



EDUCATIONAL
SERVICE
DISTRICT 112



THE SUSTAINABLE CLASSROOM PROJECT

Elementary Case Study: Evelynne

Project designed and developed by the
ESD 112 Educational Technology Support Center
Debbie Tschirgi, Director
2500 NE 65th Avenue
Vancouver, WA 98661
Phone 360.750.7505

Research design developed, conducted and
reported by MLaCounte Services
Dr. Marlene LaCounte, Principal Investigator
6134 SE Sigrid Street
Hillsboro, OR 97123
Phone 503.577.2263



<http://edtech.esd112.org>

About Evelynne

Evelynne has had her “dream job” as an elementary school for 13 years. She wanted to be a teacher as a young child but did not go to college until the age of 30 when she was a single parent with three children and holding down a full time job. She holds degrees at the Associate, Bachelor and Master levels.

Her love of teaching and drive for excellence led Evelynne to become an educational innovator and leader early in her teaching career. During her first years of teaching, she was involved in an intensive process for implementing multi-age classrooms in her school district. In preparation for this innovation adopted by her district, Evelynne researched the approach, shared information with parents and staff, and visited other schools that used the approach to see it working in action.

Shortly after Evelynne took a job teaching in her current school, the same energy and leadership she displayed for multi-age classrooms at her last school became focused on integrating technology into her second grade classroom. She was selected as a grant participant in 1999 when her school received a grant entitled *Technology and the Essential Learnings: Developing Effective Classrooms (TELDEC)*. A team of teachers was selected from the school to develop effective classroom models in which technology was used to support and integrate state standards into teaching and learning. As a TELDEC teacher, Evelynne received hardware (computers, scanner, digital camera), software and resources, and training. Although Evelynne didn’t consider herself a computer person, the grant provided intensive training so she felt comfortable implementing the model into her classroom and sharing her experiences with colleagues in her school district and across the region. In 2000, her school was chosen to be part of the Bill and Melinda Gates Foundation Grant – Round 1. This grant, which Evelynne assisted in writing, provided one computer for every four students in the school and focused on helping all children succeed by assisting schools and teachers to implement seven attributes of highly effective schools – common focus, high expectations, personalized instruction, respect and responsibility, time to collaborate, performance based assessment, and technological tools.

Throughout these years of using technology in the classroom, Evelynne developed a substantial repertoire of technological strategies to enhance her teaching and student learning on a daily basis. She used technology to gather information and resources for lessons from the Internet, and her students used the Internet to study and follow the Iditarod sled dog race as well as to hear “book talks” by authors and research other topics. Her students regularly used computers and related technologies (scanners, digital cameras, etc.) for slideshows, projects, storywriting, spelling practice and listening to and interacting with content.

Evelynne’s Classroom



Introduction

Evelynne applied for the Sustainable Classroom Grant in order to extend her knowledge about teaching strategies and add new technology resources to her classroom. She wrote:

I attended a meeting at the ESD for this grant and...I was especially amazed with the [interactive whiteboard]. I could clearly see myself using it effectively with my students. It's an amazing way to interact with my kids and enables my kids to interact with each other. The [interactive whiteboard] gives each student more of a voice in the classroom. Also, my school just finished our last year of the Bill and Melinda Gates Foundation grant and so I feel the need to try something new! Learning new things motivates me and my kids!

At the beginning of the Sustainable Classroom Project, Evelynne's second grade class had twenty-four students. Her classroom was predominantly white, non-Hispanic (19/73%), with a substantial minority (5/23%) of Hispanic students and one Native American student. Evelynne's school cited a free or reduced lunch rate for 56% of the students. Evelynne reported that the "socio-economic makeup of [her] classroom covered a wide range" and families of many of the minority students in her class seemed to be struggling. On the other hand, she said, "Some families have been here for generations but we have a new, wealthier population who has relocated to the Columbia River Gorge for its windsurfing and beauty."

The Book Study

CHAPTER 1: BEGINNING THE STUDY

The Sustainable Classroom Project began with difficulty in Evelynne's classroom. Her classroom was set up with Macintosh computers and because she had substantial skills using that platform she requested that the school district supplied laptop be Macintosh. She wrote in her first journal entry:

Although I'm so excited about my new technology and book study, I'm finding the beginning to be frustrating. Technology is wonderful when everything goes well! My equipment is mostly installed. It was challenging trying to get the correct software for my [interactive whiteboard]. First, I received the professional PC version and then a week later I received the professional Mac version. Now I finally have the Primary Mac version and the Resources software didn't work...Then I tried the discussion board part of the grant and it wouldn't work. I completed the lesson twice at home but it didn't submit for some reason. Then I worked at school today and it worked! At least it will be easier the next time.

