


2011

Cultivating Knowledge In The School Garden: New Ways Of Teaching Literacy To ESL Students

Michele DuRivage
SIT Graduate Institute

Follow this and additional works at: https://digitalcollections.sit.edu/ipp_collection

 Part of the [Bilingual, Multilingual, and Multicultural Education Commons](#), [Curriculum and Instruction Commons](#), [Elementary and Middle and Secondary Education Administration Commons](#), [Elementary Education and Teaching Commons](#), and the [First and Second Language Acquisition Commons](#)

Recommended Citation

DuRivage, Michele, "Cultivating Knowledge In The School Garden: New Ways Of Teaching Literacy To ESL Students" (2011). *MA TESOL Collection*. 495.
https://digitalcollections.sit.edu/ipp_collection/495

This Thesis is brought to you for free and open access by the SIT Graduate Institute at SIT Digital Collections. It has been accepted for inclusion in MA TESOL Collection by an authorized administrator of SIT Digital Collections. For more information, please contact digitalcollections@sit.edu.

Cultivating Knowledge in the School Garden:
New Ways of Teaching Literacy to ESL Students

Michele Louise duRivage

Submitted in partial fulfillment of the requirements for the

Master of Arts in Teaching degree

at the SIT Graduate Institute,

Battleboro, Vermont.

November 1, 2009

IPP Advisor: Elizabeth Tannenbaum

The author grants the SIT Graduate Institute permission to reproduce and distribute this paper, in whole or in part, in either electronic or in print format.

Author's Signature _____

© Michele Louise duRivage, 2009. All rights reserved.

This project by Michele Louise duRivage is accepted in its present form.

Date _____

Project Advisor _____

Project Reader _____

Abstract

My thesis project includes a combination of materials development and classroom-based research. In my paper, I explore existing garden-related curricula, and create original garden-based lesson plans to teach literacy to fourth grade ESL students. This curriculum development project contributes to the field of ESL in its innovative garden-based pedagogy. The field study took place during the spring semester of 2009 at Increase Miller Elementary School in Westchester County, New York. Using nature as inspiration for writing descriptive essays and poetry, the ESL students at Increase Miller produced imaginative writing pieces, using their own voices to express their thoughts. The students' body of work represents a growth in their literacy skills, embracing the garden as fertile ground for teaching.

Educational Resources Information Center (ERIC) Descriptors

English (Second Language)

Literacy

Writing Exercises

Teacher Developed Materials

Elementary School Teachers

Contents

Introduction.....	1
Gardening as Pedagogy.....	3
ESL Learning and Garden Pedagogy.....	7
Curriculum Planning.....	8
Plan for Long Beach Field Study.....	10
Plan for Westchester County Field Study.....	14
Garden Disappears.....	21
New Focus.....	23
NYSELSAT Preparation.....	24
Post NYSELSAT Lesson Plans.....	36
Kindergarten Garden-Related Lesson Plan.....	44
Journal Writing.....	46
Essays/Poetry.....	48
Workshops.....	49
Bedford Environmental Summit, January 2009.....	49
Edible School Gardens Workshop, March 2009.....	51
Using School Gardens, Outdoor Classrooms, and More to Teach Health, Wellness, and Sustainability Workshop, June 2009.....	52
Interviews with Educators Using Garden-Related Curricula.....	53
Cathy Clare—Greenhouse Facilitator, Katonah Elementary School.....	53
Ellyce Cavanaugh—ESL Teacher, Springhurst Elementary School.....	56
Reflections.....	59
Conclusion.....	60
References.....	62

Additional Resources.....64

Appendix.....68

 Student Work.....68

 Photos from Long Beach Field Study.....74

Acknowledgements

I would like to express my deepest gratitude to my sister, Marguerite, for inspiring me to step into the journey of writing my thesis, 26 years after having finished the MAT program at SIT. Her guidance and wisdom has played an invaluable role in the process (and her preparation of healthy, locally grown food helped to sustain me!). I would also like to extend my appreciation and gratitude to ESL teacher Sandy Costin for her flexibility, support, and good humor in the classroom. I'd like to thank my children for their patience and love. Lastly, I'd like to thank Jesse Gershman for her editing assistance, and Charles Cowley for his technical support.

Cultivating Knowledge in the School Garden:

New Ways of Teaching Literacy to ESL Students

Wendell Berry shocked the American public when, in his 1989 “The Pleasures of Eating,” he proclaimed, “Eating is an agricultural act.” Since World War II, the United States has steadily increased the distance between the garden and the table. Industrialized foods—turned fast food diet for the average, unhealthy American—dominate the ways we think and act in the early 21st century. I am one of the minority who resonated with Wendell Berry’s proclamation, and did even when I was a young graduate student. In each location of my transient life, I have grown my own herbs and greens. As a mother of two, I insisted that my children eat organic produce, even long before it was fashionable to do so. And whenever possible, my children put their hands into the earth so that they, too, would understand the wisdom of Berry’s words. Put another way, gardening and agriculture form the bedrock of my lifestyle.

As I began to contemplate a meaningful closure to my Master’s Degree from the School for International Training, it made sense that I should weave my life’s passion into my Master’s Thesis Project. I had been teaching French, and some ESL, in the public school system of Westchester County, New York, and I noticed that a couple of schools had fledgling gardens. I then found myself imagining ESL syllabi that would build the literacy skills of elementary school students from “farm to table”—that is, from the school garden to the cafeteria.

I began reading and researching school gardens throughout Westchester County, as well as school systems in California where the weather supports year-round gardens, and where ESL programs are well developed for the state’s large immigrant population.

After months of correspondence with educators, and a visit to Long Beach, California, I decided to perform a hands-on research project in the Katonah-Lewisboro School District in Westchester County, and The Healthy Harvest Garden at Lincoln Elementary School in Long Beach. My project included collaboration with an ESL teacher, two classroom teachers, and a Garden Educator, implementing an ESL literacy curriculum using a school garden as our major text.

I spent the 2009 spring semester working in the Katonah-Lewisboro (K-L) School District. Together, these teachers and I created a curriculum drawing upon a variety of resources, including local educational workshops, other schools and communities, and various websites. My Independent Project (IPP) includes a combination of two criteria: (a) a materials development project, and (b) a classroom-based research project.

Unfortunately, my plans for Long Beach never materialized.

I encountered several obstacles while pursuing my research, reinforcing the reality that very little pedagogical activity was taking place around the garden for ESL learners. But rather than dissuade me, these obstacles served to inspire me to probe deeper into the literature on school gardens and discover new resources for teaching English as a Second Language. As a result, my thesis project encompasses a rich blend of hands-on, real-life experience and theoretical study.

The hands-on, materials development component of my project takes the form of garden-based lesson plans. So little study is being done on this topic that the creation and implementation of these lesson plans plays a paramount role in my thesis project. I realized that the ideal way to develop the field of using a garden-based curriculum to teach literacy skills to ESL students is to engage in the practice of lesson planning and

assessment. With the guidance, support, and knowledge of school personnel, I enthusiastically embraced my mission and created my own set of lesson plans for the ESL classroom.

Gardening as Pedagogy

In the age of Michael Pollan's *In Defense of Food* (2008), school gardens have captured the imagination of educators and school principals. These gardens are powerful teaching tools that allow for a broad range of content learning, including science and nutrition, math, social studies, and language arts. Gardening brings life to the standards of content learning. A garden is an ideal place to teach concepts (e.g., plant science), offering hands-on experience to students of all skill levels, various learning styles, and diverse backgrounds. "Garden language is universal" (Scully, 2002).

In the United States, most of the school garden curricula are developed and implemented in California, both for the weather and the food growing endemic to this region. The Center for Ecoliteracy—located in Berkeley, California—is dedicated to education for sustainable living. Founded in 1995 by Fritjof Capra, Peter Buckley, and Zenobia Barlow, the center's mission is to "provide information, knowledge and support to the vital movement of K-12 educators, parents and others who are helping young people gain the knowledge, skills and values essential to sustainable living ... Nature is our teacher" (Center for Ecoliteracy, 2005). The aim is to connect children with the natural world through the use of projects and programs in outside classrooms, particularly the school gardens. Embracing the approach of integrating in-class learning with hands-on experience in the garden, the center's ecoliteracy seminars attract people from around the world. These seminars offer coaching for teaching young people to develop the

knowledge, skills, and values needed for balanced, sustainable living. These seminars also offer in-depth curriculum development, keynote presentations, school sustainability assessment (lesson observation and demonstration lessons), and technical assistance (green architecture, practical advisors, and school garden and cooking program designers). “Through our initiative, Smart by Nature: Schooling for Sustainability, we offer both a strong theoretical framework and practical resources for combining hands-on learning in the natural world with curricular innovation in K-12 education” (Center for Ecoliteracy, “Our Mission,” 2005).

The Center for Ecoliteracy is also a prestigious donor agency that gives awards and grants to schools—most notably the Edible Schoolyard, located on the campus of the Martin Luther King Middle School in Berkeley, California. The Edible Schoolyard’s mission is to create and sustain an organic garden and kitchen classroom, integrating the school’s curriculum and lunch program. Alice Waters, chef and founder of Berkeley’s world-renowned Chez Panisse restaurant, inspired the King School’s principal, Neil Smith, to plant a school garden. A parent and two science teachers then became involved with the project, also. Two years later, the ugly, asphalt, school parking lot was transformed into an edible garden, and the unused 1930s cafeteria was renovated to serve as the kitchen classroom.

The Edible Schoolyard has been evolving for twelve long years now, and it has become the most important thing in my life. It has also served as the incubator for the universal idea that I term ‘Edible Education’ – a hopeful and delicious way of revitalizing public education. (Waters, 2002)

The grant also enabled the school to hire staff for the project and propel the

success of the garden program. It is important to note that Alice Waters's project illustrates that school gardens do not have to be planted on the grounds of wealthy school districts only. Food and school gardens cross economic lines, making it possible to utilize agriculture for all classroom teaching. Realizing this from my study of Westchester County schools, as well as several systems in California, I decided that ESL learning and gardens could—and—should go together.

The work of Alice Waters at Martin Luther King Middle School created a template for schools to follow. The Edible Schoolyard idea has since blossomed into a universal concept, inspiring schools to create gardens for learning. The outdoor garden classroom is rapidly gaining popularity among educators who are designing successful garden programs now known as “seed-to-table.” The “seed-to-table” concept encompasses the experience of schoolwide planting, harvesting, and cooking, providing hands-on experience for students, teachers, parents, and other members of a community.

A second eminent organization for garden pedagogy is Life Lab—a non-profit organization, working in the field of science and environmental education since 1979. This group helps schools to develop gardens where children can create “living laboratories” for the study of the natural world (Life Lab, 2009). The Life Lab Garden Classroom is a two-acre, interactive, educational garden located at the Center for Agroecology and Sustainable Food Systems Farm at the University of California, Santa Cruz. The lab works directly with educators, assisting them in using school gardens and hands-on science programs. Their program offers teacher-friendly, hands-on units, integrating a core science curriculum (covering concepts from the earth, life, and physical sciences) within the school garden environment. It is a garden-based curriculum for

grades K-5, complete with instructional manuals and even suggested connections to language arts, math, and social studies.

