and the surrounding areas called agriculture a binder of local heritage (which generates interest in the school) and an excellent way to teach science, which aligns with Lewicki’s (2010) reminder that local agriculture was a driver of science education in early 20th century American schools. The same teacher added that agriculture, as practiced at Crellin, is a tool to combat “obliviousness” to nature caused by modern lifestyles coupled with fear of the outdoors and over-reliance on video games. The same teacher also noted that cooking offers an excellent way to teach math and science.

When you think of canning, our mothers long ago would can things or how they would wash their laundry and the chemistry that was involved in all that and the science in canning and the boiling points and how they knew. I mean when it’s just fascinating.

Administrative support. A salient and emphatic theme from all interviewees (sans the principal, who noted that she “unleashed” great teachers) was the paramount role the principal in carrying out and modeling the place-based instructional and larger community engagement strategy at Crellin. Also notable, as confirmed throughout my observation at the school, is the principal’s role not only in school leadership, but also in instruction. Examples:

- The principal is responsible for a part-time teaching role due to the school’s small size, but she is a regular presence throughout the day in all classrooms. “She’s here so often, students forget she is in here [the classroom], one teacher said.
- Two community partners mentioned the principal’s skill in easing them in to instructional roles by her presence in classrooms or her attention to students prone to difficulty while a community partner “got the feel” for instruction.
- The principal is especially present outdoors, sharing her enthusiasm for data collection and physical activity with the students, often acting as a “connector” (a word used by one teacher) between the school’s faculty, students, community partners, and regular external observers.

Integrating with community partners. A community partner who volunteers at the school weekly while spending “many” additional hours preparing for work at the school, said, “Crellin is a black hole; once you get involved, it just pulls you in deeper and deeper.” Wheeler (2011) described how the principal marshals local and regional resources at talent to support the school in ambitious and meaningful projects, a talent that every community partner cited as crucial to the school’s success.

A key point—especially when considering that community partners regularly deliver instruction—is that teachers work in tandem with community partners and the principal to make instruction delivered by community partners grade-level appropriate and, to a lesser extent, connected to curriculum (i.e. state standards). Community partners and teachers were unanimous in pointing out that a community partner’s presence in a classroom is *not* an opportunity for the teacher to have a break or a planning period. One community partner described her role, using the term “co-teacher”.

With Crellin, it’s just innately was more of a co-teaching situation without really planning it necessarily. When I go in there, like I would be telling something and they would interrupt, but it was a very co-teaching experience. We would stop and we would break down vocabulary words, or we would start making a list of things that we needed to look up later or something like that...I learned a lot about actually how to be a better educator in working with Crellin. It’s been rewarding for me from that standpoint on just how to handle a classroom. I think a lot like place-based and environmental and community-based education has to be integrated into the classroom as well as into the community or into the schoolyard whatever as well.

Snapshot Description of Instruction and Learning Environment

Observation can lead a more complete understanding of a phenomenon (DeWalt & DeWalt, 2002). The below description of connected snapshots of instruction and instructional setting at Crellin are an attempt to tie together elements described in the prior headings. Further, the below observations heed Schorr’s (2012) suggestion that what constitutes evidence in subjects of study with complex and interconnected variables

be broadened beyond boundaries common in conventional program evaluation. The observations highlights mentioned here are drawn from four days of observation at Crellin's summer camp.

Sounds and Senses

Per the observation protocol noted in chapter 3 (National Science Foundation, 1997), I took several strolls alone down Crellin's ¼ mile walking trail which rises above a wetland; the trail, made of recycled water bottles, leads to a stream where the student are often found collecting data. My notes reflected the sounds of deer, many frogs, water flowing, and excited shrieks as students collected eggs in the school's barnyard. Nearby, I saw (student constructed) bat boxes, just across the stream. Completing the loop from the wetland to the stream, and then past several vernal ponds and a large outdoor amphitheater (relics from the coal site reclamation), I noted a number of signposts pointing to native species habitat promotion efforts; other signposts described local history connections. Also closer were the smells and sounds of the school's growing collection of barnyard stock. Sheep bellowed, chickens—some in an enclosure, some roaming—made their presence known, and I could hear students shoveling manure, and recording data (an ever-present activity at Crellin)

Afternoon day 1. Several teachers, the counselor, and the principal (who was in and out of the conversation, as is typical) noted efforts to bring new students “in to the fold” as one had mentioned. When I inquired further, a teacher explained that the school is absorbing about 20 new students in fall 2014—a substantial number for a 100 student school. To integrate these students to the “Crellin way” the principal and several teachers had visited the home of each new student that summer, formally inviting them to the

summer camp. Another teacher had driven a car of books to the home of every student that summer, encouraging reading, and engagement with the school in summer months.

Morning day 2. I accompanied students on a journey to the stream. A community partner, teaming with the principal, the school's secretary, and several teachers, led small groups of students—all wearing hip waders—in to the stream. Once in the stream, the students used a device to collect macro invertebrates, later carefully cataloging the results. The day prior, I had watched as the same students studied water quality while the school's principal and counselor discussed "character" in reference to conservation, offering that "Crellin" students would be stewards of nature. That lesson had incorporated art, as students drew watersheds complete with human activities, later discussing the impact of such activities. Several observations stood out from both days of instruction:

- Students were always empowered. Often reminded they were "scientists", the principal and teachers (who taught in harmony) asked complex questions during instruction. Students were given a chance to provide input throughout activities, including coming up with water/stream safety rules. Disciplinary problems (which were exceedingly rare in my observation) were addressed when the principal or teacher(s) would remind students, "That's not the Crellin way".
- A group of 10 students were in the creek, about knee deep, while about 20 students watched from the shore. A snake appeared in the water, about 5 feet from the group of students. Several students (the ones new to Crellin, I

learned) shrieked. The principal, who was in the water with the students, calmly noted, “That’s a snake,” and then went about the data collection.

