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Blending Community and Content Through Place-Based Science

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Abstract
Place-based education connects the learner to the local environment through diverse strategies that increase awareness and connectedness to the community, and ultimately to the world (Sobel, 2004). Constructivist principles of learning – the belief that individuals "construct their own knowledge by engaging in the learning process, interacting and collaborating with teachers and other students, reflecting on the content, and meaningfully integrating the new information with prior knowledge" (Sowan & Jenkins, 2013, p. 316) – run deep within place-based education as the learner constructs meaning through personal interactions with the local environment. In other words, the "landscape shapes [one's] mindscape" (Haas & Nachtigal, 1998, p. 4). This report follows the impact of a three-year grant funded program with a focus upon building community partnerships through a place-based, environmental education lens. Depth of impact is understood through the viewpoints and perspective of the project's stakeholders: K-12 teachers, university professors, and community partners. This examination of place-based curriculum connected through the sciences provides a model for creating intentional partnerships as a means to blend community and content.

Keywords
Place-based learning, Collaborative Model, Community Partnerships

Introduction

Relying on the natural world to enhance a school's learning environment provides much more than just a change of view. In fact, as has been said, a change of place plus a change of pace equals a change of perspective. Within the sciences, perspective is key. Two popular and current perspectives on the nature of scientific understanding include: (1) "Learning as change in discourse and participation with others; and (2) Learning as change in conceptual understanding" (Girod & Wong, 2002, p. 199). Dialogically speaking, perspectives can be deepened as connections are made between the person, their world, and the sociocultural context that binds factual information together with the "beauty and power of [the] subject matter" (Girod & Wong, 2002, p. 199).

Place-based education relies heavily upon community partnerships. As a means to provide a solid framework for developing a place-based curriculum, a strong partnership has to be fostered between the stakeholders: K-12 schools, University Faculty, and Community Institutions/Organizations. Following the ED2 Project (a three-year project focused upon the infusion of place-based curriculum into a K-12 corporation through a summer professional development program), this report offers insight into the impact such an experience has had as told through the lens of the community stakeholders. The goal of the ED2 Project was to foster a solid framework for facilitating community partnerships that were grounded in K-12 science content. Participants actively developed community relationships and routinely reflected upon the growth and impact of the project over time. Through the analysis of the ED2 Project, this examination of place-based curriculum provides a model for creating intentional partnerships as a means to blend community and content.

Place-Based Education

Place-based education has a rich and diverse connection to numerous theoretical traditions including "experiential learning, contextual learning,

problem-based learning, constructivism, outdoor education, indigenous education, environmental and ecological education, bioregional education, democratic education, multicultural education, and community-based education" (Gruenewald, 2003, p. 3). Hutchison (2004) theorizes the term *place* has the ability to "conjure up visions of locality [and] spatial representations [as well as] those places…which intrigue us" (p. 11). Experiences, histories, and emotions all comprise what is known as the "spirit of place carried on [and often] transformed by those who come after us" (Hutchison, 2004, p. 11).

Place-based learning may be a relatively new term; however, the concept is not. In fact, its origins are found within the nature study movement of the 1890's led by John Muir and Enos Mills. Yet, as Powers (2004) articulates, it must not be minimized as only a movement of the past, but a mindset for today: "Place-based education [is the] foundation of environmental education . . . build[ing] on the work of diverse community-based initiatives" (p. 17). Sobol (2004) concurs, "Place-based education takes us back to [the] basics, but in a broader and more inclusive fashion [embracing] the history, folk culture, social problems, and the aesthetics of the community" (p. 9).

A commonly accepted definition of place-based learning endorsed by Smith and Sobel (2010) affirms that it is "learning rooted in what is local. [In other words] the community provides the context for learning, student work focuses on community needs and interests, and community members serve as resources and partners in every aspect of teaching and learning" (p. 23). This type of focus has the "power to engage students academically, pairing real-world relevance with intellectual rigor, while promoting genuine citizenship and preparing people to respect and live well in any community they choose" (Smith & Sobel, 2010, p. 23). One parent shared her observations of her elementary aged son and the teachable moments stemming out of place: "[The learning experience has become] a mutual thing – a courtesy – a matter of respect between people, [and because of this] I feel that my child is better equipped to tolerate himself and others within a [diverse] society" (Cotton, Hassan, Mann, & Nickolay, 2003, p. 136).

