We do not know the origin of this event. However, in some rural areas in Japan, there is a custom that women climb a mountain near their village to gather wild azalea branches. The date of this event is usually the 8th of April. This custom is considered to be an agricultural ritual announcing the start of farmwork.

From 1782, on the request of Seibee, the gardener, neighborhood residents also came to see the garden. People in Edo might have visited gardens instead of climbing a mountain. The agricultural ritual must be changed to a Buddhist festival. However, to prove this hypothesis, we must examine the connection between the garden and the mountain in Japanese culture.

CONCLUSION

Rikugien, a garden of the lower residence of the Yanagisawa clan, accepted visitors without distinction of status or position when Nobutoki Yanagisawa lived there after his retirement. Outsiders who had no connection with Nobutoki asked for his permission through an intermediary. Those who worked at the lower residence acted as intermediaries.

This was a way to open privately owned gardens to the public when social classes were strictly separated in many aspects of life, and *daimyo* residences shut their doors to outsiders. The garden provided an opportunity to open the *daimyo* residence to outsiders. This made it possible to provide a place where various people were able to gather without distinction of rank. Opening the garden to outsiders through intermediaries made anonymous outsiders identifiable individuals who appreciated the beauty of the garden and gained a sense of connection with the place.

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BUILDING A MULTICULTURAL LEARNING COMMUNITY THROUGH THE NATURE OF PLACE

Julie Johnson

ABSTRACT

Children's experiences of place, and their participation in shaping it, may serve as inspiring references for more ecologically designed future communities. This paper addresses the context of school as a significant, yet often neglected, social and ecological community in the lives of children, and explores the potentials of nature and participatory design to foster the development of a multicultural learning community. A review of research and theory on children's learning potentials in nature and in school landscapes, and on participatory design with children, is provided and used to reflect on a Seattle, Washington, elementary school as a case study for such a community.

INTRODUCTION

As planners and designers, we envision how communities may change, and advocate certain values, processes or outcomes. To achieve a more sustainable future, I believe we need to examine children's experiences of community, and explore how their experiences may provide awareness, understanding, and motivation to work together as-and in-community. Kevin Lynch noted, "In childhood we form deep attachments to the location in which we grew up and carry the image of this place with us for the remainder of our lives" (Lynch, 1984:825). Children's experiences of their place, and their participation in shaping it, may serve as inspiring references for creating more ecologically designed communities.

In the United States, public schools exemplify the increasing cultural diversity that holds new challenges and opportunities for community design and planning. What better place to begin participatory design processes, than where diverse groups share a common purpose and place? At school, children, families, teachers, and others form a learning community. Children spend much of their waking hours in this context, developing meaningful relationships and critical understandings that inform their cognitive, social, physical, and emotional development. Multicultural understandings can be fostered through informal individual interactions, as well as through

Figure 1. A common image of an urban school landscape, where asphalt abounds. (Photo: University of Washington Department of Landscape Architecture teacher workshop)

curriculum and other activities that foster the development of the school as a dynamic, living community.

Yet as a place to build community, all too often school landscapes are asphalt expanses with token entry plantings. What lessons do such impoverished environments convey, how do children participate in these places, and what does this suggest for our collective future? A review of recent research sheds light on the importance of nature in childhood, the development of ecological literacy, and the role of school landscapes in children's learning. Referencing this research, as well as theory on children's participation in design, this paper examines a Seattle, Washington, school as a case study for building a multicultural learning community through the nature of place.

LEARNING IN NATURE

Childhood Values

Our contemporary society makes children's experiences in nature increasingly less common, as access to natural environments becomes more difficult and time is spent in other contexts. However, a growing body of research and theory on children's relationships with nature illuminates the powerful role nature plays in their development (e.g., Cobb, Carson, Moore, Kahn, Kahn and Kellert, Nabhan and Trimble). Nature affords children open-ended experiences and personal narratives that enrich the body, mind and spirit in lasting ways. Clare Cooper-Marcus has found that many college students, when asked to describe a favorite childhood place, "recall a wild or leftover place, a place that was never specifically 'designed'" (Cooper-Marcus, 1986: 124).