- After all students had their turn at data collection in the creek, comments (from students) included, “My underwear’s wet”, “The water feels good”, and “Can we eat these dewberries?” (the answer was 'yes'). Several boys pointed out the whereabouts of the bat houses that they had constructed the year prior.

As the students returned from the river, I discussed the morning’s events a community partner, who had led the lesson. I noted the apparent interchangeability of instructors during the trip to the river and in the lesson the day prior. “That’s true here” she said. Then, I overheard students, apparently new to Crellin, offering their commentary. “This doesn’t seem like school,” I heard one student say. Once inside, the students enjoyed zucchini cookies, baked with ingredients from the school garden and eggs from the chickens roaming nearby.

Debrief. In discussing my observations of instruction with Crellin’s teachers and principal, I addressed critical thinking and curriculum sequence, both in relation to evaluation question #3’s instructional focus. The observed difficulty level of curriculum covered in relation to the students’ grade level—these observations were confirmed in conversations with teachers—led to productive follow-up conversations with instructional staff and community partners. Repeatedly, I saw young students (second graders, for example) taking on complex science concepts that would, in many cases, not be introduced until the middle or high school level at “any other school” according to one community partner with a broad science education background.

Understanding Crellin students' ability to take on high-level science (and other subject area) concepts while still (based on test scores) mastering grade-level appropriate curriculum requires a reminder that Crellin emphasizes the scientific process with minimal (if any) focus on rote memorization and teaching to specific standards, according to teachers, community partners, and the principal. Earlier-described examples of Crellin's use of problem-based learning and related methods (e.g. inquiry-based instruction) also contribute to students exploring of concepts that would be included in grade level standards for middle and high school students. Further, a veteran teacher reminded that nature "presents" learning opportunities that would be "missed" if she were focused solely on meeting grade-level objectives as mandated by the state.

I regularly noted instructors reminding students to "think like scientists" and this often inspired bursts of questions from students while observing phenomena. Only some of the questions were germane to the topic at hand. However, non-germane questions were "parked" for later exploration as "I wonder" questions (described earlier in this chapter). The vast majority of the "I wonder" questions related to gaining of deeper understanding of nature. Ultimately, the cycles and whims of nature at Crellin—whether in butterfly gardens, migrating bird counts, insects in the stream, or trout hatchlings, for a few examples—drive both curriculum and instruction at Crellin. Natural cycles are tied, of course, to seasons. But nature, at Crellin, is also linked to events that are unpredictable. Events such as the creek flooding or the birth of a new goat constitute one-time and place-specific learning opportunities that Crellin capitalizes upon with little apparent regard for curriculum standards. It becomes the job of the teachers to make what is being studied relevant and understandable to the grade level. And the sequence

and scope of curriculum is tied far more to nature and local happenings than to specific standards.

Conclusion

Ultimately, the findings largely aligned with the place-based education literature presented in chapter two while providing several insights (discussed in chapter 5) that add new dimensions to existing place-based literature. At a glance, the findings point to the importance of starting place-based education with small steps, the imperative of supportive school leadership, clear evidence of empowered teachers, and a deep level community partner embeddedness within every aspect of instruction and broader school operation. Also, instruction at Crellin is inherently interdisciplinary, even bringing art, music, and physical education within the place-based strategy's breaking down of curricular, as well as school and community, walls. Building on these findings, Chapter 5 provides a discussion and further analysis, while also offering suggestions for follow-up inquiry at Crellin and within the fledgling field of place-based education research and program evaluation.

CHAPTER 5:

Conclusions

This program evaluation sought an in-depth understanding of the instructional and intertwined broader elements of the place-based education strategy at Crellin Elementary, an award-winning elementary school serving 100 students, in an Appalachian community faced with entrenched poverty. First noting limitations, this chapter then provides a discussion of findings, followed by suggestions for further inquiry, both at Crellin and in broader national conversations about education and community. Both the findings (Chapter 4) and the Review of Literature (Chapter 2), guide the suggestions for further inquiry. Finally, the conclusion offers lessons for defining place-based education and then highlights Paul Theobald's enduring contributions to place-based education literature.

Place-based education is an enigma when juxtaposed against the contemporary American education landscape. Its foundations date several millennia (Theobald, 1997) and the strategy was prevalent in early 20th century American classrooms, when specialization of teachers was rare and local agriculture doubled as a science laboratory (Lewicki, 2010). But the strategy largely disappeared over the course of the 20th century as schools consolidated, education delivery rationalized, and preparing students for global economic demands supplanted Jeffersonian aims once common to the schooling experience (Theobald, 1997).