Every school building is situated within a community and has the potential to represent and serve the larger society. Naturally, attributes – norms,

values, and attitudes – found within the school typically mimic that of society. These are known as institutional bridges guaranteeing a continuance of culture from one generation to the next. Therefore, when students and teachers become experts in the study of place and its localized customs, "the wall between the school and community becomes much more permeable and is crossed with frequency . . . strengthen[ing] children's [and adults'] connections to others and to the regions in which they live" (Smith, 2002, pp. 593-594). A local gardener, who is also an educator and ED2 participant, speaks about this:

> My sense of place is found within my sense of volunteerism, specifically with our community gardens. I see people representative of all walks of life and all levels of economic success – or failure – come together to create, maintain, and harvest fruits and vegetables from the *unity* gardens. The connections made in the garden establish relationships that span any man-made barrier. They become outdoor classrooms where learning can occur, including content such as math, science, and history, and social skills, such as planning, collaboration, and communication. But even better, as our hands come in contact with the soil, we connect deeply with our community. There is spirit and identity found there. Any benefits derived from community gardens can also be achieved in the classroom. These same connections help to build a sense of belonging and ownership, which in turn, contributes to a reduction in crime and an increased sense of wellbeing and safety. It's a win-win situation for all involved!

Place-based education can promote the development of community connectedness especially when framed among the sciences. In order for classrooms to move beyond the school building, relationships must be established within the community to create intentional connections between the content and the places of interest. These relationships are delicate and can be difficult to establish. Within the context of the ED2 Project, an intentional focus on establishing long-term, positive community relationships was valued at the same level as the infusion of science content.

Intentionally Creating Collaborative Partnerships

The ED2 Project began by connecting key individuals from community organizations (institutions, parks, service groups) with K-12 teachers and university professors. Based upon the work of Kelly (1979) the project intentionally set out to establish a strong community partnership that was grounded in collaboration. In an effort to do so, three main processes were emphasized: Reciprocity, Shared Authority, and Mutual Trust and Respect.

Reciprocity

Prior to the start of any formal workshop and long before the completion of a grant proposal, the project director (a university professor) began working to establish and nurture relationships with community partners and the local K-12 school system. The project director met with each stakeholder individually and began the conversation by asking, "What can I do to help your teachers (or organization)?" One K-12 administrator commented that this approach was unusual; typically university researchers meet with the schools and look for a way to make their research interests fit the environment. Rarely, is the focus upon the needs of the community organization. By creating an open dialogue of serving the schools or organizations, the project director validated the experience of those stakeholders and began establishing a clear sense of reciprocity that strengthened the partnerships.

As the project director worked with the community partners, the focus was upon developing a project that met each set of needs in a specific and meaningful manner. Through an organic analysis of the needs presented, it was clear that the three entities (university, K-12, community organizations) would benefit from an increased emphasis upon the formulation of place-based education that related to science standards. The next step came in the form of establishing authority.

Shared Authority

Once the desire for partnership was determined, an appropriate grant was located to fund the development of a three-year project that offered professional development for K-12 teachers focused on place-based

education (linked directly to community organizations). As the grant writing commenced, the project director was given the title of "Primary Investigator", but that top-tier title was not reflective of the manner in which the collaboration occurred. The project director led a collaborative effort to work through iterations of the grant writing process. This allowed for each stakeholder to contribute, question, and qualify the fundamental components.

Mutual Trust and Respect

A collaborative style that promotes an egalitarian distribution of roles requires the establishment of mutual respect and trust. As the project director worked with each stakeholder, an emphasis was placed upon identifying the unique skill sets involved with the collaboration. Through the use of attribution and validation, the project director was careful to acknowledge the contributions of each partner and delegate tasks without hesitation. This model of trust and clear establishment of each partner as 'equal' set the tone for future collaborations throughout the three year project. When a stakeholder had a particular expertise, that individual took the lead on that area of the project. This was true regardless of role or 'status' as determined by level of education, position in the organization, or publication record. Through this process, a clear network of reliance was established; a community of practice came together for the good of the project as a whole.