Children's experiences in nature are needed not only for their personal development, but also for their understandings of and commitment to care for their local ecology—their ecological literacy. In his articulation of this concept, David Orr states that "ecological literacy is driven by the sense of wonder, the sheer delight in being alive in a beautiful, mysterious, bountiful world" (Orr, 1992: 86) and this begins in childhood. Orr outlines three

Figure 2. Children's sensory-rich experiences in nature afford personal narratives of place. (Photo: Julie Johnson)

common features to developing ecological literacy: childhood experiences in nature, a role model who serves as a mentor in nature, and critical texts that inform and inspire (Orr, 1992: 88). Schools seem an ideal context for such a construction of ecological literacy.

The Nature of Schools

Yet in many cases, school landscapes provide other lessons. A landmark study of what children read from their school landscapes reveals the importance of nature. As part of its study, the British organization Learning Through Landscapes conducted interviews and tours with children to identify how they interpreted school landscape elements, and the impacts of schoolyard design on their behavior and attitudes. The results illustrated that the landscape provides a "Hidden Curriculum," one that "affected children's attitudes and behaviour, not only in relation to the grounds or whilst children were using them, but in terms of the school as a whole" (Titman, 1994: 55). Children interpreted extensive paved areas as dangerous, ugly and boring places. They often noted the paving "was all their school could afford and read from this that the tarmac was a measure of the worth of the school and of themselves as a part of it" (Titman, 1994: 33). Not surprisingly, children attributed positive values to natural elements, and such elements inspired creative play. Among these elements' attributes, trees were recognized and valued as living things to play on and protect, ponds were a source of living creatures to discover, bushes that afforded hiding places became treasured retreats, and flowers that were planted by the children elicited pride and caring.

In their book, Natural Learning: The Life History of an Environmental Schoolyard (1997), Robin Moore and Herb Wong provide a vivid testimony to the learning potentials of nature in school, where children participated in making and sustaining a habitat-rich landscape. They describe how teaching and learning occurred in the schoolyard through an integration of three domains of education: formal education of lessons; informal education gained through daily experiences, particularly play; and nonformal education characterized by resource people facilitating learning outside a classroom context (Moore and Wong, 1997: 195-6). The schoolyard became a community gathering space, where parents and neighbors used and helped care for it. This place offered rich interactions and meanings that remained with children, as

follow-up interviews in subsequent years revealed (Moore and Wong, 1997: 186-9).

In recent years, innovative programs and models across the United States have begun transforming school landscapes.[1] Gardens, habitat creation or restoration, and cultural or interpretive elements replace formerly neglected space. These efforts often grow through creative partnerships and broad goals that engage and catalyze a diverse community. The schoolyards may assume new meanings as a sensory-rich outdoor classroom, a dynamic place for play and discovery, and a treasured space for community life and learning.

Connecting schoolyards with a larger open space network allows opportunities for children to explore, understand, and care for ecological systems more fully. Educator David Sobel has articulated a developmentally appropriate framework for environmental education with children. Sobel proposes: "In early childhood, activities should center on enhancing the developmental tendency toward empathy with the natural world; in middle childhood, exploration should take precedence; and in early adolescence social action should assume a more central role" (Sobel, 1996: 12). This strategy could flourish in an open space system that extends from just outside the school to varied places that afford a spectrum of natural and cultural features.

PARTICIPATORY DESIGN WITH CHILDREN

Theory and approaches for undertaking democratic participatory processes with children have received increasing attention in recent years. The work of Roger Hart, Robin Moore and Herb Wong, Bruce Race and Carolyn Torma, and others present the values and approaches of such processes with children and youth. Building from Sherry Arnstein's metaphoric ladder of levels of participation, Hart (1992, 1997) articulates a ladder for children's participation. The lowest rungs of manipulation, decoration, and tokenism represent non-participatory approaches. Higher levels offer more authentic roles for children in the extent and authority of their participation. Hart notes that children's choice in participating is an essential principle.

Specific to the context of schools, Moore and Wong (1997) offer critical insights on participatory processes with children. They trace ways in which children engaged in design phases, including site assessment and design workshops. Through such activities as planting and caring for plants, designing and building a giant compass and sundial, and observing creatures that began to inhabit the site, the transformation process became the source of multidisciplinary studies as well as creative play.