Despite its long history, place-based education's research base is sparse, and available research is largely qualitative (Smith, 2013). Further, nomenclature

surrounding place-based education varies widely, and educators struggle to describe what practices comprise place-based education, which hinders inquiry (Jennings, Swidler, and Koliba, 2005; Smith, 2013). Available evidence shows place-based education's promise as an antidote to deeply-rooted social and environmental problems while boosting student achievement in even the most challenging schools (Gliner, 2012; Lewicki, 2010; Smith, 2002, Smith, 2013; Theobald, 2006). But in an increasingly intertwined world, embedding student learning in local context appears counterintuitive, especially as trends such as the Common Core aim for consistency in classrooms across the country. Ultimately, this study sought to unwind and understand the place-based education strategy at a school known for its long-time fidelity to and success with place-based education (Gliner, 2012; Sobel, 2011).

Limitations

The limitations noted in chapter 3 addressed my potential biases while adding that the study's parameters limit gauging the community-level impact of the place-based strategy at Crellin Elementary and the surrounding community. The findings—per the norms of case study program evaluations focused on a single site—are applicable only to Crellin Elementary. Later in this chapter the possible applicability of findings to broader discussions of place-based education and national education policy are noted, but the findings at face value apply only to Crellin Elementary.

Another limitation, at least in appearance, is that readers might construe this program evaluation as an exercise in advocacy for place-based education, which is not the intent. Admittedly, the literature review tilts toward authors (e.g. Sobel, Smith, Theobald) who have not only penned foundational place-based education literature, but

who are, clearly, advocates for place-based education while largely critical of prevalent education practices (e.g. curriculum narrowing, emphasis on high-stakes testing and lack of civic education) that they view as pervasive in post-No Child Left Behind American education. However, as noted in chapter 2, critics of place-based education are few, possibly because of the newness of the term (but not the practice) and the limited number of schools engaged in the strategy. Also, the mal-alignment of place-based tenets (e.g. interdisciplinary focus, multiple inputs) with research and program evaluation methodologies favored by public and private funders limits support (i.e. funding) for place-based intervention inquiry in both education and in human service related programs (Schorr, 2012). However, Chapter 3 did include available critiques of place-based education (e.g. Nespor, 2008), and further discussion in this Chapter addresses several criticisms of place-based education in against the backdrop of this study's findings.

A final limitation is inherent to a study conducted by one evaluator. Observations occurred over one week, though context and rapport were established over two years of visits to the school; more time at the school might have presented a more comprehensive picture of the place-based strategy in action, as would have conversations with students. Some of the most valuable interview data came about in casual follow-up conversations with interviewees, most of which were not recorded, though detailed notes, oral and voice, were taken; such data was not subject to transcription, and accurate reporting is dependent on my interpretation of nuances and sorting the varied nomenclature in describing place-based education and accompanying instructional practices. Further, the homogeneity of interviewees in terms of experience and in their descriptions of the "Crellin Way" received no counterweight; more interviews with a wider collection of

stakeholders might have altered the findings. This study focused largely on the teachers and community partners most vested in the strategy. One safeguard was the sharing of findings with key stakeholders throughout the process, including a draft of Chapter 4, with the goal that such checks might prevent any omissions, misstatements or misquotation, or any misinterpretation of data.

Discussion of Findings

When combined, the findings in Chapter 4 underscore the interviewees' collective emphasis on the holistic nature of the place-based education strategy at Crellin. Table 6 (below) summarizes findings as applied to the study's three evaluation questions.

Table 6

Synthesis of Evaluation Question Findings

Evaluation Question	Summary of Findings
<p>What are Crellin Elementary School teachers', administrators', and community partners' perceptions and working definitions of place-based definition?</p>	<ul style="list-style-type: none"> • Clear evidence of Crellin's fidelity to place-based education tenets • Principal's assertion that "We have broken down the walls between school and community" applies to sentiments expressed by all interviewees • The "place-based education" moniker is not regularly used by the majority of interviewees; "Crellin Way" is colloquial for place-based strategy
<p>What are and were the key elements in implementing and maintaining the place-based instructional strategy at Crellin Elementary School?</p>	<ul style="list-style-type: none"> • Place-based strategy implemented because status quo was failing; implementers not aware that place-based education • Culture welcomes trial and error • Interviewees noted importance of school leadership • Teachers and community partners form deep instructional partnerships • No evidence that place-based education's use of local as grounding context thwarts broader inquiry or a global perspective • Extensive use of outdoor environment (year round) in lieu of traditional classrooms • Place-based strategy started slowly and continues to "snowball" • Assessment largely informal; de-emphasis on standardized tests; teachers view state standards as a "minimum"
<p>What instructional aspects of the place-based education strategy at Crellin Elementary School are most important to its success?</p>	<ul style="list-style-type: none"> • Problem based and project based learning (terms used interchangeably) are prevalent, but not all-encompassing • Full integration of arts • School culture promotes focus on student and faculty emotional and material needs as a building block for instructional success • Interdisciplinary instruction undergirds the place-based process • Extensive partnership with community partners in delivering instruction

Exploration of Findings

In triangulating the findings—especially the interviews and field notes—the outsize role of Crellin’s principal stands out. Consistent with the literature noted in chapter 2 pointing to a principal’s role in implementation strategies (i.e. Fullan, 2007) and a larger body of literature noting the importance of principals in relation to student achievement and creating conditions for overall school success (Stronge, Richard, & Catano, 2008), it is clear that Crellin’s principal is a major force behind the instruction and in creating and maintaining the web of relationships that create place-based education at the school. My field notes reflect the principal’s ubiquitous presence, whether in a creek instructing students, or greeting the seemingly endless flow of visitors and community partners at the school. But the field notes, combined with unambiguous interview findings, emphasize that the principal’s role is that of empowering all stakeholders, and she is ever-eager to deflect praise toward others—especially students. Ultimately, an understanding of the principal’s role and presence at Crellin should undergird discussion of findings

The principal’s importance to the place-based strategy raises hypothetical questions about the strategy’s institutionalization if the school were to change leaders. The school’s capacity for place-based education extends to every teacher, the support staff, and to much of the community. Though the principal is “ubiquitous” at the school according to my field notes, I note also that her presence is empowering and she embodies servant leadership. Teachers said repeatedly that they have more authority to exercise their personal judgment at Crellin than they experienced in teaching at other schools. And number of Crellin’s many awards have gone to teachers.

