

Teaching Permaculture in a School Garden

At Greensboro Montessori School over 200 kids garden each week. That's a lot of kids and a lot of gardening!

A Montessori school is a good place to garden. Maria Montessori believed each child needed intimacy with the natural world. Otherwise, she reasoned, how would the senses or the soul or the mind grow? But wonder in itself was not enough; it had to be nurtured by competent understanding of how natural systems work. That's a proper setting for Permaculture, wouldn't you agree?

As a practitioner of Permaculture I'm committed to sustainability, to regenerative systems that keep getting better. After 15 years in my several gardens, I have a good idea of how to do that with a natural ecology: the gardens at Montessori cover two acres and they're bountiful, diverse, and inspiring. But what about the school's social ecology with its complex relationships and diverse groups? And, further, how do you get a garden program continually funded and your livelihood supported? All three aspects deserve attention if you and the garden are to be sustainable.

After six years at Montessori, I've discovered that the solution is analogous to garden design: create a web of relationships among the gardens, people, and an institution that supports each part. When students are engaged, the garden gets taken care of. When the gardens are healthy, people support them. And when everyone gets involved, the gardens become central to the daily life of the school

That's more or less what I want to say in this essay: teaching Permaculture in a school requires a practical knowledge of whole systems. It is more than being good at natural systems. It's also being good with people and, if you want to stay in business, drawing continual support. That sounds like the three-legged stool of sustainability: ecology, equity, and economics. Well, why not?

The Beginning

When I began, it was at the invitation of a 5th grade science teacher, Susan Thompson, and her class. She had been at my house and liked it: ponds, forest gardens, swales, no-tilling, and 20 kinds of fruit. Who wouldn't? And she knew I was interested in teaching others. Her students came over and looked around. Maybe it was the apparent disorder (not like a classroom), or the fish in the ponds, or the fruit to nibble (hunter and gatherer instinct revived), or the sense of calm and beauty...whatever, they liked what they saw. Let's do it at school, they said!

We designed a large, 60' x 60' garden. It looked a lot like my back yard with its curved beds, an herb spiral four feet high, and forest gardens. We gathered materials: leaf mold at \$50 a truck load, wood chips for free, stones on the ground, 4' x 8' sheets of cardboard

and newspaper, straw bales, wheelbarrows and tools. We set a date: Saturday morning, 9:00-noon with pizza to follow. I brought two college students, kids brought their parents, and teachers and the headmaster, Frank Brainard, pitched in. We covered every square inch of the hard sub-soil with cardboard, lime and green sand, formed our beds with leaf mold and our paths with chips and stones, planted trees, shrubs and seedlings, and even finished the herb spiral. When the pizza arrived, we had laid the last straw layer on the beds.

That was six years ago. The first garden was such a success that the school asked me to draw up a design for the entire school. That design hangs in the front entry; there are many more gardens now and just about everyone gardens. How did this happen?

The Gardens

There is something about Permaculture gardens that attracts people. When people walk into my home garden or the Montessori gardens, they usually stop and pause a moment to take it all in. They see a diverse array of shapes, colors, plants, materials, houses (birds, bats and toads!), and textures. It's not quite what they expected; it's more than they expected. In Permaculture, when we talk about whole systems, we're often talking about aesthetics, about the beauty of an integrated system where the "fit" of each element is both functional and beautiful. I think that a person implicitly recognizes this and her mind "nests" (as we say of organic systems) or "rests" (as we say of satisfied people) in the mind of the ecology around her. I've seen it happen many times.

The students make things happen. They build their own gardens and they learn the skills. They learn why we don't till, why we compost everywhere (even the chips making up the paths become soil), and how organic gardens (and systems) work. Their hands learn to handle small seeds and make toad homes. They sense when plants are dry and what weeds are edible. After several years, they know their way around; they become native to the place.

My college students and I have a plan when we meet 12 kids for a 30 minute session in the garden. We have an Opening Circle (Breathe, Stretch, Look.), two activities in rotation, and a Closing Circle (Thank you garden. or What I liked was...). Many times, most of the time, they are not lost in wonderment, although they will stop anything to pick up a worm (put it back), catch a toad (let it go), or eat some sorrel (have some more). One session we just watched a praying mantis munch on a bee! Sometimes I want a lot to get done; sometimes I relax.

