Notes and Reviews

Learning and the Experience of Meaning

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nights, it was possible to find one's way with the help of the stars, something that was easier in winter than in summer when the trees were all leafed out. On moonlit nights, the woods were alive with mys-

I spent my first years teaching in surroundings of the utmost simplicity. Although this was long before the digital age made its invasive entry into all aspects of private life, the students who came to us in rural Vermont still

found the lack of distractions challenging. There were no televisions, no trips to the mall, no hanging out in town. We had an old 16mm movie projector for which we would rent movies from time to time. There was plenty of work to do, places to explore, things to learn. Boredom was not something to flee from, but to overcome. We led a more or less communal life. Hiding from one another was difficult; hiding from oneself more so. Simple things, the ones we often take for granted, took on a new significance. The fads and hype of what some still insist on calling the "real world" lost much of their draw.

Once I watched one boy, who was 13, taking leave of the place before traveling home with his parents for vacation. David didn't notice me. He wandered through the small woods that separated the living quarters from the main house with its dining room and classrooms. He greeted each stone, each tree, reminded them of the moments they had shared, told them he hoped they would be well while he was away, he thanked them for being there and promised to return soon. He squatted down at the curve of the path where a smooth, rounded knob of granite rose gently out of the surrounding earth. "Good-bye my noble friend," he said. "You never let me lose my way in the dark. Thank you." And he patted it with his hand.

I know how he felt about that chunk of granite. I, too, had counted on it being there to guide me as I felt my way along the path on dark, moonless nights. On clear

terious shadows. But in the dark, it was the granite that served as a touchstone.

For David, as for me, this stone was an object of significance in a very real, deeply experienced world. The boy and the stone remain inseparably linked in my memory. It is more than 30 years since I watched unseen as he took leave of "his" woods. Watching him converse without pretense with the trees and stones the touchstones of his life there — taught me something about teaching. I learned something in that moment: In our world, designated teachers may be necessary, but it is not from them that a student learns the most. A student learns the most important lessons from his or her surroundings. Learning is a contextual reality. The best teacher knows how to bring the world to life for his students. A student learns through what lives in the world around him or her. If there is something you wish your students to learn, you must find the way to bring it to life for them. It becomes a real part of the world they experience as real. No curriculum, no program can replace this.

Some years ago, during an exploration of life during the fall of the Roman empire, I told my young students stories of the Desert Fathers, the early Christian ascetics living in northern Africa. In one story, Selma Lagerlöf writes of a monk who stood silently on one leg praising God. He stood so still that a bird searching for a place to build its nest settled in the monk's tangled locks. His heart went out to the bird and he remained standing there through the weeks that it took for the eggs to hatch and the nestlings to fly away.

When time for recess came, I left the classroom briefly to get my snack. I returned to find the children gathered by the big windows looking out to the garden. They were very quiet. As I approached, one of them signaled to me that I should move quietly and slowly. Outside two students were standing in the snow, their arms outstretched, a boy and a girl. On the palms of their hands and on the top of the wool hats, I could see bird feed. We all waited in silence, unmoving as the two waited for the birds to come. And come they did. The longer the two stood there in absolute stillness the more birds came to pick the seeds from their hands and heads. Recess passed, the next period began and still we stood there silently at the window watching the birds, watching our two fellow students.

One spring, I visited a high school science teacher from a school on the shores of Lake Champlain in Vermont. I had been invited by the school to visit her classes and give her feedback on her teaching. She was in the middle of a botany block. Each day she took the students out into the early springtime woods and meadows surrounding the school to observe. These observations began in silence, then moved on to descriptions of the plants. The teacher described the almost reverential mood among the students as they observed the simple woodland flowers blossoming among the debris of the last winter.

My first experience of her students was listening to them speak about a tree they had discovered on the edge of a field the day before. It was an old beech tree with four strands of barbed wire running through the middle of its trunk. Although some of the students had seen trees that had grown up around old wire fence before, none of them had ever given them much thought. The discussion that ensued concerning the growth process of a tree was lively and thoughtful. When the teacher brought the discussion to a close by asking the students to write three adjectives describing the tree, several of them chose words that expressed some aspect of the resilient, gentle strength and majesty with which the tree had grown around the wire, encasing it without breaking it. One boy struggled to find just the right word for the power of the tree's growing. There was little doubt that the observation and the thoughtful reflection on what they had seen had made a deep impression on each of them.