"The book for our book study is interesting," Evelynne wrote, "and will integrate nicely with our next Language Arts strand."

INSTRUCTIONAL STRATEGY 1: SIMILARITIES AND DIFFERENCES

Unit Topic: Language Arts – Fairy Tales
Technology Used: Interactive whiteboard

By the second week of the project, things seemed to be "coming along," according to Evelynne. She was comfortable with the instructional strategy, *Similarities and Differences*, and had regularly used Venn diagrams. Her initial thought was that she might try a comparison matrix with a language arts lesson on fairy tales. She wrote: "One teacher in our group [in threaded discussions] gave me the idea of using a comparison matrix to compare fairy tales and so next week

we're going to find similarities and differences of four different fairy tales that we've read and summarized." However, Evelynne found she needed to pare back her ambitions. "Since this grant process was new to me," she wrote in her second journal for the chapter, "I chose a comparison tool that I was familiar with and had used many times, the Venn diagram."

The goal of the experimental lesson was for students to be able to distinguish the similarities and differences in two stories they had read. Evelynne began the lesson by asking students to review the elements of the stories with a partner. Then, as students told her the elements of each story, Evelynne asked them if the element was similar to or different from the other story. According to student responses, she filled in the Venn diagram on the interactive whiteboard.

Evelynne wrote,

The difficult part for me with this lesson was becoming comfortable with the technology I was using. Since I've had so many difficulties with my equipment, I hadn't spent as much time practicing, as I would have liked...Now that I have a resource library for my [interactive whiteboard] I have the tools to make a Venn diagram in a much easier way! Plus, it looks much better than the one I created!

In summarizing the chapter, Evelynne said,

The main thing I've learned from this chapter is that there are many ways to show comparisons in the classroom, even with second graders. I tend to always use the same comparison tool...I plan on using the comparison matrix next. Chapter two has reminded me that Venn diagrams work great but I should try other comparison models too. One day I might even tackle metaphors or analogies!

In using the wireless response system to evaluate the lesson:

- ◆ 96% of the students in Evelynne's class voted that they absolutely or mostly understood the lesson ideas;
- ◆ 100% of the students indicated that the instructional strategy absolutely or mostly helped them understand the ideas;
- ◆ 100% thought the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 100% liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 2: SUMMARIZING AND NOTE-TAKING

Unit Topic: Reading – Summarizing Stories Technology Used: Interactive whiteboard

The second instructional strategy, *Summarizing and Note-Taking*, was also familiar to Evelynne, as she had been using several of the suggested techniques in teaching math story problems. One technique she hadn't used and wanted to try was the Conversation Frame that she adapted to the story "Billy Goats Gruff". She wrote, "The story was a well known book that most all my kids loved (Billy Goats Gruff). Some had even done a play of it in first grade. So I felt that they could easily adapt the story to this model."

In preparation, she put the conversation frame questions in a Kidspiration diagram on her interactive whiteboard and recorded student answers as they gave them during class. Then, she printed out copies of the completed web and led a Pair Share activity about the dialog elements. Much to her surprise, the students didn't seem to be very engaged in the activity. In her analysis, she wrote:

What I noticed during my lesson was that the kids didn't seem as excited and eager as before when I used the [interactive whiteboard]. I got to thinking about this and realized that I "did" the whole

lesson and they only told me what to put and where. I've noticed that when they are actively involved in the lesson by coming up to the [interactive whiteboard] and doing something they seem more interested in the lesson. Even those who weren't at the [interactive whiteboard] seemed to be paying better attention.

As far as the lesson went, Evelynne said, "...the lesson was good and the results were what I was looking for. I like the conversation frame, but I think I'll continue using the narrative frame more often."

In evaluating the lesson using the wireless response system:

- ◆ 91% of Evelynne's students indicated that they absolutely or mostly understood the ideas in the lesson;
- ◆ 96% said that the instructional strategy used in the lesson helped them understand the lesson ideas;
- ◆ 100% said they believed the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 87% reported they absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 3: REINFORCING EFFORT AND PROVIDING RECOGNITION

Unit Topic: Spelling Practice

Technology Used: Interactive whiteboard, document camera

For the instructional strategy, *Reinforcing Effort and Providing Recognition*, Evelynne chose a spelling homework lesson. She wrote, "I hope to show that the more you practice at home, the better your score will be on your test." Since her class was studying inventors in science and getting ready for the science fair, her plan was to prepare a character web of characteristics of inventors, show videos of famous scientists, and in the discussions, point out that one characteristic of all of the inventors was their persistence. She would relate this to the students and studying spelling. Then she and the students would keep daily records of student-reported study of spelling words. After the spelling test was given, she and the students would look for correlations between how much they studied and their achievement on the spelling test. Students would use the wireless response system to indicate the amount of time they had spent studying spelling each night.