Each summer, the Monterey Bay Science Project of the Life Lab Science Program coordinates a special Summer School Academy program in the tri-county area of Santa Cruz, Monterey, and San Benito. Through this program, teachers use a combination of state-adopted curricula and the Life Lab garden curriculum to teach English Language Development to students using hands-on, garden-based lessons. The main focus of the program is to teach academic literacy. But instruction is put into the context of science and applied in the garden. According to the manager of the Monterey Bay Science Project, Alicia Dickerson, a foremost benefit of this program is that it puts language into a “real context” for the students:

The students go from lacking academic self-confidence, to gaining a tremendous amount of confidence about themselves and their potential. In the garden, they learn how to ask questions about the world and make meaning for themselves, coming away with new ways of thinking, new concepts and new words.

(Dickerson, n.d.)

The experiential learning in outdoor spaces has recently been endorsed by President Obama’s “No Child Left Inside” program, which encourages greater use of state parks (Buck, 2009). First Lady Michelle Obama recently planted a vegetable garden on the White House South Lawn—the first garden to be planted at the White House since Eleanor Roosevelt’s “victory garden” during World War II. This victory garden modeled home farming to the rest of the country, when the majority of its citizens were on food rations. Today, the organic garden will provide food for the first family’s meals.

But, more importantly, the Obamas' garden sets an educative example to families—and especially children—for healthful, locally grown fruits and vegetables. “My hope,” the first lady says, “is that through children, they will begin to educate their families and that will, in turn, begin to educate our communities” (Davies, 2009). Here is garden pedagogy at its finest.

ESL Learning and Garden Pedagogy

In my research to date, I have been able to locate only one source for a well-developed garden pedagogy that is geared for ESL students—the Monterey Bay Science Project's Summer School Academy, funded by Life Lab. Each summer, 25 teachers and 600 students follow a curriculum for English Language Development (ELD replaces ESL in California), using science, language arts, and social science curricula. The main focus of this summer school is to teach literacy, but with a focus on literacy in the context of science, applied in the garden. Doni Kwolek Kobus, an emeritus professor for California State University, sums up the value of garden pedagogy:

A school garden presents an ideal context for teaching interpersonal and cross-cultural content, skills, and values. Aspects of social education and lessons in cultural diversity can be intended outcomes of classroom gardening, along with knowledge of plants and soil. When children examine gardening in a cross-cultural and global context, they develop an increased appreciation for human and plant diversity. They begin to grasp how geography, economics, and history play a role in gardening today and, in the process, learn how their decisions as cultivators, consumers, and citizens may have a local and global impact. (as cited in Center for Ecoliteracy, 2007)

Curriculum Planning

As I set out to formulate my thesis project around school gardens, I found myself in new territory in terms of developing ESL curriculum for the academic year. My first set of plans were developed for an after-school garden program—The Healthy Harvest Garden at Lincoln Elementary School in Long Beach, California (which, as mentioned earlier, never came to fruition). Carola Bundy, Garden Educator for the program explains:

The program, largely funded by an instructional school garden grant advocated by Maria Shriver (wife of California governor, Arnold Schwarzenegger), has become a model program for the Long Beach California School District. Since the school meets the criteria for eligibility for the national government “Title One – Free Breakfast/Free Lunch” program, the garden program is offered as a free after-school activity. The program is in very high demand—250 students out of 1500 have enrolled for the popular program, but due to current budget cuts, the program can only accept 100 students. (personal communication, March 17, 2009)

The students of Lincoln Elementary School are predominantly Hispanic, with a very small Cambodian population. For the most part, the students participating in the garden program are second language learners. Based on the fact that the school operates on a year-round schedule (with four different tracks starting at different times of the year), students have the unique opportunity to work in the garden throughout the calendar year, enjoying the benefits of the extended growing season in California. In the winter, the students plant greens (which started as seedlings), such as broccoli, spinach, swiss

chard, kale, and cabbage. In the spring, they harvest the crops for ingredients, prepare a bountiful salad, and celebrate “Eat Your Greens” day, and the famous Meyer lemons grown at that school are used to make salad dressing. The idea that “if they grow it, they will eat it” comes to life on this day. In the summer, the students pick corn, squash, and beans (the Native American Three Sisters crops), and celebrate their harvest on “Our Big Soup Day.” A stir fry is prepared for over 200 people, and corn is grilled at a school BBQ.

The curriculum for the garden program is based on what needs to be done during a given season. The tasks range from planting seedlings and preparing the soil, sifting and turning compost, and planting and harvesting. Students learn nutrition (e.g., comparing the nutritional content of different colored vegetables and graphing the vitamin content of lighter-colored greens and darker greens), science (e.g., study of soil and compost), and language arts (e.g., vocabulary). The Garden Educator utilizes music and games to enhance the students’ capacity for learning. For example, songs from the Banana Slug String Band’s “Singing in Our Garden” (2002) are played while working in the garden, or the students play a matching game to learn the names of the garden tools. (See *Photos* in *Appendix*.)

In preparation for my field study in Long Beach, I created a week’s lesson plans that included student interviews with extended family members and community elders about foods they ate in their native countries (the students would research and compare fruits and vegetables with different origins). During the interviewing process, the students would record a typical recipe used in their families’ native countries, prepare their native dishes, and, at the end of the week, enjoy a potluck dinner with the families. In addition

to conducting interviews, students would research cultural holidays and the symbolism connected to certain fruits and vegetables that are prepared during those holidays.

Plan for Long Beach Field Study

Lesson Plan for April 6, 2009—April 13, 2009

Title of Lesson: The Healthy Harvest Garden—Long Beach

Subject: ESL Student Interviews

Language Objectives:

- To practice writing sequentially (for recipe writing), using transition words (first, then, next, afterward, following, etc.).
- To learn new food-related vocabulary. (Vocabulary: grain, maize, kernel, medicinal, aromatic, culinary, ingredient, combine, pre-heat, origin, source, consume, influence, teaspoon, tablespoon, sprinkle, pinch.)
- To practice speaking and presentation skills.

Secondary Objectives:

- To learn about their own cultural backgrounds, and to share their culture with the community.
- To appreciate the importance of food in different cultures and the role it plays in connecting to family and community.

Activities:

Monday

- Introduce ourselves, and share what our favorite part about being in the garden is.
- Split students up into pairs and have them interview each other, elaborating on the above question.

- Students present their interviews to the rest of the group, and are invited to ask questions.
- Time permitting, students demonstrate to their partners their favorite garden activity.
- Students brainstorm sample interviewing questions for food/recipe interviews (e.g., What are some common crops—vegetables, fruits, herbs, grains—that are grown in your native country, and what is a typical dish made or recipe used?)

Homework:

Students begin the interviewing process at home—asking either a parent or an extended family member about a typical, traditional dish eaten in their native country. During the interview, the student and family member(s) will discuss typical foods that are grown and eaten in their native country. By the end of the week, the students will have completed the interview (in written form), as well as a written recipe, dictated by their family members (there may be some translating needed to be done). The students will bring back to the garden classroom their written interviews (at each stage), and we will correct them together in class. The students will continue this process throughout the week, culminating in having prepared (with their families) their dishes. Then we will all enjoy these dishes in the form of a splendid garden feast.

Tuesday

- Read about Native American foods and culture. (Book choices: *People of Corn* by Mary-Joan Gerson (1995); *Three Stalks of Corn* by Leo Politi (2003); *Native American Gardening* by Michael J. Caduto and Joseph Bruchac (1996).)
- Discuss the “Three Sisters” crops (beans, corn, squash), as well as other Native American crops (strawberries, pumpkins, peppers, potatoes, sunflowers, peanuts,

pineapples).

The “Three Sisters” have been planted by traditional Native American gardeners throughout many different regions of North America. It was the Haudenosaunee (Longhouse or Iroquois tribe) who originally planted this type of garden. These three plants all benefit each other, and even help each other grow: The corn supports the beans; the squash leaves shade the soil, preventing weed growth and repelling bad bugs. These three crops played a very important role in the lives of the Native Americans—both in agriculture and nutrition.

- Students role-play as the typical, early-Native Americans harvesting food for a feast—allow the students (divided into small groups) 15 minutes to prepare role-play, and use garden for stage and props.

Wednesday

- Read *Carlos and the Squash Plant* by Jan Romero Stevens (1999).
- Review new vocabulary, and ask students to share stories about their home gardens, what grows in their native countries, or what grows in southern California.
- Ask students if they can think of any fairy tales associated with food and a particular culture (for example, *Jack and the Beanstalk*).
- Play “I Spy” game, using adjectives and background of the particular herbs, vegetables, and fruits grown in the school garden. Try choosing crops that were mentioned in the some of the books that have been read.

Thursday

- Read *Flavor Foods: Spices and Herbs* by Meredith Sayles Hughes (2000).
- Go over new vocabulary.

- Ask students which herbs they are familiar with, both at home and in the school garden.

Then ask students if they can categorize the herbs, i.e.:

Aromatic

lavender

Culinary

basil

Medicinal

chamomile

- Have the students go around in small groups and pick a few different herbs, and present to the group the different uses for the herbs they picked.
- Discuss (while amongst the herbs) how the odors of herbs can both attract and repel good insects (e.g., ladybugs) and repel pests (e.g., aphids)
- Give students the option to create a short poem on herbs—they can work in pairs or small groups for this.

Friday

- Feast Day—students and family members bring in and enjoy their homemade dishes.

Follow-up Activities:

- Create a menu using school garden crops.
- Draw a map and locate particular ethnic groups' plants, and trace their influences around the world.

Assessment:

The clearest form of success will be evident in the students' weeklong project of interviewing family members and writing/preparing a recipe.

- Reviewing/correcting students' final written interviews and recipes.
- Participation in garden classroom activities—role-plays, poetry, question-and-answer period (speaking and listening comprehension skills).

Unfortunately, these lessons plans never materialized. On the eve of my

departure, I received a communication from the teacher with whom I had planned to work at Lincoln Elementary. She was not available for the two weeks I was planning to stay in Long Beach, and there were no other teachers available to assist me in implementing my project. We tried to arrange different dates, but were unsuccessful. So I decided instead to refocus my efforts solely on Westchester County and the Katonah-Lewisboro school district.

Plan for Westchester County Field Study

As I turned my focus to Westchester County's Increase Miller Elementary School, in the Katonah-Lewisboro (K-L) school district, my intention was to enhance the plant science curriculum by creating lesson plans that would both facilitate ESL students' understanding of the science curriculum (to meet fourth grade standards) and help these students to improve literacy skills. Both of these objectives were high priorities for my hands-on research project.

Over the course of my first two weeks in the field, I observed the elementary classes conducted by the Wellness Coach, and "pushed in," that is, assimilated into the ESL learning environment for fourth grade students. There is a very small ESL population in this school, with a total of six students in the fourth grade, all of whom are American-born Albanians, speaking their native language at home. The students come from well-educated families that have enjoyed financial success in the New York metropolitan area. Their parents play an active role in their education, providing support for their academic achievement. Homework is taken seriously, and whether from the parents, an aunt or uncle, a cousin, or a sibling, the students receive guidance on a regular basis.