I surmise that a leadership change at the school would not supplant the place-based strategy. First, the strategy taken root for nearly 15 years; de-institutionalizing it could take years, especially considering the faculty attachment to place-based tenets. For example, bringing instruction indoors would be a vast deviation from the norm. Second, the community's demonstrated support, both financial and in commitment of social capital (i.e. volunteer hours, participation in projects, etc.) to the school is immense. I am confident that the community would resist efforts to dismantle something in which they have invested so much. A more likely scenario is that the strategy, under a new principal, might look markedly different. But, as the findings in chapter 4 note, the strategy is intentionally ever-evolving, or "snowballing" based on events and local terrain. The inherent versatility of place-based education would lend itself to the likelihood of the strategy's survival at Crellin Elementary in the event of a leadership change. However, a new leader explicitly determined to or charged with ceasing the place-based strategy would change the equation.

The remainder exploration of findings is not a discussion of the most salient findings. As emphasized in Chapter 4, the holistic and intertwined nature of the place-based strategy points to the complete integration of the elements described in Chapter 4 to form the place-based education strategy at Crellin. The ensuing discussion offers 1) explanatory information for the lack of coalescing around the place-based strategy at Crellin; 2) analysis of findings against the backdrop of contemporary education research; 3) further exploration of Crellin's emphasis on nature and physical fitness. The nature and physical fitness related findings are not wholly germane to the evaluation questions,

and are thus more appropriate for this discussion forum, which notes emerging evidence that exposure to nature and physical activity are important to student achievement.

Using “place-based education” to describe Crellin’s strategy. Considering Crellin’s position as a place-based education leader (Fenwick-Judy, 2012; Gliner, 2012; Sobel, 2011), the non-regular use of the “place-based education” term by Crellin teachers and community partners to describe the “Crellin Way” appears counterintuitive. But discussions with stakeholders combined with examining place-based education nomenclature-related literature (e.g. Lewicki, 2010; Powers, 2004; Jennings, Swidler, & Koliba, 2005; Siskar & Theobald, 2008) lead to the conclusion that lack of coalescing around the place-based is not evidence of a lack of fidelity to the place-based strategy. A long-time Crellin community partner and environmental education expert asserted that “fads” and “buzzwords” often capture the attention of educators, while the ultimate goal of using the local environment as an integrator for learning remains constant:

Again, it’s all kind of the same model, using your place, your watershed, your community as a lens for learning, as a context for your curriculum...Every time I would talk about it, I have to explain it to people. Then all of a sudden, I would feel like ever since I’ve been working in this field, project based learning and problem based learning, those have come about, so then everybody just went nuts with the project based learning. Like the formal education circles, people would buy into that because that was the philosophy they were being taught or something...I’m like, this is what all this is...Right now, I think it’s great if that word [place-based education] would be interjected in to replace some of the other

buzzwords in the education system, it goes really, really well with what is being promoted as great practice right now.

Consistent with the above quote, three teachers offered that outside educators regularly attempt to understand Crellin's place-based strategy via a framework of "what they learned in graduate school, or "at an education conference" (as one interviewee said). But, the Crellin teachers emphasized, Crellin's place-based strategy is largely built on relationships and community connections; instruction is only one piece. And even instruction—as best evidenced by the role of community partners in teaching at Crellin—is driven largely by partnerships.

Consistent with the above-noted discussion and with the finding that those responsible for starting the place-based strategy at Crellin were at first unaware place-based education as a strategy, place-based education literature (e.g. Powers, 2004; Gruenewald, 2003; Smith, 2014; Theobald, 1997) reflects disparate theoretical traditions influencing place-based education and its overlap (both in substance and name) with related approaches and strategies including project based learning and environmental education, for example. Thus, the emergence of a place-based model in an environment where implementers were largely unaware of the concept aligns place-based education literature. Essentially, findings indicate that Crellin aimed for a strategy that engaged students, engaged the community, and used context including local problems to drive instruction while eschewing emphasis on standardized tests. The result was place-based education.

Further, when discussing monikers, it would be unwise to casually categorize place-based education at Crellin as if it is interchangeable with progressive education

strategies. Place-based education's ties to progressive and constructivist-rooted education are clear. Dewey and Montessori would feel vindicated at Crellin, I surmise. But place-based education's links to community, ecology, and sense of place are key factors that make place-based education a unique entity worthy of study on its own merits while retaining lessons learned from the study of progressive education strategies.