Just as the plans were complete, Evelynne showed up at school one morning to find her class-room flooded. The damage was so severe that her class was moved to another area for nearly six weeks. That meant six weeks without use of her technology. As luck would have it, the outside observer was scheduled to visit the classroom during this lesson, as well, so Observation #1 was cancelled. The good thing about the timing was that it happened just before the winter holiday break, so the amount of school time affected was less than it would have been at another time.

In spite of the disruption, the lesson went on without the technology and Evelynne wrote, "I really enjoyed this lesson on reinforcing effort." She said:

The videos seem to bring the scientists to life. The really great thing is that they give a character trait to each scientist. We heard over and over about "never giving up, keep trying, defending what you believe is true, diligence, and more. We learned that "effort" was crucial for being a successful scientist. So then, we applied "effort" to our spelling practice behaviors and we learned that when we practice our spelling words every night we are more successful on our spelling tests. Even my great spellers felt that they were better at spelling their words more efficiently. Every student got a "wow" on his or her spelling test (100% correct!).

Student data for this strategy was not collected due to the disruption caused by the flood.

INSTRUCTIONAL STRATEGY 4:

HOMEWORK AND PRACTICE

Unit Topic: Mathematics – Math Timings

Technology Used: Document camera, wireless response system

By the fourth instructional strategy, *Homework and Practice*, Evelynne reported that she was “totally stressed out.” She planned for students to complete addition of math problems for one minute every day for a week and record the number of problems completed daily. She used the document camera and a daily recording sheet. Students completed their math timings, counted the number of problems completed, recorded it using the wireless response system and compared their daily numbers to see if they improved with practice. Evelynne wrote in her journal:

Help! I'm totally stressed out and I just completed my worst lesson yet! On the positive side, every one of my students improved their score with daily math timings and they noticed for themselves that doing their timings every day helped them to get faster. I guess that's a good thing but it wasn't my best lesson. I think I'm just trying to get caught up! Then when we did our student assessment, the [wireless response system] wouldn't work. We tried re-registering them but that didn't work either.

Eventually, the wireless response system worked and students evaluated the lesson. Student evaluations indicated that:

- ◆ 100% of the students absolutely or mostly understood the lesson ideas
- ◆ 100% of the students absolutely or mostly believed the instructional strategies used helped them understand the ideas;
- ◆ 70% thought the technology helped them understand the lesson ideas; and
- ◆ 96% liked how they learned the lesson.

INSTRUCTIONAL STRATEGY 5:

NONLINGUISTIC REPRESENTATIONS

Unit Topic: Social Studies – An introductory look at Alaska

Technology Used: Interactive whiteboard

By strategy five (Chapter 6), *Nonlinguistic Representations*, Evelynne had started her annual Social Studies unit on the Iditarod. This would continue to be the topic of Sustainable Classroom Project pilot lessons for the next two strategies as well. Evelynne wrote in her first journal: “I loved reading Chapter 6. I strongly believe in nonlinguistic strategies for my young students.”

She continued:

I'm sure it's important for all of us but almost everything I do is visual. Through my own experiences, I've learned that I remember so much more if I am taught in a visual manner. Remembering information with pictures or symbols sticks in my mind so much easier than words. Any time I can create a visual model for a child, I will. I draw little pictures above words for my non-readers. I use a lot of simple graphic organizers so that students can organize their thoughts. I've had some schooling on how the brain works and teaching visually. It's interesting to watch for children who touch the side of the hall as they walk down it. They are grounding themselves and they're very visual. Or watch for kids who are always out of line when your class lines up to leave for recess. They don't even see themselves as being out of line. One simple drawing will show them what they need to look like. I learned about picture drawing to help kids solve problems. It works amazingly well.

The outside observer watched the experimental lesson Evelynne prepared for the instructional strategy, non-linguistic representation, and noted the following:

Observation #1:

Evelynne's second grade classroom was observed for the first time at 10:30 a.m. on February 8, 2006, while she tried out a strategy for nonlinguistic representations in a Social Studies lesson about Alaska. The lesson was introductory to a study of the Iditarod race that students would be following later in the month. Nineteen students were seated at four tables in pods of four-to-six. An interactive whiteboard, Kidspiration, books, globes, and sticky notes along with a classroom sound system were used during the lesson. . (Note: Evelynne delayed the start of the lesson and switched recess time to accommodate the observers who were delayed in traffic due to an accident on the freeway; hence, the lesson could not be completed during the day of observation.)