Putting the Partnerships into Practice

In order to maintain the early momentum, the synergistic collaboration between K-12 teachers, university professors, and place experts would have to be nurtured and structured into the format of the summer workshop series. After the grant was written and accepted, the focus shifted to putting these partnerships to work. The flow of each two-week professional development series (one per summer) included the same triangulation of participation. For the ED2 project, the places included (over the course of three years): St. Joseph River; Potawatomi Zoo; Indiana University South Bend Restored Wetlands; Paul E. Douglas Environmental Education Center; Kingsbury Fish and Wildlife Area; and University of Notre Dame Linked Experimental Ecosystem Facility (LEEF).

The project director worked with the place experts (community organizations) to discern the most relevant approach or content to fit the state-based K-12 standards. In addition, she reflected upon the opportunities available at each local place and the degree of connectivity that was apparent to the science standards. A plan of engagement was determined for each place that included teaching and learning opportunities in a traditional classroom setting (emphasis upon the knowledge of the science standards) and then transitioned into the place (emphasis upon the application of the science standard).

Within the context of a two-week summer workshop, the project director created opportunities for this model to be applied. The K-12 teachers offered insight regarding the logistics of addressing place-based curriculum in the classroom, the university professors offered an application of theory into practice, and the community partners provided a context for this fusion of learning to occur. Each session included a blend of traditional classroom preparation and an extended period of fieldwork within each place. At this point the place experts led the teachers through an experiential lesson to ground the science concepts into an applied setting. The goal of this was to increase the confidence level of the K-12 teachers by providing an opportunity to learn directly from an expert (university professors) and also directly from the experience of the place. Throughout all of this, the K-12 teachers reflected upon their practice, their beliefs regarding science, and their own professional growth.

By establishing a solid foundation for the growth and development of community collaboration based upon reciprocity, mutual trust and respect, and shared authority, the project created synergistic relationships among stakeholders in which each individual had a valued and unique contribution. A visual representation of the ED2 Project may be viewed through the video component included with this work.

Reflections from Stakeholders

The premise for this project was strong, but the question remained: Did it make an impact? In looking at the written, narrative reflections from stakeholders (all areas), several emergent themes were apparent:

1. **Rekindled Professional Interest:** Participants indicated that the level of engagement and exploration that the summer workshops contained helped them to look at their content area (or organizational focus) with a renewed and fresh perspective. As one K-12 administrator commented, "many, if not most, of our teachers themselves experienced the rejuvenating power of taking learning outside. The wonder and joy of the natural environment impacted their spirit as much as the learning impacted them cognitively."

2. **Increased Perception of Leadership:** Participants from all areas indicated that by feeling validated in their expertise, they felt a surge of confidence in their ability to be impactful within their professional position. One participant commented, "Since ED2, I have given two talks about the environment to younger children and felt confident in front of them and grateful that I could change the way they think about our world and our local community."

3. **Increased Recognition of Community Resources:** Nearly all participants commented upon a change in perspective regarding community resources; and an extension of the definition of resources to include organizations, environmental areas, and the people that make up a community. One participant remarked, "I began to look at the area I am living and going to school at in a completely different way. This way of observing where I live as a, "place," has made me appreciate everything my town has to offer." Another commented that he is now, "…an observer of my environment".

4. **Comfortable Collaborations:** Following the program, the participants seemed to sense that the established network would continue to be utilized. Creating pathways for collaboration is a powerful first step towards long-term partnerships: "Schools can always use support, and community members often want to help, but aren't sure exactly how to go about it. Opportunities to bring the two together, such as ED2 offered, satisfy both." Another participant commented, "I think ED2 has helped develop an understanding and relationship between community members."

Conclusion

In order for place-based education to be effective, strong, collaborative relationships must be established within the community to create intentional connections between the content and the places of interest. By focusing upon early development of partnerships based upon reciprocity, shared authority, and mutual trust, the ED2 Project was successful in its venture into creating a pathway for synergistic collaborations. These relationships are delicate and can be difficult to establish. The continuation of such relationships requires an equally intentional commitment of time and energy.

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