As a model of participatory design, the development of the environmental schoolyard described by Moore and Wong could not have been achieved without multiple constituents and supporters worked alongside with children. They include college students and specialists from the UC Berkeley and organizations such as Audubon and the Oakland Museum—as well as family members and teachers. Additionally, the site's offerings as a community space engaged families and others in the life of the space. In these varied venues, mutual learning opportunities were afforded among all members of this robust community.

SEATTLE CASE STUDY: DEARBORN PARK ELEMENTARY

A Seattle school serves as an informative case study to consider the potentials and challenges of fostering a multicultural learning community through participatory design of its landscape. Located in the heart of an inner city neighborhood, approximately 95% of Dearborn Park Elementary students are ethnic minorities (Jensen, 2003: B1). The school's surroundings are unique, with an adjacent City park, forested ravine, protected wetland, and power line easement. Yet the school building suggests little connection with this context, featuring an inward-focused plan and ribbon windows placed far above a child's or adult's view.

In the mid-1990s, a convergence of opportunities opened the doors to learning in the landscape. The school started an "International Garden" featuring plants from the schoolchildren's cultures. The principal saw potentials of the landscape supporting newly adopted inquiry-based science curriculum and visualized the school's focus becoming environmental education. The City's Parks and Recreation Department was working with the Trust for Public Land (TPL) to acquire a wooded parcel adjacent to its park, which TPL recognized for environmental education and stewardship connections. A partnership of people from various organizations came together to identify learning opportunities, including Washington Forest Protection Association who provided teacher training and curriculum. The succeeding principal, Evelyn Fairchild, worked with the partnership and her school to advance this vision, and it has become a growing reality.

Transformation of the forest got underway on Earth Day 1996, as teachers, students, TPL and Parks staff, and other volunteers removed debris and invasive plants. These restoration efforts continued, with each class adopting a portion of the forest. A path was re-created, and a bridge across the ravine was built as part of a loop trail.

In 1997, a masterplan was developed through a participatory process that engaged students, teachers, school staff, community members and other organizations. The design team held a sequence of workshop meetings with adults. Design activities with children occurred as part of their studies, which were supported by the principal and teachers. Student groups undertook analysis and programming exercises in the

landscape with applications to their curricula. The designers explained their goals and undertook design workshops with each grade, in which students built models of their design ideas. The completed masterplan drawings of varied gardens, restoration areas, and interpretive elements and spaces were posted at the school for classes to review.[2]

The masterplan identified improvements to existing outdoor learning spaces and identified new opportunities for learning, much of which has been implemented through further design, grants, partnerships, and student participation. The International Garden plots evolve, as the school's Service Learning Coordinator coordinated edible plantings this year, and an incoming first grade teacher plans to use the garden with her class (Shenberger, 2004). Native plant and butterfly gardens identified at the front of the school have been planted. Formal gateways to both the wetland and forest have been built and incorporate children's art illuminating features and qualities of these spaces. The wetland area is now accessible with a platform, interpretive tile signs, and an amphitheatre-like gathering space with log benches.

In early 1997, I was inspired by the children's robust understandings of the forest when visiting a fifth grade class with a colleague. Graphs of measurements taken in the forest were posted on the wall, and samples of poetry written by students while in the forest were shared. When the teacher asked who would like to give us a tour of the forest, a flurry of hands went up. Our tour revealed the guides' enthusiastic knowledge of the life of the forest and their sense of ownership in it. They pointed out native plants, and one noted how he identified a fern after finding it in a library book. As we walked along, they picked up litter on the trail. One expressed dismay at waste in the ravine, noting that its intermittent stream goes into Lake Washington and thus so would the waste—a potent insight of the ravine's ecological context.