Later that morning I accompanied the students on a field observation. They were heading out to observe

dandelions. We left the schoolhouse, crossed the road and followed a path to a small grassy area between the train tracks and a parking lot. The grass was deep green and well-tended. The whole area was aglow with the bright yellow of a multitude of dandelions. There were so many that it was impossible to walk through the grass without crushing the cheerful blossoms. Yet the students waded merrily in, settled down into the sunlit grass and began to observe the flowers. It wasn't long before the first flower heads flew through the air; one girl began to weave dandelions into her neighbor's hair; a boy picked an especially large flower and began dissecting the stem, then the flower itself. Although a mood of attentiveness and interest was more or less maintained, reverential would not be the word one would use to describe the students' relationship to the dandelions. But discipline was not lost. Students shared their discoveries with one another around the loose circle that had formed as they had settled into the well-flowered grass. The analysis grew more pronounced as students began probing the mysteries of the flower head.

Little by little the dandelion, as an experienced wholeness, disappeared to be replaced by a searching for the right words and phrases to describe the intricacies of the discrete parts of the heads of the flowers they had so blithely dissected. Magnifying glasses were added to the mix. Evermore intricate structures became apparent. The groups' interest began to diverge. Some continued wrestling to articulate and bring order to what they were discovering; others relaxed into the fresh grass and warm sunlight; two boys began to test relative ignition points by focusing sunlight through their magnifying glasses.

I spoke with the teacher about this session later in the day. She was disappointed that her students had spent so little time getting a feel for the plant as a whole, something that surprised her after having experienced them with the woodland plants and the trees. We spoke about the gesture of the plants, the radiating movement that appears in each of its stages; how the bud forms deep down, nestled in the rosette of leaves close to the ground, then rises upward on the stem to burst into the light. I spoke of my own practice as a teacher to steer clear of spontaneous "field dissections," i.e. tearing things apart to find out what's inside of them. If something is to be dissected, it should happen in the focused environment of a lab. When outside, students should have the opportunity to experience the plant in its wholeness, within the context in which it lives and grows to be moved by its living presence.

The following morning the teacher returned to the experience of the dandelions the previous day. Briefly, she shared her sense that they had moved too quickly into what Annie Dillard might call a mode of plucking and analyzing. Then she asked the students for their thoughts. As we went around the circle, it became apparent that many of the students had reached a similar conclusion when writing up their reflections of the day the evening before. They too expressed feeling they had not been as respectful of the living dandelion as they had, for example, been of the trillium. One pointed out that it was the complexity of the dandelion's flower that had led them to look so much more closely at its parts. Another remarked that there were just so many of them, it didn't seem to matter.

The teacher proceeded to diagram what they had observed of the intricacies of the flower head on the blackboard. At each stage, she asked the students if what she had drawn reflected their memories of what they had observed. When the diagram was complete, she went through it, naming and explaining the various parts. When she pointed out that what they had assumed to be petals in their rather rough and tumble field observations was in fact the corolla, one boy burst out: "These are all little flowers! The dandelion is covered with little flowers!" A ripple of wonder went through the room as the students grasped the concept of a composite flower and suddenly saw the common dandelion in a new light.

For these students, the concept of a composite flower was rooted in their experience of coming to know the dandelion. Every step in this process contributed to their experience of meaning. They observed the

dandelion in its context. They observed themselves in relation to the dandelion. They reflected on the difference between their behavior with the dandelion and the trillium. Having become aware of their experience of inner connectedness with these plants, when they took the step of coming to an understanding of what was specific and essential to the dandelion, the dandelion resonated more strongly in them. It moved more than just their intellect.

This approach to science — the discipline of learning to understand the natural world, the world of the senses — seems to make sense. Ideas that do not move us are of little value in the great scheme of things. It does not matter if I know about photosynthesis, about plant communities, about various forms of blossoms if this knowledge does not heighten my awareness of my relationship to the natural world.

The human being is part of a greater context. Each of us has a role to play in the evolution of this context. The way we understand it, the way it lives in our consciousness, affects our ability to do what it asks of us.

Encounter-based science teaching can take us a long way towards meeting this challenge. With information so readily available through online sources, schools no longer primarily face the task of imparting knowledge about things. The new task is to guide students into deeper, more immediate encounters with the earth and to give them the opportunity to begin to experience how the blossoming of understanding sparks feelings of wonder, respect, and a sense of commitment to the world they are learning to know.