For my study, I developed multiple lessons plans to achieve the objectives of increased literacy and understanding of the science curriculum, implementing those lesson plans at the end of the first week.

Week One—March 11, 2009

I assisted Denise Martabano—the Health, Wellness, and Sustainability Coach—as she conducted a lesson on plant propagation. The entire fourth grade planted seeds in trays marked with the plant’s name and date of planting, covered the trays with plastic wrap, and left them on the window sill. Afterwards, I “pushed in” for the ESL students in their classroom while helping them record their work on a Propagation Record Table handout given to them by Ms. Martabano. The students were to record their daily observations of the plants’ growth.

ESL Lesson Plan

Language Objective:

- To practice vocabulary and spelling related to plant propagation and colonial herb gardens. (Vocabulary: seed, peat pellet, propagation, soil, observation, seedling, sprout, division, medicinal, woodlands, native, mature, rural, culinary, aromatic, herb, sow, merchants, townsmen, landowners, savory, horticulture, cutting.)

Secondary Objective:

- To learn about the importance of colonial gardens taught in the fourth grade social studies curriculum.

Materials:

- Vocabulary cards.
- Colonial Garden worksheet.

- Herb handout.
- Potted herb plants.

Activities:

Monday

- Read *Silver Seeds* by Paul Paolilli and Dan Brewer (2003), and introduce vocabulary used throughout the book. Have students attempt to explain meanings of words and act out the definitions.
- Students take turns re-telling the story and acting out scenes.
- Students list new vocabulary words, while teacher writes on whiteboard.
- Students play a matching game with vocabulary cards (vocabulary words written on index cards), matching illustrated plant cards with correct vocabulary word.
- Students label and color handout illustrations of a colonial garden and present to the rest of the group, describing a typical day in the colonial garden.
- Give students the option to role-play. (Characters: cook, herbalist, chemist, farmer, merchant.)

Wednesday

- Read *Peter Rabbit* by Beatrix Potter (1991), and introduce colonial garden vocabulary used throughout the book. (Vocabulary: chamomile, mint, rosemary, sage, hyssop, lavender.) Have students attempt to explain meanings of words and act out the definitions.
- Students take turns re-telling the story in their own words.
- Students talk about their own home gardens and what is used in their families' kitchens.
- Bring in and identify potted herb plants (e.g., basil, oregano, lavender, thyme, and

lemon balm). Ask students to categorize these plants into groups (i.e., aromatic herbs, culinary herbs, and medicinal herbs).

- Students color and label handout illustrations of herbs.

Homework:

- Interview family, asking what common herbs are used in their cooking.
- Students will write out their interviews, and enter into the computer if possible.

Friday

- Have students share and act out their interviews (one student plays the interviewed family member while another asks questions).
- Generate list (on whiteboard) of herbs mentioned and typical dishes eaten in their native country, and match those herbs with potted plants in the classroom.
- Surprise students with a pizza! Have them discuss pizza ingredients, and give them option to sprinkle ground herbs (oregano, basil, thyme) on their pizza.

Assessment:

- Assess students' oral proficiency and listening skills by carefully observing each student's presentation of a typical colonial garden.
- Collect the written interviews and check for writing/spelling proficiency.
- Ask students to comment on what they liked most about the week's activities.

Reflections:

- I would perhaps have the students work more on plant vocabulary—have one student orally describe the words while another student attempts to guess the word; maybe make it a competition.
- Recognizing different herbs was difficult for students, but fun to reinforce when we had

pizza!

- I would perhaps have the students practice interview role-play in class, before they conduct interviews at home. Also, it might be useful to give students a form with interview questions to use while conducting family interview at home.
- The role-play of a colonial garden proved rather challenging for the students. I would allow for more time to learn vocabulary before role-playing.
- The students were very engaged and animated while re-telling the *Peter Rabbit* story.
- The hands-on activity using the herb pots was very effective for word recognition.

Week Two—March 20, 2009

I assisted the Sustainability Coach while she conducted a lesson on seed dissection—she demonstrated dissection of a lima bean in the classroom. I “pushed in” with the ESL students while we dissected a kidney bean and viewed it with a magnifying glass. The students illustrated what they observed, and labeled the parts of the seed on a handout.

ESL Lesson

Language Objective:

- To practice pronunciation of difficult plant/seed vocabulary. (Vocabulary: seed, cotyledon, embryo, reproduction, cycle, plumule, testa.)
- To practice writing in sequence form, using transition words (first, then, next, before, after, finally, etc.)

Secondary Objective:

- To learn and review the parts of a seed.

Materials:

- Illustrated cards of seed parts.
- “BrainPOP Junior” computer game (1999).
- Plant and seed worksheet.
- Post-its.
- Scissors.
- Tape.
- Stapler.
- Markers.
- White construction paper.

Activities:

Monday

- Read *The Tiny Seed* by Eric Carle (1991)—first, “picture walk” (students tell/predict the story in their own words), then read aloud.
- Students take turns re-telling the story in own words.
- Students list new vocabulary words, while teacher writes on whiteboard.
- Review definitions.
- Students play a matching game with cards illustrating parts of seeds—matching the correct names with the pictures.
- Students play “BrainPOP Junior” (1999) computer game, reviewing parts of plants and seeds.
- Students write a paragraph on “I’m a Little Seed” handout (Foster & Hale, n.d.)—each student imagines that he/she is a little seed, writing about what happens to them from the

time they are planted in the ground, how they grow, and what might happen to them once they have grown.

Homework:

- Students label and color a plant and seed handout.

Wednesday

- Read *From Seed to Plant* by Gail Gibbons (1993)—first, picture walk, then read aloud.
- Students re-tell the story in their own words.
- Students generate a list of plant/seed vocabulary—assign a student to write on whiteboard.
- Students take turns reading their “I’m a Little Seed” paragraphs. Allow them to act out their paragraphs if they choose to.
- Have students make flipbooks that illustrate the progression from seed to flower. Have them present/demonstrate to the group, using sequence writing vocabulary.

Homework:

- If they have not already, have students finish flipbooks, and write out the sequence on paper (“First seed is planted in the ground,” etc.).

Friday

- Weather permitting, bring students outside to share their flipbooks and written work with each other.
- Allow students to pantomime to each other and guess the different stages of plant growth.
- Take students to the school library and look for fun picture books on plant/seed growth.
- Check/observe/record the growth process of the seedlings on windowsill.

Assessment:

- Homework tasks—written interviews, handouts for labeling plant/seed parts, flipbook.
- Observation of oral and written work in class.
- Feedback from teachers and the students themselves.

Reflections:

- The first weeks were a success; the lesson plans I developed met the objectives of increasing literacy for second language learners.
- Computer game grasped students' undivided attention, enhancing their knowledge and their ability to name parts of a seed and plant.
- The flipbook was time consuming, and difficult to start—I would allow more time in future lessons; excellent exercise for using sequencing vocabulary.
- The students demonstrated great enthusiasm while sharing their flipbooks and their oral presentations; I was very pleased that the students were practicing their literacy skills within the fun and trusting environment that I had created.

Garden Disappears

Unfortunately, three weeks into my fieldwork—just before spring break—the school administration made a decision to put all work in the school garden on hold. One of the parents on the school's Garden Committee has a child (a student at the school) who is handicapped, and the garden is not handicap accessible. As a result, the school decided to delay activities in the garden until handicap accessibility was installed. To add to the disappointment, the district eliminated the position of the Health, Wellness, and Sustainability Coach, who had conducted gardening lessons in conjunction with the fourth grade Plant Study Unit.

My initial response to the school's decision to temporarily halt garden activity was one of frustration and uncertainty. After having spent weeks preparing my research, meeting with teachers, and gaining approval from the school's administration to conduct my thesis work, I was faced with the reality that I may be forced to pursue my project at a different school district. This was a bit discouraging—I had begun to build a successful, professional relationship with the teachers I had been working with in the Katonah-Lewisboro district, as well as a trusting relationship with the ESL students.

So I sought out other schools where I could potentially begin my thesis work anew. Eventually, I located an elementary school in a nearby district that had both a school garden and an ESL population. Since I had been a substitute teacher at this school for the past few years, and had spoken with the Garden Director, I felt comfortable approaching the principal despite the timing—it was near the end of the school year. I met with one of the ESL teachers who appreciated my ideas for creating a garden-based curriculum for the fourth grade English Language Learners (ELLs), and specifically lesson plans for teaching literacy. The ELLs were currently studying the poetry section of the English Language Arts (ELA) curriculum, so we decided to focus on creating lesson plans for teaching poetry. However, the school principal rejected my thesis proposal due to insufficient notice. I chose not to explore this option when I received an email from him:

I am concerned because our garden is already planted and growing, so I am not sure about the experience the students would be able to have. Additionally, the end of the year is very busy and our fourth graders have already completed their poetry unit. (personal communication, 2009).

In all fairness, the principal did leave the door open for the future, but I decided to not pursue this avenue, as there were too many obstacles. A second door had been closed to the pursuit of my fieldwork, and I needed to re-think my strategy. I decided to continue my work at Increase Miller Elementary, substituting the school garden with the school's inner courtyard.

My overall plan to collaborate with the ESL teacher, the fourth grade classroom teacher, and the district's Wellness and Sustainability Coach at Increase Miller Elementary was interrupted after the first few weeks of the start of my thesis project. The plan was to develop integrative curriculum materials for the Plant Study Unit in fourth grade science. Along with other classmates, the ESL students were to learn to prepare the garden, propagate seeds, and plant and harvest the crops.

New Focus

In some ways, the challenge presented by the lack of access to the school garden allowed me more creative freedom—I was no longer bound by the schedule and structure of the Plant Science Unit lessons in the classroom. Instead, I concentrated my energy on creating lesson plans that focused entirely on teaching literacy skills. In other words, the goal of our learning shifted from plant science to reading and writing skills, inspired by the beauty of nature. And I was fortunate to have had the flexibility to come and go in the school on my own schedule. Also, the ESL teacher remained open to my ideas, and accommodated my needs where necessary. I worked solely with the ESL teacher in her own classroom, brainstorming and researching ideas for using a garden-based (in this case, the school courtyard) curriculum for teaching literacy skills to the ESL students. My relationship with the ESL teacher was strengthened during this process, and it was clear

that we were reaping great benefits while exchanging and sharing our approaches and techniques for teaching ESL.

From April 27 to May 11 of 2009, the ESL students prepared for the New York State English as a Second Language Achievement Test (NYSESLAT)—the New York State ESL Testing Program. The ESL teacher and I targeted our lesson plans on what students were required to practice for the exam, which consists of sections on listening, reading, pre-writing, writing, and speaking. The NYSESLAT is used each spring to determine growth and proficiency.

I designed several lesson plans in order to practice and sharpen the ELLs' literacy skills.