Today, teacher Janice Hunt's fifth graders continue learning and teaching in the forest. Students learn to work together while they study plants and ethnobotany, measure areas, remove invasive plant species, plant, write, and lead tours (Hunt, 2004). They give tours to visitors as well as students in each of the school's grades, sharing their insights of this place. Naturalists from organizations such as Starflower Foundation and Seattle's Earthcorps work with the fifth graders. The ethnically diverse Earthcorps staff work with student groups as they survey and study forest plots, identify and tag native plants, remove invasive plant species, and research what should be planted in their plots. The students present their planting ideas to Earthcorps, and learn how to plant as they restore their plots. Students wrote about the plants and developed a CD.

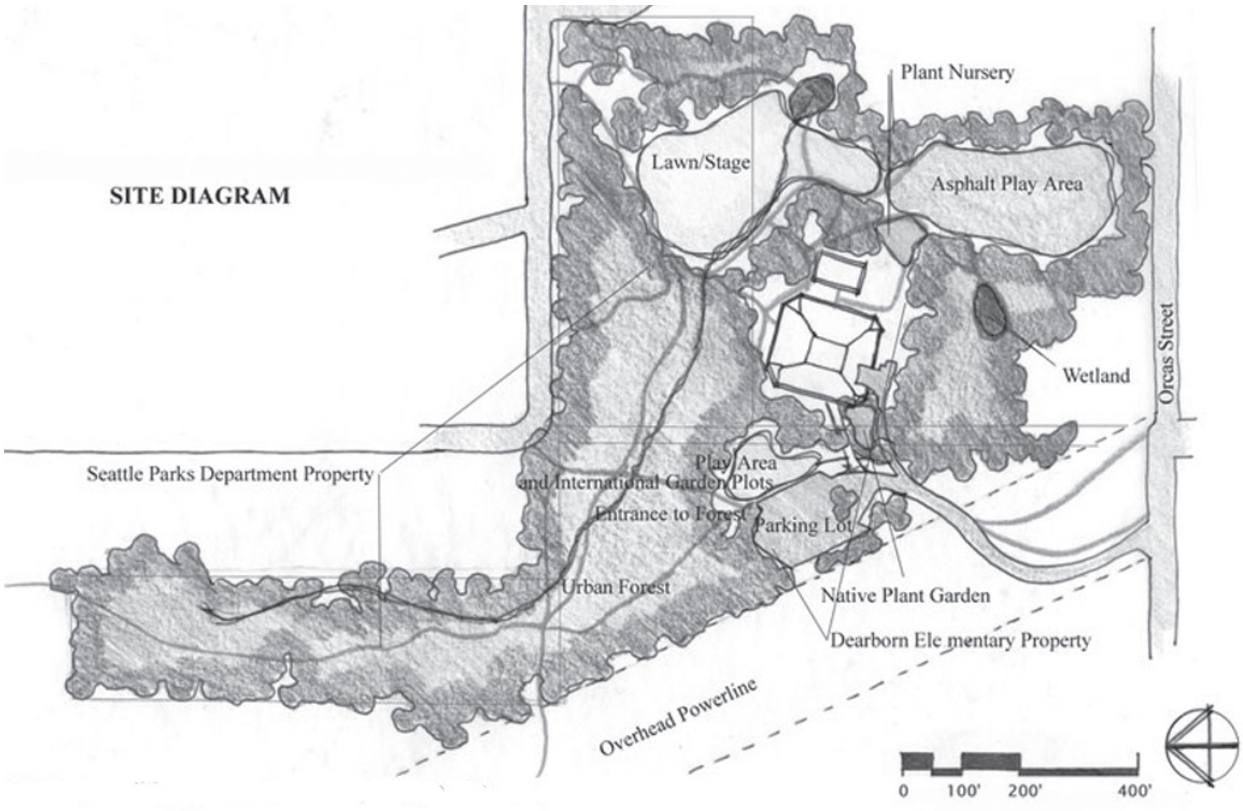

Figure 3. Dearborn Park Elementary School's surroundings include forest areas, a wetland, city park, and power line easement. (Diagram by Anna Tamura, adapted from Allworth Design Group Site Improvements and Woodland Restoration plan, 1998)

In addition to restoration efforts, creative expressions reveal students' personal connections with the forest. Hunt takes the class out at times throughout the year for reflective writing; the students choose a place to sit and write poetry, stories, and reflections. She asks them to name the space they choose. Hunt recalls that two girls named their spot "dreaming place" and another student, who chose a stump, named it "Bob" (Hunt, 2004). Students have painted rocks for the entry that depict plant and animal life of the forest, and this past year the students designed a mosaic project with Earthcorps, which will be mounted near the forest entry this fall.

