

## Education and Agriculture

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1903. *How to Make School Gardens: A Manual for Teachers and Pupils* by H.D. Hemenway  
“The idea of having a garden connected with the school is a very old one.”

“The school garden tends to develop the best traits in the children, and to create in them a love for the beautiful.”

1916. *Democracy and Education* by John Dewey

“Gardening, for example, need not be taught either for the sake of preparing future gardeners, or as an agreeable way of passing time. It affords an avenue of approach to knowledge...”

1994. *Plain: The Magazine of Life, Land and Spirit*, Fall. “What Really Matters,” by John Gatto. Mr. Gatto taught in New York City public schools for 26 years and was named New York State “Teacher of the Year.”

“We live in history’s wealthiest political State, which has been locked in a consumption trance for a hundred years, devouring its children, its families, its hills, sky and water in order to buy machinery to talk to. The government schools have been the church where such training in continuous consumption occurs. It’s time to change that and begin to teach what really matters.”

1995. *Mother Jones*, Interview with Alice Waters, chef at Chez Panisse, Berkeley, CA.

“Teaching kids how to feed themselves and how to live in a community responsibly is the center of an education.”

In talking about agricultural education we can mean education about agriculture or education in the skills needed to produce food. If we are teaching the skills to grow food, is it with shovels and compost using an ecological model or with tractors and farm chemicals using an industrial/mechanical model?

## The Poetry and the Reality

Recently I had to drop some papers off at the Bridgeport, Connecticut elementary school where Suzanne teaches fifth grade. It was before school and some of her students were in the cafeteria having breakfast. I ventured into an atmosphere thick with the odor of sausage, pancakes and syrup to say hello to them and to check out their breakfast and our tax dollars at work.

Each four-ounce soft-pak of 100%-pure pineapple juice from concentrate had poems such as this on the side. Take the Pledge / The earth is our home / and we will join forces / To guard against waste / and protect its resources.

The juice concentrate came from Thailand and the Philippines. Other days, the kids are served apple juice from Austria and Argentina, or orange juice from Florida and Brazil.

The sausage and pancakes were served from a warming oven in single-serve two-compartment aluminum trays covered with a piece of aluminum foil. Each child also received a carton of milk (BST contaminated?), a plastic fork and knife and a one-ounce plastic package of syrup with a large KRAFT logo. (Kraft is owned by Philip Morris. This is just one example of how food entitlement programs use the poor to transfer money from taxpayers to giant corporations.) The children seemed to be eating the breakfast, although there were pancakes and sausage in the trash cans mixed with aluminum trays, plastic utensils and milk and juice cartons.

The hot breakfast is a special event. Usually each child gets a disposable plastic bowl with less than one ounce of cereal sealed inside by a brightly colored label. “Lucky Charms,” “Trix” and “Honey Nut Cheerios” are popular and served often. “Total” is sometimes served, but is frequently thrown away by the children. (Too many vitamins?)

The clash between the sentiments of the poem on the side of the juice box, and the reality of this waste and energy-intensive feeding program makes it obvious that a radical change is needed. This costly system malnourishes our children while it connects them to widespread social abuses and ecological disasters. And, if all the food were organically grown, it would make little difference. The “Contract With America” aspires to eliminate the school breakfast and lunch programs. In many parts of the country, bringing in Taco Bell or Pizza Hut has been the response.

Unfortunately the dysfunctional hypocrisy that the U. S. feeding system presents to these children before school even starts, is endemic in the public, and especially urban, schools. We know that the well-being of the “whole child” is important for learning, yet these children suffer from an incredible range of family, health, social and legal problems. Administrators stress the importance of standardized tests and increasing test scores while allowing overcrowded classes, lack of books, materials, personnel and services to be the norm.

We would like to inspire these children with visions of the future, yet our society has almost no role for these children other than as consumers of junk food, clothing and video entertainment. The television tells them to “grab it now!” and to “have it your way.” This makes it more challenging to do hands-on activities. Many children spend more time watching television than they do in school. Student attendance however, is very good. The school is safe, warm, and filled with caring adults and friends.

### **An Active Classroom, an Ecological Approach**

Upstairs in the fifth grade classrooms in Bridgeport, beans and corn are growing in milk cartons filled with compost from classroom worm farms and the school compost system.

Students record observations and make labeled drawings in their plant journals. They are learning the differences between monocots and dicots and about the symbiotic relationships between the grains and legumes which fed most of our ancestors. This lesson especially connects with their social studies of the Native Americans and writing and literature based on *The Sign of the Beaver*, the story of a young settler and an Indian boy sharing an unlikely friendship in the Maine woods just before the American Revolution.

The fifth grade teachers encourage healthy snacks, discourage junk food and sodas. (Yes, some fifth graders think a caffeinated soda and a bag of chips make a complete breakfast and, that's what they eat.) The students have finished off most of the sunflowers seeds from last year's garden, made cookies from a pumpkin they grew in the school garden, and will make potato chips in the next few weeks from the potatoes they harvested.

Last fall, the students built a fence and two cold frames. Later in the winter, they will use drop spindles and cardboard looms to turn fleece into cloth.