The place-based education strategy. The broad and all-encompassing nature of the place-based strategy Crellin leaves seemingly countless options (i.e. school leadership, school/community, links between arts and student achievement, approach to testing, impact of problem-based learning, etc.) to frame inquiry at the school. I chose place-based education, in part, because of its recognition of community ties and interdisciplinary inquiry, which stakeholders at Crellin note as critical for the school's success. Joshua Aronson, (2012) a social psychologist at New York University whose ongoing presence at Crellin as a researcher overlapped with my time at the school, said that Crellin "could be the best school in America" citing the school's rise from "0% proficiency to 100% proficiency [on standardized tests] in 3 years after a new principal", adding that "50% of students reached advanced level" (p. 60). Aronson also noted that former Crellin "comprise 75% of the students in AP classes in high school despite being 1/3 the size of the other feeder elementary schools" (p. 59). Rooted in his larger body of research relating to student achievement and race and gender stereotypes, Aronson believes that "Identity Salience" is a driver of Crellin's success, adding that Crellin students "do science" rather than "study science" while pointing out (coinciding with Chapter 4 findings) that Crellin students self-identify as scientists (p. 60). Aronson also

noted the constant reminders to students that “Crellin students work hard, etc.” (p. 60), which coincides with the emphasis on the “Crellin Way” presented in chapter 4.

A study of award-winning teachers of at-risk and highly mobile students, which was similar in methodology to this study of Crellin while focused on similar (albeit not identical) student populations, found that the award-winning teachers “view the academic needs and the affective needs of their students equally. Unless one need is met, the other cannot be met” (p. 66). Further, the study’s findings emphasized the importance of trusting relationships, high expectations, ongoing student assessment, and varied instructional activities as important components in the teachers’ success (Grant, Stronge, & Popp, 2008). Grant, Stronge, and Popp’s (2008) key findings, especially the focus on affective needs and high expectations, align with findings in Chapter 4. Combined, the broader conclusion is that schools and teachers focused on instruction at the expense of student affective needs are—based on the findings presented in Chapter 4 and those offered by Grant, Stronge, and Popp (2008)—likely thwarting student achievement.

Hattie’s (2009) *Visible Learning*, which synthesized hundreds of meta analyses related to student achievement, emphasized the book’s non-focus on influences beyond instruction, while acknowledging the importance of such influences:

It is *not* a book about what cannot be influenced in schools—thus critical discussions about class, poverty, resources in families, health in families, and nutrition are not included—but this is NOT because they are unimportant, indeed they may be more important than many of the influences discussed in this book.
(p. Viii-ix)

The findings presented in chapter 4, at least in part, show that Crellin takes on some of what Hattie said “cannot be influenced” in schools. There are examples of Crellin taking on nutrition issues largely because it saw a need in its students. In addition to sending food home with students weekly, the principal noted that the school’s growing emphasis on food production (garden, construction of a large greenhouse, certification of a staff member as a master gardener, egg production, use of local food in classrooms, etc.) helps to meet an unidentified affective need, while also serving the school’s larger goals including hands-on science, data collection for students, etc. Further, interviewees provided multiple anecdotes describing in-depth efforts by school staff to ameliorate the impact of poverty and/or crisis on students and their families while also noting that community members have used the school as a site of refuge and support in their times of grief and crisis (i.e. deaths in families, etc.).

Finally, against a national backdrop of curriculum narrowing and emphasis on test-preparation at the expense of critical thinking—especially in schools serving low-income students (Ravitch, 2010), Crellin’s eschewing of test preparation and wide (i.e. community stewardship, hands-on inquiry, interdisciplinary focus) aims offer a contrast. And Crellin’s student achievement, as gauged by test scores and other measures (e.g. character education and environmental education awards) that are identified by Crellin stakeholders as more important than test scores, offers evidence that higher test scores and other measures of achievement are attainable when schools adopt place-based tenets. Crellin’s experience aligns with Smith’s (2013) synthesis of place-based research and with Siskar and Theobald’s (2009) assertion that place-based education works for raising test scores, but also holds promise for student development:

...even if our goal was as narrow as raising test scores, place-based or community-based education is probably the best route to getting there. But its appeal is greatly aided by the promise it holds for the development of individuals willing to allow relationships and commitments to define themselves as human beings. (p. 69)

Nature and physical fitness. Statements from Crellin's instructional and support staff and community partners indicated a prevalent belief that students' level of outdoor time and accompanying physical activity substantially reduces behavior-related issues while increasing student engagement. Though this study was not aimed at exploring such assertions in depth, available evidence tilted toward the veracity of such claims—especially the principal's seasoned observations (noted in Chapter 4) about the place-based strategy's impact—specifically hands/on and outdoor activities on—on students who struggled in regular classrooms. Additionally, such claims appear to coincide with a growing body of research.

Hamblin (2014) described the examples of emerging research linking children's fitness levels not only to health and school performance, but also to broader global health concerns (e.g. obesity).

Physical activity is clearly a high, high-yield investment for all kids, but especially those attentive or hyperactive. This brand of research is still published and written about as though it were a novel finding, in part because exercise programs for kids remain underfunded and under prioritized in many school curricula, even though exercise is clearly integral to maximizing the utility of time spent in class. (para. 2)

Hamblin's claims are built in part of a study appearing in the *Journal of Pediatrics*, which indicated that moderately intense aerobic exercise might aid neurocognitive function and inhibitory control in children with Attention Deficit Hyperactivity Disorder (ADHD). The study also noted gains in reading and math for students with ADHD and non-ADHD children (the control group) post-exercise. The study concludes with urging more exercise in school (Pontifex, Saliba, Raine, Picchiatti, & Hillman, 2013).