NYSELAT Preparation

Week of April 27, 2009

Language Objective:

- To write a cohesive paragraph, using descriptive writing—including a topic sentence, three supporting detail sentences, and a closing sentence.

Secondary Objective:

- To inspire and nurture creativeness in students, motivating them to write.

Materials:

- Graphic Organizer
- Camera.
- Journals.
- “Explode the Moment” worksheet (Polega, 2008). This is a graphic organizer that enables students to record, in detail, what they experience in the courtyard, using all their

senses, and they are inspired to elaborate on the details of their observations, using descriptive writing.

Activities:

Monday

- Read *Who Is in the Garden?* by Vera Rosenberry (2001)—first, picture walk, then read aloud.
- Review vocabulary (slender, birch tree, fluttery, wren, mantis, arbor, garter snake, stiff, weave, crisp, nectar, monarch, bushy, stalk, dainty, nibbling, hives, wiggly, pecking, chattering, dart).
- Pass out and explain “Explode the Moment” worksheet—students will use these worksheets to record their observations, using their senses, of objects (organisms) in nature, e.g.:

Says: I think I am awesome and attractive.

Feels: I feel mad when people bother me.

Does: I collect sticky substance from flowers.

Hears: I hear the sounds of buzzing and whizzing.

Sees: I see lots of things, like eggs from other bees and hairy, squiggly caterpillars.

- Students take worksheets and cameras to the courtyard, record their observations, and take photo of what they choose to describe.
- Back in the classroom, students take turns sharing their observations, guessing what the living things each other chose to describe are.

Homework:

- Students come up with super adjectives for their observations, using newly introduced vocabulary.

Tuesday

- Students take turns acting out their “Explode the Moment” observations, while other students take turns describing the actions.
- Review homework together, correcting spelling and pronunciation.
- Students rewrite their observations and enter them into journals.
- Explain the process for writing a final paragraph/essay based on their observations: writing in the first person—taking on the identity of the living thing in nature they chose to describe.
- Hand out “Descriptive Paragraph Organizer” (created by ESL teacher, Sandy Costin, Increase Miller Elementary), e.g.:

Topic: Tree

Topic Sentence: I am really tall and slender, and can almost touch the sky.

Detail Sentences: I think about making leaves so children can make piles and jump in them. I feel happy when I hear the children laughing and playing beneath me. I see birds and other animals that live in the forest.

Closing Sentence: I can see everything that is around me because I am so tall.

Homework:

- Students complete their graphic organizers.

Thursday

- Students exchange their graphic organizers with each other and make comments (helpful comments for writing detailed, interesting essays).
- Weather permitting, take class outside, and ask a student to read *The Very Hungry Caterpillar* by Eric Carle (1987). This story serves as inspiration for the students to write their essays—it is a very simple story, with a beginning, middle, and end that takes place in nature.
- Students take turns re-telling the story in their own words and acting out scenes.
- Students begin writing their final essays.

Homework:

- No homework over the weekend!

Assessment:

- Observed oral proficiency and adjective use as students described other students' observations—using “Explode the Moment” worksheet.
- Collected graphic organizers to assess students' understanding of essay structure.
- Feedback from classroom teachers.

Reflections:

- Noted spontaneous use of more complete syntax when students re-told *The Very Hungry Caterpillar* story.
- “Explode the Moment” worksheet is a very successful tool for writing descriptive observations.
- Students' favorite activity was acting out *The Very Hungry Caterpillar*.

- Some students struggled with the discipline of working with the graphic organizer to structure their essays. I helped these students individually, and felt satisfied that they worked hard to accomplish the task.

Week of May 4, 2009

Language Objective:

- To continue practicing writing essays/complete paragraphs, and to practice listening skills.

Secondary Objective:

- To inspire creativity, using figurative speech.

Materials:

- Journals.
- Paste.
- Sunflower seeds.

Activities:

Monday

- Weather permitting, students go out to courtyard and read each other's final essays from the previous week; have students comment on each other's essays.
- Students go to the computer lab and type their essays (once teacher has finished editing them).
- Students enter (paste) essays into their journal.
- Students read essays aloud to the class.

Homework:

- Students look through magazines for large, colorful images, and write down adjectives to describe the images.

Tuesday

- Students share their images and adjectives in class.
- Read *The Missing Sunflowers* by Maggie Stern (1997), and introduce/discuss vocabulary used throughout the book. (Vocabulary: expression, flicked, snitch, bobbed, slashed, catch up, binoculars, fuzzy, precious, crumbly, wail, vanish, heron, snooze, dangle, dash, “keep your fingers crossed.”)
- Generate a list of new vocabulary on whiteboard, making columns for nouns, verbs, and adjectives. Have the students place vocabulary words in the appropriate columns.
- Have students act out the verbs.
- Place sunflower seeds on each desk, and ask students what the sunflower seed reminds them of (e.g., a zebra, shield, cocoon, etc. If the seeds remind them of a shield, could it be protecting the seed inside the shell?) (Pranis, 2004).
- Weather permitting, go outside and have the students look at the objects in nature that they described in their essays (or choose something new to describe). Begin writing: “A (tree, flower, etc.) reminds me of... (something that might function in a similar way).”

Homework:

- Finish writing “A _____ reminds me of...” essays.

Thursday

- Students share their “A _____ reminds me of...” essays with the class—while each student reads his/her essay aloud, the other students write down the verbs and adjectives they hear.
- Teacher gives a dictation, using students’ essays.
- Students paste essays into their journals.
- Weather permitting, free time outside; play Scrabble, or “I Spy.”

Assessment:

- Observed oral proficiency and listening skills as students read essays aloud and commented on each other’s work. (More listening skills practice is strongly suggested in order to help prepare students for the NYSESLAT exam.)
- Checked for improvements in written English from earlier essay drafts.
- Observed understanding of parts of speech as students listed new vocabulary words in appropriate designated columns.
- Determined listening skills and spelling through correction of dictations.

Reflections:

- The students experienced a feeling of accomplishment from entering final copies of their essays into their journals. This was a very rewarding experience for both student and teacher.
- Students’ favorite activity was the “I Spy” game.
- More dictation practice is needed to help improve listening skills and spelling.
- Although I am very pleased with the students’ written work, I observed that they would benefit greatly from continued practice with listening skills.

Week of May 11, 2009

Language Objective:

- To infer meaning of prose and poetry in preparation for the upcoming NYSESLAT exams.
- To continue practicing descriptive writing skills.

Secondary Objective:

- To practice observational skills.

Materials:

- Magnifiers.
- Items from nature (stones, leaves, etc.).
- Journals.
- Colored pencils.
- Cameras.

Activities:

Monday

- Students take a walk outside—in courtyard and other green areas—looking for things in nature to describe (rocks, leaves, flowers, bugs, etc.), (adapted from ESL teacher, Sandra Costin, Increase Miller Elementary).
- Back in the classroom, students lay out their various items on the table and take turns examining them with magnifiers.
- Review plant vocabulary (stem, branch, petal, root, veins).
- Discuss the differences and similarities of the items.

- Describe the items in detail; teacher writes adjectives on whiteboard while students brainstorm their descriptions of objects in nature.
- Read poems from *Busy in the Garden* by George Shannon (2006), and *Who Is in the Garden?* by Vera Rosenberry (2001); discuss the rhyming type of poetry found in *Busy in the Garden* and the prose style of *Who Is in the Garden?*

Homework:

- Students begin writing descriptive passages (using the adjectives they brainstormed in class) of the items in nature they found outside today; students highlight the adjectives in their writing.

Tuesday

- Students share their descriptive passages with each other.
- Teacher edits students' work; students type up passages in computer lab.
- Students paste essays into their journals.

Thursday

- Discussion questions: Discuss the difference between “observing” (looking carefully) and “reflecting” (thinking in different ways about what you see) (adapted from ESL teacher, Sandra Costin’s lesson plan on “Making Inferences,” 2009).
- Read “The Oak and the Rose” by Shel Silverstein (*A Light in the Attic*, 1981). Have students discuss their reflections and observations of the poem, and discuss what the poem means to them.
- Have students act out the poem, expressing what the poem means in their imaginations, interpreting the feelings of the oak and the rose from their own point of view.

Homework:

- No homework over weekend!

Assessment:

- Assessed improvements in writing proficiency by editing passages (using adjectives).
- Made note of students' comprehension of "The Oak and the Rose," while students acted out the poem in class.
- Classroom teacher feedback.

Reflections:

- Students' favorite activity was acting out the poem.
- I found that the hands-on gathering of items in nature, and observing and describing the items aloud, was a very engaging activity that motivated the students to write their descriptive passages.
- Reinforcing writing exercise with books, using prose, helped to cultivate the students' understanding of both prose and poetry—they were becoming true creative writers!

Week of May 18, 2009

Language Objective:

- To practice writing essays using "point of view."

Secondary Objective:

- To practice observing and reflecting in nature.

Materials:

- "Explode the Moment" worksheet.
- Journals.
- Cameras.

- Paste.

Activities

Monday

- Read *The Giving Tree* by Shel Silverstein (1986), and review vocabulary (branches, trunk, stump, limb, gather, forest, shade).
- Discuss the feelings/emotions that the tree might be feeling (e.g., sad, lonely, happy, nostalgic, disappointed, regretful).
- “Point of view” exercise: ask students to imagine themselves as the tree or the boy, using the emotional vocabulary mentioned above.
- Students write down answers to following questions:

What do you see?

What is your typical day like?

What do you feel?

Homework:

- Answer these “point of view” questions.

Tuesday

- Students share their answers to homework questions with a partner.
- Weather permitting, students go out into the courtyard and choose something in nature to “be” and write about, using “mask” poem style (George, 1997); take photos.
- Teacher goes around helping students take notes on their (new) “Explode the Moment” handout, e.g.:

(A student chooses a butterfly as his/her living thing to “be”)

Smells: I smell sweet, fragrant flowers and herbs.

Feels: I feel happy and alive.

Does: I fly from purple flowers to bright orange flowers with black spots.

Hears: I hear bees buzzing and children laughing.

Sees: I see bright flowers and fluffy clouds.

Homework:

- Using their “Explode the Moment” worksheets, students write out, in paragraph form (rough draft), what they have written on the handout; the idea is to write in the first person—where the subject of the poem is the speaker (see *Student Work* in *Appendix*).

Thursday

- Read *Hairy, Scary, Ordinary—What is an Adjective?* by Brian P. Cleary (2000). After reading, point to different objects in the classroom and ask students to use at least three adjectives to describe the objects (students can help each other if desired).
- Have students begin writing their “mask” poems (George, 1997), using their rough drafts from homework, e.g.:

“I fly for miles around the world, looking for bright, colorful flowers. I dream of beautiful, lush gardens where I can play with the buzzing bees and hear the joyful sounds of children playing Hide and Seek behind the big, maple tree. Do you see me?”

- Students type up poems, and paste them into their journals with their photographs.

Assessment:

- Observed improvements in writing proficiency when reviewing homework (answering questions based on *The Giving Tree*, and writing the “mask” poems) (George, 1997).