I'm more enjoyable when I relax, but the garden's not necessarily happier. When we garden, we ask nature to do some unnatural things under unnatural constraints. For instance, the action of a plow or shovel in turning over soil is quite unnatural and it takes the soil a while to recover its nitrogen and the general mayhem that ensues. That's why, I tell them, we don't till the soil.

As a Permaculture gardener we agree to give the garden the diversity of species and conditions that let it go about its business. When we build a carpet pond, we throw in the new water (often chlorinated city water), diverse plants for oxygen and filtration, fish, snails, and an inoculation of rich soil with its organisms and bacteria, and then we let the emerging ecology sort it out.

As we grow in our knowledge of natural systems, we disturb less and distribute more. People are often surprised to hear me claim “low maintenance” for Permaculture gardens, but it’s true and it’s not magic. It’s about a self-organizing system.

Here’s an example of self-organizing. There are over 200 pairs of little feet running (walk, don’t run!) through the sacred groves. Plants get squashed, stones overturned, early fruit pulled off. We’re getting feedback: “Adjust!” We’ve adjusted: broader paths, recognizable entries, signs, narrower beds, forest gardens off to themselves. It’s worked with one forest garden; our relative absence allowed the ground cover of penny royal, white clover and peppermint to spread and cover. Less work for us, more health for the natural system.

Here’s another example. Our gardens, in their abundance, ask us, “What will you do with all this surplus food?” Like Michael Pollen says in *The Botany of Desire*, the relationship between plants and humans works both ways. While we assume control, we conform our actions to the plant’s benefit. Not only do we begin to select and save the best seeds, but we scamper about to find uses for the excess food. We think: eat it, but also, why not create a student’s market and sell it? Or why not give it away? This year we equipped a kitchen and prepared snacks and lunch. From this perspective, the kitchen and the convivial table is a human response to the abundance of the harvest. We do this at the plant’s bidding and desire them again next year!

People

I’ve already written about people, mainly kids in the garden. Now I’d like to write about the complex social ecology of a school.

When you establish a garden in a school, you’re bringing in something new. You may be encroaching on someone’s space or taking money desired by another program. You may not have the support of the top administrator or the guy in charge of the lawns. Some teachers may be skeptical and you’ll be taking time away from other subjects. After all, what business does a garden have being at a school?

I have begun and failed in two other schools. The gardens were beautiful and productive, but the social entanglements extinguished the institutional and financial support. In one case the principal never liked the program; teachers had initiated it and funded it, but he made sure the funds dried up. Was he teachable? Yes, I think he was. Now I would spend time with him, invite him to the garden, and gain his confidence. Lao Tzu says not only to let him feel it is a good idea, but that it is his good idea.

In another school the grounds person resented everything about Permaculture. He couldn't recognize it as gardening: no pesticides, no tiller, no barren soil, fewer weeds. And besides we chose a plot that he loved to mow. He made life miserable for us. Was he teachable? I'm not sure. My practice questioned his entire operation. Maybe I could have appealed to him in some way like giving him produce from the garden or showed more interest in his machines. I do know I would include him in the early discussions when I first encounter and talk to the teachers and staff of a school.

Montessori's teachers and staff are exceptional in every important way. I've never worked with such a good group. Several of them are talented gardeners and have been especially supportive. But like other school professionals, they are busy and don't have the extra energy to take a separate workshop on Permaculture. I thought I would teach the faculty and staff, set up the gardens, and be gone in two years, but I was wrong. They need me to stick around, set up and run the gardening program. I fill a niche like an art or music teacher. I work part-time, 10-12 hours a week, and the gardens are my classroom. (Since I also teach at our local state university, I appreciate the difference. I'm part-time there, too.) I am held to the same high standards as all Montessori teachers are and am slowly learning the "Montessori way."

There is an amazing respect for each person in the school; I'm lucky to be a part of that flow. The top administrators, Frank and Nancy, are about the most humane and encouraging people you could hope to work with. They establish the flow and make sure it keeps moving. Yes, there is a hierarchy, but I believe it's fairly loose. People talk to one another and leadership roles are passed along. I get positive comments about the garden from just about everyone. They appreciate the beauty, the hard work, the learning that takes place, and they say so. And I appreciate them and say so. That's a powerful incentive to relax and do your best.

