

Teacher Inquiry: A Pedagogy that Supports a Sustainable Society

If you wish to make anything grow you must understand it, and understand it in a very real sense.

—Russell Page, *The Education of a Gardener*

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In her article, “Putting the Garden to Sleep: Understanding the Meaning of Nature,” Ursula demonstrates the dispositions and skills for a reflective stance in an internship inquiry project in which she supports young children developing a relationship with nature. By situating her repeated experiences with the children in an ever-changing herb garden, Ursula gives the children opportunities to observe, wonder, ask questions, and understand how the natural world functions. In her pursuit of understanding how to connect young children with nature, she offers a pedagogy that supports a sustainable society. Recognizing that young children can be agents for change and that early education is key in shaping dispositions and actions (Davis 2010), Ursula uses the context of an outdoor space to introduce children to the development of an ethic of caring in their relationships with each other and with the natural elements of the garden.

Ursula develops her conceptual framework around traditions of early childhood pedagogies that align with teaching education for sustainability: use of outdoor spaces, for example, and learning through authentic real-life experiences, integrated curriculum, inquiry-based learning, and involvement of community (Samuelsson & Kaga 2008). At the core of a pedagogy that

supports the concept of sustainable living is the belief that young children are capable as active and informed participants who can affect change and shape the present and future (Davis 2010). The notion of cultures of sustainability can be formed through learning communities in early childhood education settings (Davis 2010). This belief is consistent with approaches in early childhood education that view the child as capable and encourage children as problem seekers, problem solvers, and advocates in their own surroundings. The child is viewed as a co-constructor of her own knowledge and as an active participant alongside the teacher and peers. Learning that takes place in outdoor spaces enhances both the children's and the teacher's powers of observation and their abilities to observe, problem solve, and reflect (Meier & Sisk-Hilton 2013).

Recent emphasis in early childhood curriculum is on aspects of inquiry-based learning and on teaching integrated with nature education (Meier & Sisk-Hilton 2013; Davis 2010). The interplay of listening, observing, conversing, feeling, thinking, and representing are processes essential to teacher research and to the children's inquiry into the nature world. The connected experiences in the herb garden encourage the children to construct complex understanding for deeper thinking that supports children's cognitive development. Ultimately, Ursula learns to use the herb garden as a place to stimulate the children's inclinations to nurture, which promotes stewardship and the development of social and cooperative skills. These skills are fundamental to confronting social and ecological challenges on a more global scale.

In the *2010 NAEYC Standards for Initial and Advanced Early Childhood Professional Preparation Programs* (2012), Standard 6, Becoming a Professional, states that,

well-prepared candidates display a *critical stance*, examining their own work, sources of professional knowledge, and the early childhood field with a questioning attitude. (40)

Using an inquiry-based approach, Ursula implements a process rather than merely using a set of techniques or instructional strategies (Stremmel 2007). Learning to apply an inquiry approach in the context of teaching supports educators as they conduct a self-study that is intentional, systematic, and reflective and that informs teaching practices (Cochran-Smith & Lytle 1999; Rust 2007; Henderson et al. 2012). As Ursula learns to make decisions about the curriculum and studies how children come to know (Piaget 1936; Dewey [1938] 1997; Vygotsky 1978), she fosters the children's dispositions for solving problems and for inspiring curiosity. Operating from an inquiry stance, she and the children collaborate as learners (Cochran & Smith 2002). She interprets her observations, transcripts, and photographs to present her own learning story alongside the children's documented story. She views both herself and the children as researchers who ask questions and use

tools for observation to seek understanding. Through this inquiry process she develops an understanding of how the children build a sense of place in an herb garden, experiencing a parallel growth in their relationships with each other as they share common experiences during the term.

In tangent with this larger goal, she uses an inquiry approach to examine her teaching practices, as we see when she asks these questions: “How do I help a small group of children become a learning group?” and “What is my role in supporting the children’s learning in the herb garden?” She faces the tension of wanting to plan and follow predetermined lessons when she realizes that the children don’t know how to listen and share in the context of a learning community. However, she recognizes through the inquiry process that her growth in the project and the children’s learning process in the herb garden cannot be rushed if authentic and meaningful learning is to occur. Inspired by the underlying principles of the Reggio Emilia experience, Ursula shares the importance of slowing down the pace of instruction to listen, understand, question, reflect, dialogue with others, and plan for subsequent experiences (Edwards, Gandini, & Forman 2011). This inquiry process is consistent with research that notes that when teachers are involved in the study of their classrooms, there is more commitment to long-term professional development (Keyes 2000; Little 2007; Rust 2009).

Ursula’s method of study, which relies on collected observations over time, allowed her to thoughtfully understand how to support the children’s relationships with each other and to develop a sense of place in the herb garden. Using an inquiry-based approach afforded Ursula the opportunity to observe, document, and study the children’s actions and words to better understand their learning processes. Through her review of transcripts, observational notes, and photographs or videotapes, she demonstrated a systematic method for collecting and analyzing her data. This method focused her attention and involved her in sharing her observations with her peers and instructors to arrive at an interpretation, enabling her to plan subsequent experiences for the children. Of particular importance are the transcripts of conversations between Ursula and the children. Her analysis of the types of verbal responses the children gave helped her to reflect upon and refine when and how she posed comments and questions to the children.

Therefore, we see that her findings and reflections from her participation in the inquiry project resulted in a deeper understanding of her teaching practices. Reflecting on her teaching practices, Ursula notes that the recursive cycle of studying and analyzing her data and viewing her transcripts or videotapes gave her an opportunity to understand the impact of her teaching on the children’s learning. An outcome of the study of her observations is her transformation in thinking about curriculum and how to plan based on the children’s intents.