- Checked for improvements in written English from drafts to finished pieces for journals.

Reflections:

- Students' favorite activity was going into the courtyard and observing nature for their "mask" poems (George, 1997).
- By engaging in a writing activity requiring students to use their imaginations, and the hands-on activity in the courtyard (inspiration to write their "mask" poems) (George, 1997), the students were motivated to creatively express themselves. It was very exciting to hear and read the final versions of their "mask" poems (George, 1997). Within a relaxed, stimulating and fun environment, the students were not only learning about poetry, but writing it! (See *Student Work* in *Appendix*).

Post NYSESLAT Lesson Plans

("Post NYSESLAT" refers to the time after the ESL students had taken their state exam.) During the next few weeks, I created and implemented the following lesson plans, which continue to focus on descriptive writing skills.

Week of May 29, 2009

Language Objective:

- To encourage students to develop more diverse ways of describing everyday objects (in this case, organisms found in nature) using adjectives.
- To practice oral skills in presenting, and writing skills in short essay form.

Secondary Objective:

- To experience the freedom of expressing themselves—using their own "voice."

- To provide a fun and supportive environment for students to build confidence amongst their peers.

Materials:

- “Observations/Feelings and Reactions” worksheet.
- Graphic organizer.
- Clipboards.
- Cameras.
- Journals.
- “Peer Edit with Perfection” worksheet (*Read. Write. Think.*, n.d.). (The students compliment, make suggestions, and correct a peer’s work.)

Activities:

Monday

- Read *Over in the Meadow* by John Langstaff (1985)—first, picture walk, describing the natural habitats and organisms in nature, and discuss vocabulary. (Vocabulary: meadow, sycamore, hive, bog, web, den.) Students can either draw the vocabulary words on the whiteboard, or they can act them out.
- Students take clipboards and “Observations/Feelings and Reactions” worksheets out to the courtyard and work alone (teacher can help prompt), exploring the courtyard and closely examining natural habitats and organisms in nature. Students observe using their senses (seeing, touching, hearing, feeling, smelling) and write their feelings and reactions to each sense on their worksheets.

Homework:

- Students write short, descriptive phrases based on their observations in the courtyard.

Wednesday

- Read *Peter Rabbit* by Beatrix Potter (1991) to stimulate students' imaginations—inspiring them to use descriptive writing for short essays in garden journals; first, picture walk, and discuss new vocabulary. (Vocabulary: currants, fir tree, dreadfully, brass, sieve, trembling, wander, twitched, hoe, flopped, dose, gather.)
- Students present their “Observations/Feelings and Reactions” worksheets—while one student presents, the other students take turns guessing what the organism/object in nature is that student is describing.
- Students begin writing short, descriptive paragraphs using essay form/graphic organizers; students incorporate a minimum of two (they may choose to use all) of their observations/feelings and reactions into a short essay. This is an imaginary story, involving the life of their chosen organism's natural habitat.

Homework:

- Students continue/finish writing their descriptive paragraphs.

Friday

- Students go to the computer lab to type up their paragraphs.
- Students present their paragraphs to rest of class; the other students may ask questions.
- Using “Peer Edit with Perfection” worksheets (*Read. Write. Think.*, n.d.), students edit each other's paragraphs, making suggestions and compliments.

Homework:

- Students read their peers' comments, written on “Peer Editing with Perfection” worksheet, and make any desired changes.

Assessment:

- Observed vocabulary comprehension as students drew vocabulary words from *Over in the Meadow* on the whiteboard.
- Noted improvements in oral proficiency while students presented their courtyard observations.

Reflections:

- Students' favorite activity was guessing each other's organisms in nature that they had observed in courtyard.
- Through the hands-on activity of recording what they observed while using their senses, the students became immersed in the practice of using descriptive adjectives.
- Students have become more and more comfortable with expressing themselves creatively in writing, using nature as their inspiration. It is so rewarding to see the children share their work so proudly.

Week of June 8, 2009

Language Objective:

- To continue practicing descriptive writing.
- To practice reading and proofreading.
- To continue using descriptive language (words and phrases) in proper sentence structure.
- To continue practicing presentation skills.

Secondary Objective:

- To focus on living things in nature that share our environment.

Materials:

- “Peer Feedback” worksheet (*Read. Write. Think.*, n.d.).
- “Book Format” worksheet (*Read. Write. Think.*, n.d.).
- Journals.
- Proofreading symbols worksheet.

*Activities:**Monday*

- Students enter the revised versions of their descriptive writing from the previous week into the computer, and paste them into their journals.
- Teacher explains “Book Format” worksheet (*Read. Write. Think.*, n.d.), to use as a tool for writing descriptive passages. Students can use any (or all) of the five ideas listed on the “Book Format” form (*Read. Write. Think.*, n.d.), e.g.:

“A typical day in my life as a _____.”

- Students write descriptive passages, using “Book Format” ideas (*Read. Write. Think.*, n.d.), to describe the living things they had previously discovered, and had written a “mask” poem about (George, 1997).

Homework:

- Continue working on descriptive passages.

Wednesday

- Read *Little Turtle* by Valerie Sommerville (2002), improvising a story (this is a wordless picture book). Ask for volunteers to (verbally) create their own stories for *Little Turtle*, using at least two or three adjectives per page/scene—this exercise will stimulate their imaginations, helping to prepare them to finish their descriptive passages.

- Students continue writing descriptive passages. If a student finishes their passage, have him/her choose another idea from the “Book Format” worksheet (*Read. Write. Think.*, n.d.) (e.g., “Some unusual event in my life as a _____.” Students can type their stories on the computer in either the classroom or the computer lab. (See *Student Work* in *Appendix*.)

Homework:

- Finish writing passages.

Friday

- Teacher proofreads with students individually, using proofreading symbols on handout.
- Students finish entering their descriptive passages into the computer.
- Using the “Peer Feedback” worksheet (*Read. Write. Think.*, n.d.), students read each other’s work and make constructive suggestions.

Homework:

- Students make any desired changes to their work, based on comments made on “Peer Feedback” worksheets (*Read. Write. Think.*, n.d.).

Assessment:

- Observed oral proficiency while students improvised their own versions of the book,

Little Turtle.

- Noted improvements in writing skills while proofreading stories.

Reflections:

- Inspiring the students to write yet another essay based on their previous observations in nature required much encouragement. But, as the students looked through their journals containing their polished work, they became more inspired. Eventually, it became fun for

them to use their imaginations, and to imagine how their life as another organism would be for them on a typical day! Some even went on to write additional stories, using the “Book Format” (*Read. Write. Think.*, n.d.).

- I would use the practice of peer editing more often, as it tends to compel the students to be more accountable.
- Students’ favorite activity was improvising their own versions of *Little Turtle*.
- It was interesting to hear the students’ unique versions of *Little Turtle*. They have become so comfortable with oral expression and using adjectives in their stories.

Week of June 15, 2009

Language Objective:

- To practice reading and presentation skills.

Secondary Objective:

- To build students’ confidence in expressing themselves through creative writing.

Materials:

- Journals.
- Colored pencils.
- “Peer Feedback” worksheet (*Read. Write. Think.*, n.d.).

Activities

Monday

- Students paste the revised copies of their passages into their journals and illustrate their stories with colored pencils (if desired).
- Students take turns reading selected passages from their journals, sharing comments and positive feedback. (Weather permitting, this activity can take place in the school

courtyard.) Have students make comments on “Peer Feedback” worksheets (*Read. Write. Think.*, n.d.).

Wednesday

- Read *The Maybe Garden* by Kimberly Burke-Weiner (1992)—before reading, ask students what they think a “Maybe Garden” might be. Then, picture walk, asking students to tell the story in their own words.
- Ask students to use their wildest imaginations, and describe what their own, personal “Maybe Garden” would look like.
- Last day party! (Hopefully outdoors.)

Assessment:

- Checked for improvements in written English while reviewing all passages in student journals.
- Collected “Peer Feedback” worksheets (*Read. Write. Think.*, n.d.), and checked them to see how well students understood each other’s stories, based on how much feedback they wrote on the forms.

Reflections:

- Students’ favorite activity, of course, was the party!
- The objective to build students’ confidence in expressing themselves through creative writing was clearly met, as evidenced in the sharing of their journal entries. While the students read their stories aloud, they displayed a respect and value for the writing process. They had gained a greater sense of self-esteem through the accomplishment of their written work, and an increased respect for appreciating their peers’ work. The

garden courtyard had successfully stimulated their literacy skills. And as the students shared their visions of their “Maybe Garden,” I even envisioned my own!

Kindergarten Garden-Related Lesson Plan

The K-L School District’s Health, Wellness and Sustainability Coach, Denise Martabano, is also a part-time kindergarten teacher at Meadow Pond Elementary School, within the K-L School District. Ms. Martabano had planted the district’s first school garden—the “Learning and Growing Garden” at Meadow Pond Elementary—over 16 years ago, where the garden continues to thrive and plays an important role in the school’s curriculum. Curious to observe and participate in a garden-related lesson at Meadow Pond Elementary, I approached Ms. Martabano after a workshop she had given on integrating the school garden into the classroom curriculum. I suggested we collaborate on implementing one of the lessons she had demonstrated at the recent teacher’s workshop.

I co-taught the following lesson plan, created by Ms. Martabano for her kindergarten class at Meadow Pond Elementary.

June 22, 2009

Language Objective:

- To practice using/comprehending vocabulary for vegetables, fruits, and herbs.
(Vocabulary: apple, broccoli, lettuce, corn, peppers, potatoes, eggplant, cucumber, garlic, carrot, pumpkin, chive, squash, mint.)

Secondary Objective:

- To recognize and become familiar with the different vegetables and herbs in the garden.
- To experience the fun and pleasure of working as a team in the school garden.

Materials:

- 3-inch-by-5-inch vegetable/fruit/herb vocabulary cards.
- Two teacher worksheets, with definitions of vocabulary words.
- Ice cubes.
- Plastic spoons.
- Bucket.
- Scissors.

Activities:

- “Vegetable Relay Race”
- Separate students into two groups, lining them up on opposite ends of the garden.
- Set up a bucket, a bag of ice, and a spoon at each end of garden.
- Lay out the 3-inch-by-5-inch vocabulary cards on the ground, in full view (one set of cards per team).
- Two teachers are provided with worksheets containing the definitions/descriptions of vocabulary words, e.g.:

“I come in red, green and yellow. You can pick me in the fall.” (Apple.)

- A student shouts out the correct answer, picks up the corresponding vocabulary card, puts an ice cube on a spoon, and carries the spoon (without dropping the ice) to the other end of the garden.
- First team to complete the list of vocabulary wins!

Additional Activities:

- Students pick flowers and herbs from cutting gardens to create bouquets to be placed around the school library.

Assessment and Reflections:

After having worked with Ms. Martabano's Kindergarten class, I realized that the strategies used to teach ELLs are similar to those used to teach at the Kindergarten level. Some of these strategies include: articulating more precisely and clearly; minimizing advanced vocabulary, or higher levels of speech; conducting concrete, hands-on activities; using simple directions; addressing a uniform level of language development; eliminating extraneous directions.