The wetland also has become a powerful place of learning and community-building. Fifth grade teacher Rebecca Clark works with students in wetland restoration efforts, where they learn to work in groups as well as in this place. Audubon Society has worked with the class. Interpretive signs, a bat house, and piles of dead English Ivy give testament to the students' participation in stewarding this sensitive environment. Like the class studying the forest, these students share their firsthand knowledge as wetland guides. Clark uses the wetland as a curricular context and a place for less formal learning. She brings the students to the wetland at times for lunch and for its calming influence (Clark, 2004).

The school's goal of the environment as an integral focus for learning is being fulfilled, and it is recognized as a model and resource. Earth Day Events held here include various organizations and attract classes from other schools. Student guides interpret the forest and wetland areas on Earth Day and on other days when visitors come calling. In considering potential challenges and improvements, the principal and staff I interviewed see opportunities (Clark, Fairchild, Hunt, Shenberger, 2004). These include design features, such as more permanent interpretive signs in areas and benches for gathering in the forest, as well as means of facilitating student learning with more volunteer mentors. Another challenge lies ahead, as planning is underway for the school's renovation, and the relocation of facilities may impact outdoor learning areas.

REFLECTIONS

Several factors seem to contribute to Dearborn Park Elementary's development as a multicultural learning community, including its diverse landscape context and design, creative partnerships, committed leadership, dedicated teachers, and participatory design approaches. Children's learning experiences in this landscape are a model of participatory design and multiple learning approaches that seem to build community and may foster their ecological literacy. Students work collaboratively in studying, designing, and improving their landscape, and share their insights with others. Teacher Janice Hunt has "noticed students showing more pride in themselves and their school"(Jensen, 2003: B5). There is little evidence of vandalism on the site, and student-made signs call attention to the special qualities of this place.

Figure 4. A sign marks a recently planted area along the forest trail at Dearborn Park Elementary School. (Photo: Julie Johnson)

Figure 5. Dearborn Park Elementary School's wetland entry features children's tiles. The amphitheatre-like sitting space and an interpretive sign are behind. (Photo: Julie Johnson)

Like the Berkeley school featured in Moore and Wong's Natural Learning (1997), participatory design is central to the students' learning in their landscape at Dearborn Park Elementary, although primarily through formal education. The masterplanning process engaged diverse constituents, including children, through analysis, programming and design activities. Children's participation seems to fit middle rungs of Hart's ladder of participation, where children are consulted and informed of decisions, yet their actions are prescribed and they do not play an active role in decision-making.

In realizing the masterplan, classes undertake design and development of site restoration and interpretive elements. Fifth grade students' work on forest plots suggests a high level of participation, in reference to Hart's ladder, as they choose a plot and undertake a process of analysis, planting design

and restoration. They research to develop their proposals and present their ideas for review. Similarly, students using the wetland for learning become well versed in the plants of this environment and what is needed to restore it. As guides of their respective settings, students share their knowledge and values to the members of their own school community and of the larger community who visit. While these curricular-based activities may not offer genuine choice in participation, other opportunities for informal and nonformal education could be developed (per the Berkeley school) and enrich children's choices and types of participation.

It is interesting to note that each of Orr's three features for developing ecological literacy are found in this school. Students' hands-on and extensive experiences enable them to know and care for their landscape. Their teachers and others, such as members of Earthcorps or Audubon, mentor these experiences, and older students mentor younger ones. Texts provide insights, as children study topics such as plants appropriate to their forest plots. Research is needed to examine if and how students' experiences are indeed fostering their ecological literacy, and if this endures over time.

Other factors could strengthen ecological learning and community design, including a more extensive, integrated open space system. Like other Seattle schools, Principal Fairchild notes that fifth graders raise salmon and release them at a creek distant from the school. She identifies a long-term goal to release the salmon at their wetland's creek (Fairchild, 2004). Daylighting this creek as an open space link to Lake Washington would enable rich opportunities for exploration and social action identified in Sobel's environmental education framework for middle childhood and early adolescence.