I could not do my work without the assistance of college students who volunteer, gain college credit, or in the case of two of them, work for wages. They co-teach with me in every class, help me organize the classes and reorganize the garden, and stay a while to help with special projects. This year Walter, Amber and Megan have been deeply involved in developing the curriculum and bringing their academic fields, respectively, cultural anthropology, film and dance, into play in the garden. (See two accompanying articles.)

At first, I simply asked for a few college volunteers. Then they wanted to stick around and work another semester or keep the garden going during the summer. I began to realize that they wanted more knowledge and a deeper relationship with the earth and me. Gladly, I responded. I took in more of them and spent more time with them. We share some meals together, we shoot hoops, and we're closer than I envisioned.

In gardens and schools, natural ecologies and social ecologies are always intersecting and Permaculture is an excellent tool for harmonizing them. Graham Bell in *The Permaculture Way* places people front and center. "Our central concern," he says, "is

designing for people.” And, “if the people-care ethic is not foremost in all our minds, then any designing we do becomes academic and amoral.” At Montessori we have learned to design for the students and the entire community. Thus our gardens are designed for teaching, rambling, tasting, observing, and engaging the whole person. Our students, in turn, learn the skills of relating intimately with the earth, skills they will carry into their adult lives.

Support

The gardens are economically sustainable because students learn and grow within them and the school supports this. In the gardening program’s Mission Statement we’ve identified several of our goals; we keep discovering more. It is no surprise that Maria Montessori placed such an emphasis on active encounters with nature. Once the gardens began, they kept growing with a momentum of their own, convincing parents and students that they are something to invest in.

I think the families realize something good is happening and want to support it. When I watched the young students walk with their family through the garden on Grandparent’s Day in early May, I saw them pick not only the standards like lettuce, strawberries, and snow peas, but also the “weeds” like lamb’s quarters, dandelion flowers, and chickweed. Their taste buds had been altered, more alive, open and discriminating. They ran to be the first to pick and hand out the French sorrel leaves (“sour plant”) and the arugula (“pepper plant”). They had knowledge of slow, organic food that challenged the dominion of fast, industrial food. For many of them the raw is better than the cooked, and parents or grandparents, who had labored with getting them to eat salad or peas, noticed this.

So the gardens are well funded and I am paid for my work. I can purchase plants, soil amendments, blocks for terraces, tools, and the time for two college students. Parents contribute more through the Annual Fund Drive and by responding to special needs such as trees for the orchard or a greenhouse. The school promotes the garden program as a part of a Montessori education and the presence of the garden has drawn some families to the school. Everyone relaxes and eats in the garden, and some summer programs are created around the garden.

The gardens are multi-functional and can draw financial support from various parts of the school budget. We could go even further, such as establishing a market garden and selling or giving away produce as we do in the summer when school is not in session. We could even establish an institute to teach other schools about gardening programs.

I often think about public schools and their need for similar gardening programs. Could the same program be supported by a school council and the money allocated? Could we find qualified teachers or gardeners to teach organic gardening? I’d like to try and at Montessori we offer a model. We can show others what and how to do it. And we can create a pilot program or two, ones in which my college interns can play a part. In fact, while sharing a meal together at my house recently, the subject turned to public schools

and without hesitation my college students proposed we form a team that would take gardens to the public schools. It would require some work, but maybe our city is ready for it. “A garden in every school,” they cried.

I think of self-organizing systems, Michael Pollen, Maria Montessori, Alice Waters, and Thomas Berry. If people need contact with nature in order to become human, then schools need gardens. Gardens will “reach out” to schools and, in turn, schools will “choose” them as a classroom. Gardens and schools will learn to nest within each other. Good food, taste, and intimacy with the earth will return to student’s lives.

And what does the earth tell us? Primarily, it tells a story, an ancient story of the peace and prosperity of humans dwelling in harmony with the land. The harmony is partly given, partly achieved. We must listen and we must work. While most of us have forgotten how, it can be taught and that lesson is the central theme in a Permaculture garden. Thomas Berry says in one of his poems, “It takes a universe to raise a child,” and I’d like to think that a Permaculture garden is a microcosm of that universe and each child a part of that evolving story.