The students in Ms. Martabano's Kindergarten class exhibited great enthusiasm for the vocabulary game in the garden. The task of matching the definition with the plant vocabulary word took on a carefree sense of fun, allowing the children to indulge and embrace the "Vegetable Relay Race" game. The students were able to draw upon their knowledge, and to help and encourage the others who reacted more reluctantly to the process. Providing a sense of team effort and competition helped to create an exciting challenge for the students, and all were rewarded in the end.

The additional task of picking flowers and herbs from the cutting garden afterward created a sense of calm for the children, and gave them the artistic freedom to design their own bouquets, and to display them prominently in the school's library. The students at Meadow Pond Elementary are very fortunate to have their Learning and Growing Garden, providing the children the opportunity to experience the magical world of nature, while developing their academic skills.

Journal Writing

I had originally adopted the idea of having the ESL students keep daily garden journals to record their observations—including plant growth, weather conditions, and

activities conducted by the Health, Wellness, and Sustainability Coach (starting seeds, seed propagation, dissecting a seed, etc.). However, since the students were already keeping classroom journals, and the opportunity to physically work and immerse themselves in the school garden had been eliminated, I shelved the idea. Once back on board with my field study, I resurrected the journal writing activity. This became the source of the ELLs' body of work.

Connecting language arts to the garden (or, in this case, the school courtyard) adds an element of fun to the predictable routine of the everyday classroom.

A garden journal is indeed an excellent forum to encourage students of any age to write every day or every week. Because the garden is in a constant state of change, it inspires observation, contemplation, and writing. The gardening process itself has many steps that require documentation. The journal allows for introduction of new vocabulary, composting and handwriting practice. (Pranis, n.d.)

Reaction to Journal Writing

Since documenting changes and observations in the school vegetable garden was no longer an option, the students observed details in nature, discovered in the school courtyard—spring had sprung, and change and growth was taking place daily. At first, the ELLs were very resistant to the concept of actual journal-writing exercises. Thus, in order to inspire and facilitate the writing process, we provided worksheets and cameras for recording and sharpening their observations, and to stimulate creative writing. The students began to take pride in their work, typing up their entries and pasting them in their personal journals, along with photographs of their discoveries in nature. (Being a

photographer, I was quite excited about sharing my passion with the students, and incorporating this creative tool into their writing process.)

Essays/Poetry

The practice of recording observations in nature evolved into writing student essays and poetry. Through the use of games—“Your garden provides the space and materials to captivate the attention of your students; all you need is a sense of adventure to transform learning experiences into games. Students will have so much fun they won’t even realize they’re learning valuable life skills and lessons” (Pounders, 2006)—stories, visuals, and songs, the students were encouraged to develop more diverse ways of describing everyday objects. They wrote their essays in the first person—describing their personal experience related to their topic in nature. Becoming personally invested in their writing provided the personal connection to make learning English more meaningful—using the first person style of writing enabled the ELLs to experience the freedom of expressing themselves in their own voice.

“Analogies, metaphors and similes are staple ingredients of poetry. The plants, gardens, and the outdoors are rife with inspiration for these expressions that invigorate the imagination, encourage creative use of words, and help kids see things anew” (Pranis, 2004). Drawing upon their observations in nature, the students created original poems, including “mask” poems (George, 1997), implementing various styles and techniques, sensory awareness, figurative speech, and point of view. To support the poetry writing practice, we conducted lessons that examined and explored the use of our senses, incorporating repetitive practice with adjectives, vocabulary, spelling, reading, and writing.

Workshops

Bedford Environmental Summit—Bedford, New York, January 2009

Once established on my path of researching garden-related school curricula, I began to discover local workshops advocating environmental education and edible school gardens. I was very fortunate that these workshops appeared to be springing up around my geographic location during the same time I was pursuing my thesis project.

In my own town, and the first of its kind in the area, the Bedford Environmental Summit was a joint effort by both the Town of Bedford, New York, and the Bedford Garden Club. The mission of the summit was to

inform participants about the most pressing environmental issues of the day and to present them with concrete actions to address these problems on a local level.

What happens after the conference is as important as the conference itself. The Summit's goal is to encourage ongoing, individual and collaborative actions to create a sustainable Bedford. We believe that civic engagement and community action can produce measurable results and offer valuable models for other communities. (The Bedford Environmental Summit Steering Committee, 2009)

When I entered the Fox Lane High School (in Mt. Kisco, New York, where the Summit took place), I was overwhelmed, and taken by surprise by the number of people that filled the hallways and classrooms. There was standing room only in the auditorium, where the keynote speaker, Bob Woodruff—former ABC co-anchor of “World News Tonight”—was delivering his opening speech. Mr. Woodruff is currently anchoring for “Focus Earth,” a weekly eco-newscast for Planet Green (Discovery Communications’ 24/7 eco-lifestyle network). Other reputable speakers included: Jayni Chase, founder of the Center

for Environmental Education, and author of *Blueprint for a Green School*; Dr. Joan Dye Gussow, renowned author of *This Organic Life* (2001); Michael Nischan, president of the Wholesome Wave Foundation, and chef at The Dressing Room (Paul Newman's locally-grown restaurant in Westport, Connecticut); and Robert F. Kennedy, Jr., Chief Prosecuting Attorney for the Hudson Riverkeeper, and president of the Waterkeeper Alliance.

Most significant and valuable for my personal career interests were, of course, the workshops related to school gardens. Some of the notable presenters on this topic included: Melanie Shannon-Di Pietro, director of the Yale Sustainable Food Project; Sara Katz, Community Horticulturist of Bronx Green-Up—the community outreach program at the New York Botanical Garden; and Denise Martabano, Health, Wellness, and Sustainability Coach for the Katonah-Lewisboro School District. Little did I know that I would eventually be working closely with Ms. Martabano at Increase Miller Elementary School, where I co-taught the fourth grade ESL students with ESL teacher, Sandy Costin.

Denise has designed and implemented annual school wide planting, harvesting and cooking events in the schools in her district. One school's vegetable garden was awarded special recognition in the Rodale Institute's 2006 Organic School Garden Contest. Denise has trained many teachers in the region and regularly consults with school districts to develop their school gardens and other related outdoor programming. (The Bedford Environmental Summit Steering Committee, 2009)

Edible School Gardens Workshop—sponsored by the Westport, Connecticut Green Village Initiative, March 2009

I attended an Edible School Gardens Workshop featuring a panel of professionals in the field of education. Speakers included the school nurse of a local elementary school who started the school's vegetable garden one year earlier, a Science and Biology teacher from a local high school, and the co-founder of Teich Garden Systems—a company that installs raised bed sustainable garden systems for schools and other institutions.

This workshop covered every aspect of creating school gardens, including step-by-step instructions: Who are the stakeholders (administrators, teachers, the coordinator of a steering team, parents, students, community volunteers, custodians, the cafeteria)? What are the institutional priorities of the school? What are the horticultural needs of the plants? What are the curriculum requirements (matching to State Education Standards, and having a design that provides for lessons)? What about the physical location—space, sunlight, water source, drainage, soil test— and design—beds, pathways, benches? And, finally, what is the mission—the statement of purpose.

The presentation that I found most valuable and applicable to my professional and educational interests, discussed connecting the school curriculum to the school garden. For example: First grade—rainbow colors in the flower garden (sensory exercises); second grade—butterfly study (Monarchs laying eggs on parsley); third grade—colonial times (herb gardens for culinary, aromatic, and medicinal purposes); fourth grade—math (coordinate grid). This segment of the workshop served as an introduction for me to the practical applications of garden-related curricula at the elementary school level. Inspired

by the passion of the presenters at this workshop, I was able to set my thesis study in motion shortly afterwards.

Using School Gardens, Outdoor Classrooms, and More to Teach Health, Wellness, and Sustainability Workshop—Stone Barns Center for Food and Agriculture, June 2009

I had just finished assistant teaching at Increase Miller Elementary when the school's ESL teacher, Sandy Costin, invited me to attend a school garden workshop, offered by Denise Martabano. My thesis project had come full circle. The workshop took place at the Stone Barns Center for Food and Agriculture, a working farm and education center located in Pocantico Hills, New York. "The mission of this unique, non-profit, member-driven collaboration is to celebrate, teach and advance community-based food production and enjoyment, from farm to classroom to table" (Stone Barns Center, 2004). Ms. Martabano conducts Saturday workshops with teachers throughout the tri-state area, teaching the fundamentals of creating school gardens and integrating the garden into the school's curriculum.

"It's been a passion of mine since I was hired by the district," Martabano says. "I'm a lifelong gardener. I love to grow food and I love to share what I know."

"Kids love to get their hands dirty and this is a program that lets them do that. You can do so much teaching through gardening and farming," says Judy Fink, Education Programs Director at Stone Barns. "More and more we're learning that kids learn by doing, and this is something that's very active. The teachers absolutely love the workshop. They love what they're doing. They love working with Denise. This is something that's very real and very quantifiable" (as cited in Cary, 2009).

As participants in the School Garden Workshop, we teachers actively took part in a myriad of activities and games listed on the day's agenda (one of which was the "Vegetable Relay Race"). Ms. Martabano and I implemented a lesson plan shortly afterwards, which included playing the "Vegetable Relay Race" with her kindergarten class at Meadow Pond Elementary.

Interviews with Educators Using Garden-related Curriculum

Cathy Clare—Greenhouse Facilitator, Katonah Elementary School, Katonah, New York

Cathy Clare, Greenhouse Facilitator at Katonah Elementary School, has been implementing garden-based curricula for the past ten years with her K-5 students. I am fortunate to have worked closely with Ms. Clare as a parent volunteer at Katonah Elementary (where my children attended school), as well as a current volunteer at the Bedford Audubon Society's Bylane Bird-Friendly Vegetable Garden. (Bylane Farm serves as an educational resource for our local community.) Ms. Clare and I have also collaborated on a community garden proposal, which we presented to our town board. Ms. Clare has truly been a pioneer in the field of teaching, using a garden-based curriculum: she represents leadership within the community, actively promoting garden-related education.

"I like to tell my students that we are going to grow plants, and that flowers are part of plants. This is the scientist's point of view," say Ms. Clare. "The students need to understand the role of the plant in ecology, and all its functions. For example: the function of the leaves is extremely important—they convert the energy of sunlight into food (sugars and starches), for us and for animals to eat."

Ms. Clare has been conducting lessons in the school's greenhouse since the spring of 1999. Drawing upon her past professional experience at the New York Botanical Garden—where she had been both a children's docent, and an instructor for the children's programs—Ms. Clare employs garden-based curricula while teaching grades K-5. The classroom teachers collaborate with Ms. Clare, requesting that she create lesson plans relating to specific portions of the curriculum (Science, Social Studies, Math, ELA, and Art).

“The children are very enthusiastic while engaging in their garden-related, hands-on projects, and look forward to going to the greenhouse,” says Ms. Clare. “I try to design lessons that take place both inside the greenhouse and outdoors, where the students can get their hands dirty and experience the work and value of a gardener.”