These children, like most of the rest of us, would rather be doing something real with their hands and minds than just be sitting at a desk. A situation where one adult must deal with 30 or more children in a small room for six hours a day promotes the most rigid kinds of structure and requires nearly constant crowd control. To release the children and the teachers from this structure and tap into the powerful potential for learning (when the body and the mind work together) requires more supervision. Even one more person cuts the student-teacher ratio in half and that makes a significant difference. Fortunately, since these kids are so much fun to be around, many people like to come in to work with them.

### **Outdoor Learning and Real Work**

Just bring out a shovel, a bow saw or a hammer and show the children what to do. Their energy and enthusiasm seem limitless. There are never enough tools. Their eagerness to do this real work teaches us the value of having real work to do. As they work, they find sensory delights and things to ask questions about: the smell of a freshly sawn cedar post, a sprouted acorn in the compost, a grub or a worm in the soil. In the land of asphalt, plastic-wrapped food and televised entertainment, these real things have great appeal. We've also found that the lessons these children learn in the 1000-square-foot garden surrounded by asphalt are carried with them. During a tour of a suburban Nature Center, Suzanne's 5th graders knew more about the natural processes in the forest than their adult guide. Many of them come back a year or two later and talk about their home gardens.

### **Educating Consumers**

These participatory methods, and the implication that gardens might be an important part of these children's futures, are in stark contrast with the most well-funded agricultural education. Large farm organizations and agencies are ready to "educate children about the role of the farm

in providing food and products for the city.” (National Farm-City Council, Inc.) Ag in the Classroom is sponsored by the USDA “to help students understand the important role of agriculture in the United States economy.” I imagine that they believe that few, if any, of these children will be involved in food production.

It also seems that every large commodity group wants to educate young consumers. An article in the October, 1994, Produce Business titled “Goodbye Memorization. Hello Multi-Media.” surveys the field.

“There simply is not enough money to do something for every age group, so you earmark your most receptive ages,” says Barbara Robison, manager of consumer affairs for Sunkist Growers. Maggie André, vice president of communications for the Oregon-Washington-California Pear Bureau echoes this and adds, “We must get to children while they are young and are developing food preferences that will stay with them for a lifetime,” she explains. “We know that taste preferences are set very early in life, so we created a program for pre-schoolers to introduce them to the taste of onions, and we link the farm to the family,” explained the program director for the National Onion Commission.

The California Artichoke Advisory Board, the Washington Apple Commission, the Leafy Greens Council and the California Carrot Advisory Board all distribute educational materials which target young consumers. Pork producers, cereal makers and fast-food restaurants feel the same imperative to target children as consumers of their products. Dr. Helen Caldicott, founder of Physicians for Social Responsibility, says that McDonald’s uses advanced equipment to monitor the brain waves of children watching sample commercials until it finds one that makes them go ga-ga. If you ever ride past a McDonalds in a bus with thirty children, you can see the effects of some very powerful brainwashing.

The Potash and Phosphate Institute has a coloring book for young students, Fun with the Plant Nutrient Team. Its characters - Nitrogen, Phosphorous, and Potassium with N, P and K on their hats - make plants grow. (Should NOFA produce a comic book with the organic matter team, OM, OM, and OM?)

These agricultural booster materials tell the kids that the farmer grows the grain and ships it to the processor/packager who ships it to the market and out it comes as, for example, “Lucky Charms”. Those boosters of the system are less quick to point out that each bowl the students get for breakfast contains only a half-cent worth of grain (its growing already subsidized) and a half-cent worth of flavorings or vitamin spray. This costs the taxpayers somewhere between 30 and 50 cents per serving, including additional packaging, transportation and administrative costs. Then, the local taxpayers get to pay for the bowl’s disposal, by burning it in an incinerator.

The much trumpeted abundant, low-cost food in America seems not to trickle down into the urban areas. The poor spend a third or more of their income on food. Fresh vegetables and whole grains are not readily available. Based on the abundant trash, these elementary students snack mostly on small bags of chips at \$4 to \$6 per pound and little plastic containers of colored

high fructose corn syrup water priced at \$4 per gallon. The chips are loaded with fat and salt and frequently artificial colors and flavors. The drinks are artificially flavored and colored. It's hard to imagine a more damaging diet, especially for young African-Americans. In the suburb nearby, where the schools are better funded, the classes are smaller, the skins are whiter and the taxes are lower, giant new (and large old) supermarkets advertise free food.

Although there are a lot of problems in the schools that aren't related to the food system, its negative effects extend into the lives of these children. Many of them wouldn't be in Bridgeport if large-scale, chemical agriculture, and racially-biased government policies hadn't pushed their parents and grandparents out of rural areas of the south, the Caribbean Islands and Central America.

Twelve years ago, I began working with high school teachers in New Haven on the design and implementation of a food and agriculture curriculum. One of the successful outcomes of this effort is the High School in the Community ecology course which is conducted on a small organic farm created each spring in a city park. For about eight weeks, four hours each day, high school students study ecology in a wood-stove heated shed, tend animals, raise vegetables, make compost and explain various aspects of their farm to visiting elementary school children. We found that in many cases, this class really engaged students in learning for the first time in their school careers. The farm class stimulated questions and encouraged the students to make connections. Even if food issues weren't important, the educational results recommend this style of learning. The New Haven Ecology Project is working to create a school using this model.