Another factor that could enrich this community is greater parent and neighborhood involvement, which the Berkeley school's success drew from (Moore and Wong, 1997). Principal Fairchild notes that a school PTA formed this spring (Fairchild, 2004)—an important step in building the school's community and resources. Informally, people visit and enjoy this site, and they are welcomed. A "welcome" rock painted by fifth graders at the forest entrance indicates both the connection students have to this place, and an invitation for its community to grow:

> *The Children's Forest consists of 2.6 acres of deciduous forest whose trees range from 50-100 years old. Once a pioneer town, the forest is now used for environmental education for students in the local Beacon Hill schools. Students are helping to restore the forest to a more natural state. As you walk through you may notice restoration efforts like planting pots, invasive plant species removal and trail renovation. Notice the smells and sights of wildlife and plant life that will surround you on your hike through your forest.*

Figure 6. A gate and interpretive rocks, including a "welcome" rock, mark the entrance to the Children's Forest at Dearborn Park Elementary. (Photo: Julie Johnson)

In an increasingly urban world, opportunities to "notice the smells and sights of wildlife and plant life" need to be part of a child's daily life. This case study illustrates how the development of an ecologically designed school landscape can support learning and foster community. While this school's physical context may be somewhat unique, it offers insights into the values of creating and restoring nature on and near schoolgrounds. In transforming existing schoolgrounds, or locating new schools within an open space system, strategies are needed to make ecological design a reality through participatory design, policies, and programs that enrich children's experiences and engage them as vital members of their community. They then, may carry the lessons of this place forward, as a model for building the future.

ENDNOTES

[1] Programs for school gardens and habitat exist through national organizations, such as the National Wildlife Federation's Schoolyard Habitat Program. Two notable examples of citywide programs for schoolground transformation are the Boston Schoolyard Initiative, which involves a partnership of foundations with the City of Boston, and Seattle's Grey to Green Program, involving city departments, school district, and community members. Dearborn Park Elementary School, described in this paper, received Grey to Green Program funds for its wetland restoration and boardwalk. Two Berkeley, California, schoolyard projects are well documented as inspiring models, occurring at different times: the schoolyard described by Moore and Wong begun in the early 1970s, and the Edible Schoolyard begun in the mid 1990s.

[2] A more extensive discussion of the development of Dearborn Park Elementary School's landscape planning and design is presented in Design for Learning: Values, Qualities and Processes of Enriching School Landscapes by the author of this paper.

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FROM EARTHWORM TO POCKET MONSTER
Childhood Experience of Nearby Nature and Adult Environmental Behavior Over Time in Taipei Min-Quan Elementary School Neighborhood

I-Chun Kuo

ABSTRACT

There is some agreement that childhood experiences of nature are important for humans to develop environmental knowledge and values. There are, however, few longitudinal and even fewer studies focusing on the relationship between children's experiences of nearby nature and their environmental behavior as adults. In this research, a questionnaire was designed to ask four different age groups about their childhood experiences of nearby nature and their current environmental behavior. The four groups each spent their elementary school years in the same Taipei, Taiwan neighborhood at different time periods (1970's, 1980's, 1990's, 2000's) when the character and availability of nearby nature changed rapidly as agricultural villages transformed into urban neighborhoods. For example, those who were children during the 1970's had access to an open channel stream; the 1980's group experienced a partially culverted stream which was completely culverted in the 1990's. The youngest group experienced a new artificially created watercourse above the original creek location during the 2000's. The research findings show that the children's experience of nature declined from the 1970's to 1990's and increased again between the 1990's and 2000's as the places where children played changed. The results also show that an increase in the children's experiences of nearby nature translated into increased participation in environment – related activities as adults. This paper will present a case for why environmental planners/designers; science educators and parents should revalue the importance of nearby nature in creating neighborhoods for rich experiences with nature.

INTRODUCTION

What is the relation between children, nature and animals? Whether cruelty as in pulling apart worms and