Projects that physically take place in the garden include the “Farmer's Fall Chores,” where the fourth grade students collect seeds from the Butterfly Garden they had planted as third graders the previous spring, plant a cover crop, and put the garden to bed. The practice of putting the garden to bed is a practice that was used during the 19th century, and so becomes a part of a Social Studies lesson (New York State history of native agricultural practices). Once back in the classroom, the students express their experiences in the garden through writing, connecting the garden-related lesson to the ELA curriculum.

I especially enjoy adapting some of my greenhouse/garden lesson plans to enable the children to practice their math skills. For example, the fifth grade students play the ‘Calculating Carrot Seeds’ game: We make our own strips out of flour and water (using biodegradable paper towels, of course) and place carrot seeds on

the strips, where they stick in place. The students then measure the distance between the seeds and the strips, where they are spaced evenly. This is a good exercise for the students to grasp the idea of sowing seeds evenly in the rows of a garden bed. They have so much fun and are so engaged in the process of measuring, that they don't realize they are implementing their math skills. (Clare, personal communication, 2009)

The garden also provides ample opportunities for the lower grades to practice their calendar skills.

We talk about how much time we need between sowing and planting in the garden, and what time of the year to plant different crops (cold weather versus hot weather) and when to transplant. The children learn to create a schedule according to the planting season. (Clare, personal communication, 2009)

Ms. Clare sometimes plays songs to enhance the lessons on planting schedules. For example, the students sing a song about the bulb growth process and its repeating cycle of dormancy, sung to the tune of "Rock-a-Bye Baby."

At the K-2 grade levels, we play with sensory-based lessons. Since the kindergarteners are not yet fluent in reading and writing, we focus on studying various plants with different types of leaves, colors, markings, textures, shapes, sizes, and aromas. The students depend on their sense of smell, touch, sight and sometimes taste, in order to become familiar with the plant world. Once the students become literate, I can create lesson plans that require literacy skills, and relate directly to the classroom curriculum. In the second grade, the students are studying different animal habitats in a portion of their Science unit. They are also

learning about the geography of our 50 states. In the greenhouse, the students work with plants that grow in different regions of the United States. We discuss what type of plant might grow in a desert region, what type of soil and weather conditions exist in the desert states, which states have desert regions, etc. (Clare, personal communication, 2009)

When I asked Ms. Clare if her original vision of bringing garden-related curricula to life has changed since she began teaching ten years ago in the then-new greenhouse (and outdoor gardens to follow) at Katonah Elementary, she replied:

Back then, the word ‘sustainability’ was not yet being used in the schools. I’m much more aware now, as are teachers, students and families, about eating fresh, local food. We’re thinking more about how our food ways affect human health and the health of the planet. Garden-based learning is more relevant than ever today! (Clare, personal communication, 2009).

Ellyce Cavanaugh—ESL Teacher, Springhurst Elementary School, Dobbs Ferry, New York

While attending a workshop on using the school garden as an outdoor classroom, I received contact information for an ESL teacher, Ellyce Cavanaugh, at Springhurst Elementary School. The workshop took place at the end of the 2008-2009 school year, after I had finished the field-based research for my thesis project. I was very excited to learn that Ms. Cavanaugh had been using garden-based lesson plans in her ESL classroom during the past school year (the school garden was installed a year ago). Passionate about educating, Ms. Cavanaugh is the first teacher in her school district to use the garden as a resource for teaching literacy to ESL students. In fact, to my

knowledge, she is the only elementary school ESL teacher utilizing a garden-related curriculum in the classroom throughout Westchester County.

I strongly believe that the ELLs learn best in an experiential environment, accompanied by traditional approaches. The Outdoor Classroom Garden at Springhurst Elementary provides such a platform for the ESL students, where they are physically engaged in hands-on activities. When the children are in the garden, busy planting, maintaining and harvesting, they are brimming with excitement. Constantly repeating garden-related vocabulary that relates to the particular lesson at hand, the students' vocabulary increases rapidly, and with natural ease. This is especially noteworthy, as the ELLs lack the background knowledge that the rest of their peers take for granted (i.e. the ELLs' parents typically do not speak English at home, do not read to their children, and do not readily assimilate into the American culture). So, to observe the ELLs' voluntary participation in the act of gardening—buzzing with enthusiasm as they brainstorm plant/garden/nature vocabulary—is reinforcement of the concept of experiential learning. And today, as the students feasted on the minestrone soup that was prepared with the vegetables and herbs they had just harvested, I could easily imagine teaching all day, every day, in the Outdoor Classroom Garden.

(Cavanaugh, personal communication, 2009)

Ms. Cavanaugh explained that her vision of a school vegetable garden had become a reality thanks to the endless support of the school's Speech and Language Specialist, who had transformed the school's inner courtyard into a flourishing perennial garden replete with a platform for poetry readings and benches for meditation amidst

nature. Together, Ms. Cavanaugh and the Speech and Language Specialist applied for grants to build a school garden, and within a year's time, the students at Springhurst Elementary were sowing seeds in their newly prepared vegetable garden.

We have one raised bed in the garden that is dedicated to the ELLs. Today, the students harvested tomatoes, celery, and pumpkins, which they had planted in the early spring. Throughout the year, I work very closely with the classroom teachers, complimenting and reinforcing what the students are learning in their classrooms. For example, I create lesson plans related to the ELLs' Science Curriculum—seed germination, parts of a plant, plant names, how a seed grows, what conditions a seed needs to grow, etc. Using hands-on projects related to garden preparation (starting seedlings on classroom window sills, etc.), the ELLs enrich their language skills, including vocabulary, speaking, listening, and reading. For writing practice, the students write thank you notes to the parent volunteers who assist in the garden projects. Using sensory exercises, the students write poems in the garden—an exercise that enhances what they are learning in their second grade Poetry unit. Another practical application of the K-2 curriculum is working on the concept of counting; the students exercise their math skills while counting the seeds for planting, and counting how many seeds actually germinate. (Cavanaugh, personal communication, 2009)

Ms. Cavanaugh has been teaching for 20 years now, and says that her most rewarding experience has been sharing the joy and excitement of the ELLs in their raised bed vegetable garden. “A big smile comes across my face when I picture the students

eagerly conversing with their peers on the topic of harvesting their crops, and what they plan on cooking with the vegetables and herbs,” she says. “It’s truly music to my ears.”

Reflections

Alicia Dickerson, Life Lab Project Manager of the Monterey Bay Science Project, believes that a hands-on, garden-based curriculum

puts language into a ‘real context’ for the students. The students go from lacking academic self-confidence to gaining a tremendous amount of confidence about themselves and their potential. In the garden, they learn how to ask questions about the world and make meaning for themselves, coming away with new ways of thinking, new concepts and new words. (n.d.)

The students I worked with in my field study were sufficiently prepared to add a garden curriculum to their ESL studies. Quite resistant at first to put their thoughts and ideas on paper, the ESL students adjusted to the routine of the garden-based lesson plans, and eventually overcame their resistance. Through exploration of nature’s enchanting world, the ELLs found their voice, and successfully produced their own unique literary pieces. Equally important, once a relationship of trust was established between us—teacher and student—the students were able to write freely and confidently.

In retrospect, I pose this question: Would I change the design of my thesis study, were I to do it again? What I have learned is that the best-laid plans may not always come to fruition. I have learned why planning is essential to effective teaching and learning, and that it is even more important to maintain flexibility throughout the teaching process. Had I not been willing to change my course, I would have missed the opportunity to work with the ESL students at Increase Elementary School.

I could have given up on the pursuit of my thesis work, but the combination of my passion for exploring garden-related curricula for teaching ESL, and my motivation to complete my thesis, kept me in the game. The teachers with whom I worked were highly committed and excited about my thesis project, inspiring me throughout my course. The opportunity to work in a hands-on teaching and learning environment strengthened me as a teacher. This was a huge experiment in my professional career.

Conclusion

In a conversation a few years ago with my sister, it became clear to me that my professional interests would be served by completing my Master's Degree from the School for International Training. However, I dreaded the task, and even postponed the project after special approval to complete my degree. The truth is that I simply could not find the entry point for my participatory research experience. When my thoughts finally began to click, the project of working with ESL students in garden pedagogy became a focal point for my life. Not only did I begin to form a new network with teachers in Westchester County (where I have lived and worked for 17 years), I found a community niche as well. Once my garden curriculum started to develop, I found myself volunteering to organize the community garden for the village of Katonah, New York, and also helped to organize the new vegetable garden for the Audubon Society in Bedford, New York, called Bylane Farm. The farm currently conducts educational programs, including one uniquely designed in collaboration with a local intergenerational program. Although I encountered obstacles to gardening at Increase Miller Elementary School, I was able to take my skills to other community venues. And at home, my gardening efforts have doubled.

Wendell Berry was right. Eating is an agricultural act, and by extension, so is learning. The “Zeitgeist”—the “spirit of the age”—is about learning through agriculture, from our homes, to our schools and other community places. While the literature on this important area of pedagogy is scant, the knowledge base for helping ESL learners through gardening pedagogy is not difficult to develop; the material for learning agriculture is there. What is required is imagination to integrate ESL curricula with a love of the earth and a developing global sensitivity to climate change and new values for earth stewardship.

Schools need to recognize that the curriculum takes place anywhere—including the outdoor garden. Language in the garden is universal, and serves as a natural stimulus for learning. Across the board, from science and math to social studies and language arts, the school garden provides fertile ground for different styles of teaching and for different styles of learning. The school garden connects the classroom in a myriad of ways, allowing students the hands-on experience of planting and maintaining a garden, and learning to respect the beauty and magic of nature. This experience fosters a sense of responsibility to the environment and all living things.

The school garden’s courtyard at Increase Miller Elementary inspired the ESL students to become thoughtful, creative writers, on the path to finding their own voice. Although several of my lesson plans were not implemented in the classroom, I am confident that one day these curricula will find their way into my own classroom.

References

- Berry, W. (1989). The Pleasures of Eating. In *What Are People For?* New York: North Point.
- Buck, R. (2009, March 12). Obama Taps No Child Left Inside Advocate for EPA. *Hartford Courant*. Retrieved May 1, 2009, from http://www.childrenandnature.org/news/detail/obama_taps_no_child_left_inside_advocate_for_epa/.
- Cary, B. (2009, May 16). School of Gardening: Stone Barns is Teaching Teachers How to Grow Vegetables and Integrate That into the Classroom Curriculum. *The Journal News*. Retrieved May 22, 2009, from <http://pqasb.pqarchiver.com/lohud/access/1717577301.html?FMT=ABS&date=May+16,+2009>.
- Center for Ecoliteracy. (2005). *Smart by Nature*. Retrieved April 17, 2009, from <http://www.ecoliteracy.org/projects/index.html>.
- Center for Ecoliteracy. (2005). *Smart by Nature*. Our Mission. Retrieved April 17, 2009, from <http://www.ecoliteracy.org/about/index.html>.
- Davies, A. (2009, April 5). The Obamas go organic. *Environment Society of Australia*. Retrieved October 24, 2009, from <http://www.enviro.org.au/enews-description.asp?id-962>.
- Dickerson, A. (n.d.). Linking Gardens to School Curriculum. In *Gardens for Learning: Creating and Sustaining Your School Garden* (chap. 3). Retrieved April 29, 2009, from <http://www.csgn.org/page.php?id=36>.
- George, K.O. (1997). *Old Elm Speaks: Tree Poems*. http://kristinegeorge.com/teachers_guide_old_elm_speaks.html.