I started doing this work, in part, because there were issues that I felt were important: organic vs. chemical agriculture, energy use, and the loss of genetic diversity, to name a few. However, I soon learned that talking about these issues with most urban students was sort of like planting seeds on asphalt. Our culture doesn't encourage thinking, much less critical thinking. There are high school students who can't read, and whole classes filled with students who have no idea of what a democracy is.

During the ecology course, however, on the farm with animals, plants and a compost system, students are interested and excited. The asphalt begins to break up. First hand knowledge provides a context for exploring more complex issues. In many cases, this knowledge is what their parents and grandparents grew up with.

Working with high school and elementary students has strengthened my belief in the necessity for very major changes in the current food system. There is no incentive in this system for anyone to provide these children now or as adults with fresh healthy food. The only jobs it provides are low-paying, indoors, and an integral part of a system which pushes unhealthy food and causes ecological damage.

The most likely path toward a socially-just, environmentally-sound and democratic food system is for almost everyone to participate in growing, processing and cooking some of his or her own food.

These students, although battered by poverty, disease, abuse, and our culture, are so excited by sawing a board, planting a seed, turning compost, cooking and helping that I can imagine them creating a just and sustainable, locally-sufficient society. They and the way nature responds to our care, are my greatest sources of hope.

NOFA and its members play key roles in bringing this vision of the future to reality. Keep up the good work. There's lots of it to do.

### **Living on the Earth, November 10, 1995: The Power of a Place**

It was just a bit of asphalt, undistinguished from the acres of contiguous asphalt that made up that Bridgeport school yard and the streets around it. Then a 25 by 40 foot section of blacktop was removed.

That was just four and a half years ago, the beginning of the Hallen school community garden. Now it is a place of magic and wonder, a 1,000 square foot oasis of ecological diversity. The honey locust tree the first class planted is big enough for the fifth graders to climb, and to provide welcome shade. Last week the students discovered a salamander under one of the rocks they've used to outline the growing beds. Frilly red and bright green lettuce, as well as pac choi and mustard are growing beautifully this fall despite the nip of frost.

The physical change was abrupt but simple. The asphalt was torn up and taken away. Then dirt and some pretty fresh manure were brought in as a gift by the contractor, who was a gardener himself.

It is the kids, plants and compost that have worked this magic. The beginnings of a forest emerge. One volunteer oak tree is now about ten feet tall. A half dozen other young tree seedlings (including a beautiful apple and more oaks) have grown up on their own in the perennial border on the north and west sides of the garden. These trees remind us that underneath most of the asphalt and lawns in this region, a magnificent mixed hardwood forest is waiting to grow.

From the very first day in the garden, there was a sense that this was going to be great for Suzanne's fifth graders. We had one thousand square feet covered with smelly manure. None of the kids was going anywhere near that "dooky," so Suzanne and I started turning it over. Before long, one by one, the kids wanted to help. Soon we didn't have enough shovels. Everyone wanted to participate.

The first spring, besides the honey locust tree, the students planted a lilac, daylilies, raspberries and enough greens to have a salad party. They also planted sunflowers, tomatoes, broccoli, herbs, collards and more.

When the students came back to school the next fall, they found 10 foot tall sunflower plants with big heads full of delicious seeds and lots of red ripe tomatoes, where just one year before there had been asphalt.

Every year, Suzanne's class has been able to plant and harvest enough greens to have a salad party in the fall and in the spring. For the past three years, the other fifth grade teacher, Ginny, has also worked in the garden with her class, so there are 50 to 60 children regularly involved. This year the students seem better than they've ever been at the fine work of weeding and transplanting.

All this has come about with two hours work, one afternoon a week, weather permitting. Grubs and worms fascinate the children. A salamander or a snake are real treats, but even the peppermint, lemon balm and winter rye are exciting to many of the students. This 1,000 square foot area is an ecosystem now. It evolves as ecosystems do, toward greater fertility, diversity, complexity and stability. Its success has inspired school gardens in Wilton, New Haven and elsewhere. The garden reaches out to the neighborhood around it, too. Kids garden at home. They take cuttings, plants and seeds to grow in their yards. Hardly a week goes by without a former student stopping by on the way home from middle school to visit while we work. Many of them are proud of their gardens. The last several years, some fourth grade boys with a special passion for plants, have gotten permission to join us, too.

Educationally, using a garden as a context for learning is a wonderful strategy for accomplishing the objectives of the curriculum. It abounds in hands-on science lessons and math problems. Selected literature involves farming and native and early American topics, which connect well with the garden. Education is integrated and meaningful for the students. For many of them, the garden provides a connection to their grandparents who grow vegetables in Bridgeport, down south, or in the Caribbean.

So, if the state of things has got you down, try gardening with children. Their interest, curiosity and enthusiasm, and nature's response to their care, build my hope every week.

There's lots more asphalt and lawn we could tear up and begin to turn things around.