On a related note—especially in Crellin's case—is a growing body of research linking proximity to nature to improved mental health, and even to student achievement. A study of Massachusetts schools noted the relationship between “greenness” (a term coined by the researchers to gauge proximity to trees/nature, etc.) and schools. When adjusting for socio-economic factors, the study found positive relationships between “greenness” and academic performance (Wu, et al.). At Crellin, teachers are quick to point out the connections between time outdoors and student achievement, especially in terms of engaging “hard to engage” (a term used by a Crellin teacher) students. Furthermore, Crellin's principal asserted her strong belief that outdoor activity and instruction often “makes leaders” and engages a wholly different set of students than those prone to success in regular classroom settings. Several Crellin teachers noted that such observations as the principal's apply especially to boys. Powers's (2004) evaluation of four place-based programs offered similar findings, and suggested studying place-based education as a way to reduce special education costs.

Recommendations

Though portions of discussion in the previous heading (e.g. place-based education and physical activity) also constitute recommendations for further inquiry, the below recommendations focus on further research at Crellin and then offer suggestions for broader conversations around place-based education research and funding. Substantial gaps in place-based education research, noted in Chapter 2, drive the below recommendations.

Tracking Crellin alumni. Tracking the academic success of Crellin students against a control group of students from the other (feeder) elementary schools as Crellin students go through middle and high school would offer a relatively simple and quantitatively-rooted measurement of the long-term impact of a Crellin education's impact on test scores, dropout rates, and grade point average, for example. Such information—especially considering Crellin's long-time adherence to place-based tenets (Gliner, 2012; Sobel, 2011)—would address the dearth of quantitative research in place-based education's literature base (Nespor, 2008; Smith, 2013).

While such conversations were preliminary and speculative, interviewees were resolute in their consensus that the “Crellin experience” (a term one teacher used) led to sustained student achievement as students moved to middle and high school and beyond. Aronson's (2012) presentation offered similar claims, noting the disproportionate prevalence of former Crellin students in high school AP courses in comparison to feeder schools. Several teachers offered powerful anecdotes of students returning to Crellin, offering assistance, and with some (former students) citing their experience at Crellin as pivotal to breaking the cycle of poverty. Such anecdotes, when

offered alongside clear evidence of Crellin's academic achievement as gauged by standardized tests, are worthy of further inquiry.

Tools to gauge environmental attitudes and/or levels of civic engagement (journals devoted to environmental education and community development, for example, report on such topics) would assist in measuring the impact of non-academic achievement among students who attended the school. A finding that Crellin students display environmentally-focused attitudes or actions years after leaving the school would indicate that the place-based strategy offers effective environmental education. For example, the National Environmental Education Foundation (2013) offers a survey aimed at measuring behaviors, attitudes, and level of informedness toward the environment; the survey or one like it could measure Crellin alumni environmental behaviors, attitudes, and informedness versus a control group. Similarly, evidence civic participation (e.g. voting rates) by Crellin alumni in comparison to peer groups would offer evidence of the place-based strategy's long-term impact on civic engagement, if any. Such quantitative findings (in addition to test scores) would begin to address the widely acknowledged dearth of quantitative place-based education data.

Relatedly, considering that Crellin's aims appear as tied to the community's well-being as to academic achievement (interviewees noted interdependence between community well-being and student success), another angle for further study is the community impact of the place-based strategy. Fields in addition to education (e.g. rural sociology) would be appropriate for such inquiry. For one idea, interviews with long-time Crellin residents and/or civic leaders might help to understand impacts of the place-based strategy on the community's sense of efficacy. Or, in-depth interviews with those

assisted by the school's de facto social safety net might show from the perspective of those receiving assistance how the school addresses student achievement by first tackling issues such as domestic violence and poverty that stand in the way of academic success.

Eliminate (perceived) rural bias. As discussed in chapter 2, one critique of place-based education is the appearance that the strategy is rural-centric, with the connotation that non-rural schools are ill-suited for such a strategy. I discussed this question with Crellin's principal and several teachers, who were unanimous in their belief that place-based education can work "anywhere". Gliner's (2012) documentary featuring Crellin along with several other rural and urban schools confirms this point. A teacher at Crellin offered that "any school" can put up bird feeders and take other "small steps" to root learning in place. Another Crellin teacher noted that those who look to Crellin's impressive outdoor barnyard, amphitheater, walking trail, gardens, and other amenities often fail to realize the "dump" that Crellin was prior to the strategy. Furthermore, the same teacher offered that schools in communities "with problems" are sometimes best-suited for place-based education, as taking on community problems is inherent within the strategy. Tolbert and Theobald (2006) described the promise and already-impressive results of place-based education in urban settings, offering the applicability of place-based education in urban settings:

Place-based lessons will always depend on the circumstances of a given location, or a given school, and consequently no two will ever be the same. Teachers should recognize the fact that no matter where they are, no matter how deteriorated the neighborhood might be, math, science, music, art, literature, and history surround them. (p. 274)