- Life Lab. (2009). *Life Lab Science Program*. Retrieved June 14, 2009, from <http://www.lifelab.org/about.php>.
- Pollan, M. (2008). *In Defense of Food*. New York: Penguin.
- Pounders, S. (2006). *Garden Games: Kids Learn at Play*. Retrieved May 15, 2009, from <http://www.kidsgardening.com/2007.kids.garden.news/oct/pg1.html>.
- Pranis, E. (2004). *Growing Poems: Cultivating Creativity and Communication Skills through Garden-Inspired Poetry*. Retrieved April 19, 2009, from <http://www.kidsgardening.com/growingideas/projects/nov04/pg1.html>.
- Pranis, E. (n.d.). *Writing and Journaling*. Retrieved May 29, 2009, from <http://www.kidsgardening.com/Dig/DigDetail.taf?ID=95&Type=faq>.
- Read. Write. Think.* <http://www.readwritethink.org/lessons/index.asp?grade=0&strand=0&engagement=0>.
- Scully, B. (2002). *A Child's Garden of Standards, Linking School Gardens to California Education Standards, Grades Two Through Six*. Sacramento, CA: California Department of Education.
- Stone Barns Center for Food & Agriculture*. (2004). Retrieved October 19, 2009, from http://www.stonebarnscenter.org/sb_about/mission.aspx.
- Waters, A. (2002). *Edible Schoolyard—A Universal Idea*. San Francisco: Chronicle.

Additional Resources

Banana Slug String Band. (2002) *Singing in Our Garden* [CD]. Santa Cruz, CA: Slug Music.

Bates, R. (1994). *Flowers and Seeds*. Greensboro, NC: Carson-Dellosa.

BrainPOP. (1999). Parts of a Plant [Computer software]. <http://www.brainpopjr.com/science/plants/partsofaplant/preview.weml>.

Burke-Weiner, K. (1992). *The Maybe Garden* (F. Spillman, Illus.). Hillsboro, OR: Beyond Words.

Butler, D. (1996). *What Happens When Flowers Grow?* Austin, TX: Steck-Vaughn.

Caduto, M.J., & Bruchac, J. (1996). *Native American Gardening*. Golden, CO: Fulcrum.

Carle, E. (1991). *The Tiny Seed*. New York: Simon & Schuster.

Carle, E. (1987). *The Very Hungry Caterpillar*. New York: Philomel.

Carlson, N. (2000). *Harriet and the Garden*. Minneapolis, MN: Carolrhoda.

Cleary, B. (2000). *Hairy, Scary, Ordinary—What is an Adjective?* (J. Prosmitsky, Illus.). Minneapolis, MN: Lerner.

Columbia University. *LiFE—Linking Food and the Environment*. <http://www.tc.columbia.edu/LiFE/>.

Cooney, B. (1985). *Miss Rumphius*. New York: Puffin.

Cornell Cooperative Extension. <http://cce.cornell.edu/Westchester>.

Cornell University. *New York State Junior Master Gardener Program*. <http://www.hort.cornell.edu/gbl/toolshed/jmg.html>.

Cornell University Garden-Based Learning Blog. <http://blogs.cornell.edu/garden>.

Cunningham, M., McDavitt, D., & Romero, B. (2005) *Native American Three Sisters Gardens*. http://ddl.nmsu.edu/kids/webquests/wqthreesisters_k.html.

Degen, B. (1983). *Jamberry*. New York: HarperCollins.

Ford, M. (1999). *My Day in the Garden* (A. Lobel, Illus.). New York: Greenwillow.

Foster, T., & Hale, L. (n.d.). How Does Your Garden Grow? *Core Knowledge Lesson Plans*. <http://coreknowledge.org/CK/resrcs/lessons/2.htm>.

Ganeri, A. (1993). *What's Inside Plants?* New York: Peter Bedrick.

Gerson, M.J. (1995). *People of Corn* (C. Golembe, Illus.). Boston: Little, Brown.

Gibbons, G. (1993). *From Seed to Plant*. New York: Holiday House.

The Growing Connection. <http://www.thegrowingconnection.org>.

Growing in the Garden. http://www.extension.iastate.edu/GrowingintheGarden/lessons_first.html.

Gussow, J.D. (2001). *The Organic Life: Confessions of a Suburban Homesteader*. White River Junction, VT: Chelsea Green.

Heller, R. (1983). *The Reason for a Flower*. New York: Grossett & Dunlap.

Hughes, M.S. (2000). *Flavor Foods: Spice and Herbs*. Minneapolis, MN: Lerner.

Junior Master Gardener. *Literature in the Garden*. <http://www.jmgkids.us/index.cfm?did=10397>.

Kirk, D. (2000). *Little Miss Spider at Sunnypatch School*. New York: Scholastic.

Krauss, R. (1945). *The Carrot Seed* (C. Johnson, Illus.). New York: Harper & Row.

Langstaff, J. (1985). *Over in the Meadow* (F. Rojankovsky, Illus.). New York: Harcourt Brace Javonovich.

Lobel, A. (1990). *Allison's Zinnia*. New York: Greenwillow.

- Lobel, A. (1972). *Frog and Toad Together*. New York: HaperCollins.
- Lobel, A. (1990). *The Rose in My Garden* (A. Lobel, Illus.). New York: Greenwillow.
- Marzollo, J. (1996). *I Am a Seed* (J. Moffatt, Illus.). Minneapolis, MN: Lerner.
- New York Agriculture in the Classroom*. <http://www.nyaged.org/aitc/>.
- Overbeck, C. (1982). *How Seeds Travel*. Minneapolis, MN: Lerner.
- Paolilli, P., & Brewer, D. (2003). *Silver Seeds* (S. Johnson & L. Fancher, Illus.). New York: Penguin.
- Polega, V. (2008). Explode the Moment. *Make a Splash! Using Dramatic Experience to "Explode the Moment."* http://www.readwritethink.org/lessons/lesson_view.asp?id=1128.
- Politi, L. (2003). *Three Stalks of Corn*. New York: Athenaeum.
- Potter, B. (1991). *The Tale of Pete Rabbit*. New York: Allan.
- Rosenberry, V. (2001). *Who Is in the Garden?* New York: Holiday House.
- Rylant, C. (1987). *This Year's Garden* (M. Szilagyi, Illus.). New York: Simon & Schuster.
- Shannon, G. (2006). *Busy in the Garden* (S. Williams, Illus.). New York: Greenwillow.
- Silverstein, S. (1981). *A Light in the Attic*. New York: HarperCollins.
- Silverstein, S. (1986). *The Giving Tree*. New York: HarperCollins.
- SOLE—Sciences of Life Explorations: Through Agriculture Grades 4 and 5*. <http://agout.cals.cornell.edu/aitc/educators/pdf/activities/hydro.pdf>.
- Sommerville, V. (2002). *Little Turtle*. Katonah, NY: Richard C. Owen.
- Spoons Across America. <http://spoonsacrossamerica.org/>.
- Stern, M. (1997). *The Missing Sunflowers* (D. Ruff, Illus.). New York: Greenwillow.

Stevens, J.R. (1999). *Carlos and the Squash Plant*. Flagstaff, AZ: Luna Rising.

Stone Barns Center for Food & Agriculture. *Growing School Gardens Across the Curriculum*. http://www.stonebarnscenter.org/sb_school/teacher_programs.aspx.

Appendix

Student Work 1

**A Typical Day in my Life as a Beautiful,
White Flower Bush**

I get ready for the bees to eat my flowers. I see some other beautiful flowers just like me. My flower friends see bees eating their white and purple flowers. I love doing what my other beautiful flower friends like to do: like admire other beautiful flowers, like roses and violets. I feel flattered when my flower friends imitate me. For example, when a butterfly lands on me, I start chattering with excitement.

Student Work 2

A Typical Day in My Life As Grass

My life is boring. I just stay and get stepped on
and shaved. It's a bummer

when it snows because I stay short.

I grow back in the spring and love it
in the summer. The kids go on vacation then and
don't step on me! I get scared when I see people
coming to play on me,
they might step on me,

Student Work 3

A Typical Day in My Life as a tree

Every day, I grow in the court yard of a school.

A nine year old boy always climbs up my trunk.

Sometimes in the fall and winter, my leaves fall
off my branches and the kids use my trunk as a fort
so the snowballs don't hit them. In the summer, people rest
under my branches and eat my apples
and peaches so they can grow strong and healthy.
I can see everything around me and the nest
of the birds on my branch and the woodpecker
pecking on my trunk. The chipmunks and the squirrels
climbing up my trunk feels nice.
That is my life as a big tree.



Student Work 4

A Typical Day in My Life as a Bee

I sting people when they make me angry. I collect pollen from flowers that are big and bright. With that pollen, I make honey. People think that I'm annoying because I sting them. I die in less than two weeks. Bees usually die of old age.

*Student Work 5***An Unusual Event in my Life as a Tree**

I was minding my own business in the forest when all of a sudden a storm arrived. The sky turned dark and the lightning zoomed across the sky like a Lamberghini racing down a track. Thunder started to boom as if a grenade had gone off. The next thing I knew, lightning hit me. Thank goodness I didn't fall on a house and kill the people inside.

I was lucky that I didn't fall and die. And if I had died, I wouldn't be able give air and oxygen to the living things on earth – especially my forest friends: the chipmunks, squirrels, birds, snakes and flowers. And saddest of all, the white-headed eagle would lose his home. The bright sun began shining on my branches and I felt like I was taller than the world.

Student Work 6

An Unusual Event in My Life

I was minding my business when I heard a loud noise like a chain saw. I was really frightened! I didn't know what to do and I didn't want to wake up my flower friends. It looked like a tree coming down on me. I was so scared! Then I saw a man cutting down the tree. It looked like he was trying to destroy nature. I couldn't let him do that. I was spying on him as he fell asleep and I told the wind to put me on him and he blew and blew on me until I was on the sleeping man and I told him "senor, please don't cut down the tree. Senor please don't hurt nature. Thank-you senor. Now, when you wake up you will leave this forest and never come back to hurt it. Good bye.

Photos from Long Beach Field Study—The Healthy Harvest Garden



Figure 1. Reading in the Garden. (Photographer: C. Bundy)



Figure 2. Haiku in the Garden. (Photographer: C. Bundy)



Figure 3. Tool Matching Game. (Photographer: C. Bundy)



Figure 4. Butterfly in the Garden. (Photographer: C. Bundy)



Figure 5. Summer Harvest in the Garden. (Photographer: C. Bundy)