Ursula questioned her role when guiding the children's dialogue. Knowing when and how to pose questions to children is key in learning how to listen for children's ideas that are worthy of continued dialogue. The inquiry process that involves the careful documentation of children's and teachers' words and actions makes visible the teacher's practices and their impact on children's learning. Through the study of transcripts, Ursula could analyze the ways in which her comments and questions impacted the children's verbal responses. The slowing down that Ursula refers to is the recognition that listening to children requires both flexibility and planning. Slowing down means that listening to children's intent requires the teacher to foster children's verbal expression in ways that will encourage them to challenge and extend their thinking while respecting the children's developmental levels.

Another example Ursula provides when examining her role as teacher was her insight as to how to follow the child's interests when designing the curriculum. Forman and Fyfe (2011) propose that when teachers negotiate the curriculum, there is a shift in the teacher's role from "teaching" children to "studying" children. This is evident when Ursula was flexible in her decision to shift the focus from her original plans in order to follow the direction of the experiences she and the children were having in the garden. She set aside her lesson plans on decomposing to better understand the actions of the children as they unfolded in the herb garden. Her emphasis on science content and her focus on traditional skills of comparing were transformed in order to understand how the children came to learn about the natural elements, and to find out what they understood and didn't understand about the ways they were interacting with this living environment.

Her learning process was evident as she grappled with finding the best way to develop a learning community with the children. She recognized that merely grouping children together with a common goal was not sufficient to foster a sense of wonder and an exchange of ideas. The young 3-year-olds had little, if any, experience in knowing how to share ideas, ask questions, or use beginning discourse skills to hold a conversation. Turner & Krechevsky (2003) identify key components of a learning community that promote inquiry, and the authors propose a different understanding of traditional small group work. These key features include (a) wondering together as children engage in experiences in which they are learning from each other; (b) sharing and comparing representations or ideas in discussions with each other; and (c) communicating ideas to a larger audience for collective understanding. Ursula built foundations for this type of group identity when she worked with the children, who shared common goals and the same experiences by observing, discussing, and representing their collective knowledge about the herb garden.

In addition, Ursula used the framework for the key components of a learning group to inform her strategies. First, she intentionally used sentence frames such as “I wonder” and “I have an idea” to model for the children how to observe and to foster their curiosity as the basis for building an atmosphere conducive to wondering together. Second, she fostered sharing and comparing within the groups by photographing the children’s encounters in the garden and then holding conversations about the photographs to encourage the children to revisit their collective experiences. She introduced collaborative drawing in order to direct the children to a collective focus. Observational drawing allowed the children to notice small details about the herb garden and to see the connections among the living elements. At the same time, each child made his own markings for sharing, which noted the individual child’s contribution within the group. In one of the last experiences of the term, Ursula captured a photograph of the children as they walked together as a group, which symbolized for her the development of group identity. The children initiate holding hands, giggling together and walking in rhythm as one, which resulted from their shared experiences over time and their shared communication when they talked about their observations, ideas, and emotions related to their explorations in the herb garden. Last, Ursula enhanced the building of collective knowledge by including the families’ participation. She had them develop a lullaby book that describes the bedtime routine for each child and communicates the children’s story of the winter bedtime routine for the herb garden. This way, the memories of the garden experiences could be shared with the families and children.

In the short journey lasting four months, the respect, responsibility, and relationships formed with the herb garden were evident in the children’s actions. As they came to understand how to interact in the herb garden; they learned how to treat plant life and gave the garden attributes of themselves as a way of understanding how it is alive, just as they are. They demonstrated ways of giving to the garden when they developed a lullaby (with a wooden sign that remains in the apple tree), cleaned out the herb beds, created signs for the herb garden, understood the importance of carefully handling plant materials, learned to walk safely in the garden paths while staying on designated pathways, and observed seasonal cycles in the herb garden. The children’s idea of a lullaby song is an example of the children adding to their own schema of what is animate and what is inanimate and of the needs of plants as they transfer their knowledge about themselves to the garden (Gelman 2002). Encouraging the children to relate to the natural elements in the garden by discussing how the apple tree can “get hurt” when hit or that the garden beds need to be “put to sleep” carefully or how to “keep the garden beds” fosters a way of relating to the garden that evokes empathy.

Ursula recognized the importance of children observing other adults in the garden and the caring relationship the herb gardener had with the plants in the shared space. Even the herb gardener's actions could be used to plan her ideas, offering the children a way to connect with their experiences as they learned to represent the ideas generated in their initial visits. Observing the herb gardener's actions imparted to the children a sense of stewardship. When the gardener was available to provide the children with explanations about their actions in the garden, she encouraged the development of a sense of place that is worthy of respect and care. Joint attention used in learning with objects or with other people is an essential aspect of learning (Reed 1996; Chawla 2009). Chawla argues,

When a child and other significant people in its life notice elements of nature together, with appreciation for other things' own way of being rather than fear or destructiveness, it lays a foundation for finding intrinsic value in nature. Noticing something with interest in this way implies that it is worth noticing. (14)

Chawla concludes that positive experiences in the outdoors can lead to an emotional bond with nature.

In this learning story, Ursula demonstrates how important it is to prepare teachers through the introduction of a systematic inquiry process for the development of skills and dispositions that encourage successful professional development in one's own classroom. Her focus on the use of outdoor space to foster inquiry with children supports a growing body of literature that integrates science, literacy, and the visual arts to foster relationships with nature (Meier & Sisk-Hilton 2013).

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