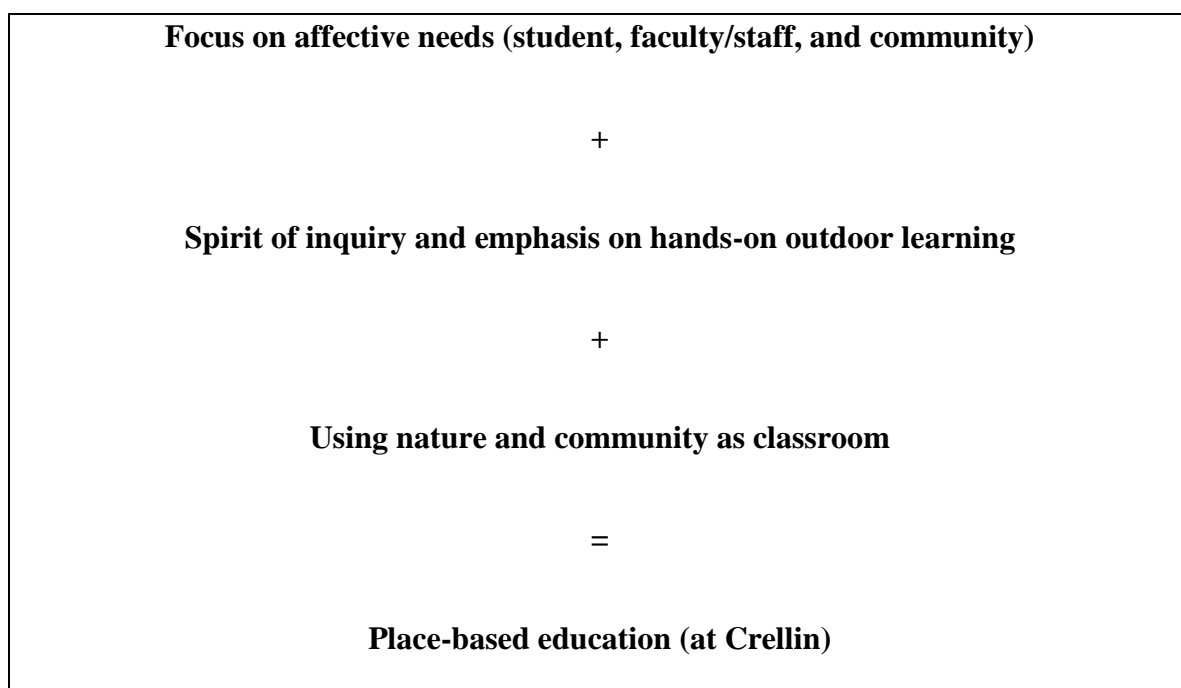
Funding inquiry. Crellin has secured nearly \$700,000 in external funding since the onset of the current principal's tenure and the place-based strategy. As noted in chapters 1, 2, and 3, the relative dearth of place-based education research is attributable, in part at least, to a precipitous decline in research support or place-based education practice and research after the passage of the No Child Left Behind (NCLB) legislation in 2001 (Smith, 2013; Theobald, personal communication, March 18, 2013). But Smith and Theobald also note that the 1990s saw substantive interest in place-based education funding.

Discussions with funders (past, current, and potential) of place-based education would illuminate some of the reasons behind funding declines while offering what aspects of funded programs offered particular appeal. Such conversations could aid future proposals for support of place-based programs or place-based research and program evaluation. Such conversations with the national and regional funders (e.g. Intel and the Chesapeake Bay Foundation) that have supported place-based education at Crellin would offer a starting point.

Conclusion

A common request from my peers in education is to “define” place-based education. I avoid offering my own definition, largely because I cannot improve on the definitions provided by Sobel (2005) and Azano (2011) in Chapter 1. Further, the request to “define” place-based education is usually accompanied by an effort by the questioner to “slot” place-based education in curricular or related domains of which they are familiar (e.g. environmental education or problem based learning). Place-based education's many inputs and ambitious aims do not break down for easy measurement or slotting within

curricular domains. And each working definition of place-based education is, obviously, anchored to a particular place. Applied to Crellin alone, below is a simplification of the place-based strategy:



Crellin's ongoing success, in my judgment, is a testament to the inherent capacity of Appalachian people—a capacity that outsiders of all ideological leanings have failed to recognize and understand for too many generations. Outsiders discussing Crellin might note the nearly \$700,000 in externally-generated funding that Crellin has enjoyed since 2002 as a driver of the school's turnaround. But more important than the financial resources (in the judgment of the school's stakeholders) are the thousands upon thousands of volunteer hours logged by the Crellin (and broader) community in support of the school. The "inside job" description of Crellin's turnaround (offered by a teacher) appears accurate.

Finally, advice for educators seeking to take on or to evaluate place-based education: wider dissemination of Paul Theobald's body of writing—starting with *Teaching the Commons* (1997)—would assuage concern that place-based education lacks theoretical grounding or depth. Theobald, at first, with his communitarian leanings, may appear a better fit for a more agrarian time in history. But his work is explicitly not exclusive to rural contexts, and his description of place-based education in practice offers appeal across the political spectrum. For appeal to conservatives, an emphasis on local needs and non-centralized education is a hallmark of place-based education. For liberals, place-based education's tending to affective student needs and emphasis on environmental stewardship and community cohesion holds appeal. And possibly appealing to and alienating (political alliances around Common Core standards defy political convention) both sides of the political spectrum, place-based education—at least in the unqualified opinion of Crellin's faculty—aligns perfectly with Common Core's emphasis on critical thinking and inquiry.

Ultimately, reading Theobald's contributions to place-based education literature is similar to observing the education process at Crellin Elementary. One leaves struck by the paradoxical complexity and simplicity place-based education. I join place-based education's proponents and those offering pointed critiques in noting the salient need for more research and evaluation of the strategy.

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Appendix A: Teacher Interview Protocol

(for individual or small group interviews with a maximum of 3 interviewees)

Purpose of the Study: This interview is part of an effort to better understand the place-based education strategy at Crellin Elementary.

I thank you for your voluntary participation in this study. The interview is being recorded and will later be transcribed. Your will not be publicly identified with your answers and every effort will be made to protect your anonymity.

Warm-Up Questions

1. Please tell me your name, how long you have been a teacher, and how many years you have been teaching at Crellin.
 - a. Did you receive specialized training in place-based education when beginning your teaching assignment at Crellin?
2. Please briefly tell me about your favorite experience interacting with the farm animals or wildlife on Crellin's premises.

Interview Questions

1. How would you describe place-based education?
 - a. How would you describe place-based education as it is implemented at Crellin?
2. What instructional aspects of Crellin's place-based education strategy are most important to its success?

- a. How do you go about planning lessons?
 - i. What resources do you use to plan?
 - ii. How do you use community resources and the local environment to plan and carry out your lessons?
 - b. What instructional strategies do you find most effective in place-based education? Why?
 - c. How do you assess student learning? What methods or tools do you use?
 - i. What are the student outcomes anticipated at Crellin?
3. What are and were the key elements in implementing and maintaining the place-based educational strategy at Crellin?
 - a. What are the key elements of curriculum?
 - b. What are the key elements of instruction?
 - c. What are the key elements in terms of community resources and local environment?

Concluding Question:

3. Please feel free to share any information that you believe might assist in my understanding the place-based education strategy at Crellin.

Appendix B: Community Partner Interview Protocol

(for individual or small group interviews with a maximum of 3 interviewees)

Purpose of the Study: This interview is part of an effort to better understand the place-based education strategy at Crellin Elementary.

I thank you for your voluntary participation in this study. The interview is being recorded and will later be transcribed. You will not be publicly identified with your answers and every effort will be made to protect your anonymity.

Warm-Up Questions

- 1 Please tell me your name, your institutional affiliation (if any) that ties you to Crellin, and how long you have been working with Crellin as a community partner.
 - a. Did you receive specialized training in place-based education when beginning your community partnership role at Crellin?
 - b. Please briefly tell me about your favorite experience interacting with the students or staff at Crellin.

Interview Questions

1. How would you describe or define place-based education?
 - d. How would you describe place-based education as it is implemented at Crellin?
- 2 What instructional aspects of Crellin's place-based education strategy are most important to its success and how does your involvement support this success?

- a. How do you go about planning for your instructional role?
 - i. What resources do you use to plan?
 - ii. How do you use community resources and the local environment to plan and carry out your lessons?
 - b. What instructional strategies do you find most effective in place-based education? Why?
 - c. How do you assess student learning? What methods or tools do you use?
 - i. What are the student outcomes anticipated at Crellin?
- 3 What are and were the key elements in implementing and maintaining the place-based educational strategy at Crellin?
- a. Describe how you coordinate your work with the staff at Crellin?
 - b. What are the place-based strategy's key elements in terms of community resources and local environment?
 - c. When you take on teaching responsibilities, what is the role of Crellin's teaching staff in assisting you?

Concluding Question:

Please feel free to share any information that you believe might assist in my understanding the place-based education strategy at Crellin

Appendix C: Participant Consent Form

I, _____, agree to participate in a study of the place-based education strategy at Crellin Elementary School. The individuals selected to participate have been chosen because of their instructional roles at Crellin Elementary and/or role(s) in partnerships between the school and broader community. The purpose of the study is to identify and learn more about the instructional and related elements that are integral to the place-based education strategy at Crellin Elementary School.

As a participant, I understand that my participation in the study is purposeful in that the teachers and community partners were selected because of their roles at Crellin Elementary School. I understand that approximately 10 teachers and approximately 5 individuals representing Crellin's community partners will be selected to participate in this study.

I understand that I will be expected to participate in one (1) interview focused on my experiences with the place-based education strategy at Crellin Elementary School. I understand that my interview may be part of a small focus group, or it may comprise of one or more individual conversations with the researcher. There is also a chance that the researcher will contact me for clarifying information after my interview.

I understand that my responses will be confidential and that my name will not be associated with any results of this study without my written consent. I understand there is no personal risk or discomfort directly involved with this research and that I am free to withdraw my consent and discontinue participation at any time. I agree that should I choose to withdraw my consent and discontinue participation in the study that I will notify the researcher listed below, in writing. A decision not to participate in the study or to withdraw from the study will not affect my relationship with the College of William and Mary generally or the School of Education, located in Williamsburg, Virginia, USA, specifically.

If I have any questions or problems that may arise as a result of my participation in the study, I understand that I should contact Stephen Sugg, the researcher at 202-957-4813 or stsugg@email.wm.edu or Dr. Leslie Grant, his dissertation chair at (757) 221 – 2411 or lwgran@wm.edu . I am aware that I may report dissatisfactions with any aspect of this study to the Chair of the Protection of Human Subjects Committee at phone [1-855-800-7187](tel:1-855-800-7187) or rwmcco@wm.edu My signature below signifies that I am at least 18 years of age, that I have received a copy of this consent form, and that I consent to participating in this research study.

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE COLLEGE OF WILLIAM AND MARY PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2013-10-01 AND EXPIRES ON 2015-08-04.

DATE

Signature of Participant

DATE

Signature of Investigator