Evelynne started the lesson by reminding students of the globe work they had done the day before. The students eagerly volunteered information about what they had found. She then started a KWL chart, asking students what they **Know** about Alaska and what they **Want to Know**. Students eagerly responded orally to the questions.

Next, Evelynne brought up a Kidspiration web on the interactive whiteboard and asked students to list categories of things they **Want to Know** about Alaska. The students enthusiastically raised their hands and suggested categories such as animals, Iditarod, people, land, etc. and Evelynne built a web of items listed by students related to each category. Evelynne probed students' responses so that they analyzed the category their items would go. The students rearranged items into categories as needed.

When the web was completed, Evelynne divided the students into groups to work on each category and printed out a copy of the chart for each group to work on during the next part of the lesson. The lesson proceeded the next day with students using books to find information about their category, writing the information on sticky notes, and placing the notes on a big paper web hung up in the room.

After the lesson, Evelynne reflected in her journal:

I don't know if my thoughts have changed much after completing chapter 6. I always have believed that nonlinguistic representation is what's best for kids. As long as I teach I will make things visual whenever the opportunity arises. I know that kids need to see it and touch it before they can understand it. My best lessons are those where I've taken the time to draw my expectations, to visually teach vocabulary or to model procedures to complete a task. This chapter was easy for me because it's how I think and what I think is important.

Student data was not collected for this strategy.

INSTRUCTIONAL STRATEGY 6: COOPERATIVE LEARNING

Unit Topic: Interdisciplinary – Musher Teams
Technology Used: Interactive whiteboard

Like nonlinguistic representation, *Cooperative Learning* fit Evelynne's educational philosophy. She had been trained in it and had worked diligently to use its research-tested, effective characteristics in her teaching. She wrote:

I have used this approach many times before in my teaching but I appreciated revisiting the strategies as well as the research. In the past, I have put time and energy into developing a good cooperative lesson where heterogeneous groups were arranged after a great deal of thought for student placement. In the past, I have put more focus on roles for groups where everyone has a part and is a useful and successful member of that group. I can remember when my lesson was as much about developing my cooperative group as the material I wanted to teach. Those cooperative lessons were (usually) very successful for everyone.

She went on to say: “I still use cooperative grouping strategies in my class room but I’ve found that I don’t do the style of cooperative lessons that I know can be so valuable in the classroom setting. I have a list of excuses but I guess time is the main one.”

Her plan for the lesson was to set students up in heterogeneous groups, create a web on the interactive whiteboard of students and mushers and lead a discussion about teamwork. Students would participate in a full class brainstorming session, then conduct research on their mushers in teams. They would find information on the World Wide Web (official Iditarod site), in books, past and current race programs, etc. and create a display to share what they learned with their peers. The debriefing would include a discussion on the effectiveness of their teams and improvements needed.

At the end of the lesson, Evelynne reported, “We’re still in our musher groups and the teams have worked well together. Today the first musher crossed the finish line into Nome. The kids were so excited. We’ll continue working in our groups until the last musher has crossed the finish line.” In analyzing cooperative learning, she wrote:

This has been such a great activity! This is a class that works well together no matter what the grouping where as I’ve had some combinations of kids that can’t work together no matter how much energy I put into their grouping. But, I do think that it’s a great way to teach kids how to work together to complete a task.

When the students evaluated the lesson:

- ◆ 100% believed they absolutely or mostly learned the key ideas in the lesson;
- ◆ 100% thought the instructional strategy absolutely or mostly helped them understand the lesson ideas;
- ◆ 100% thought the technology absolutely or mostly helped them understand the lesson; and
- ◆ 100% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 7:

SETTING OBJECTIVES AND PROVIDING FEEDBACK

Unit Topic: Interdisciplinary – Iditarod Assessment

Technology Used: Interactive whiteboard, wireless response system

The strategy, *Setting Objectives and Providing Feedback*, was used as a means of reviewing and summing up what students had learned in the Iditarod unit. The goal for the experimental lesson was to assess what information the students learned about the Iditarod. Evelynne wanted her students to know facts about the Iditarod sled dog race.

To facilitate the assessment, Evelynne created a flip chart of multiple choice questions on the interactive whiteboard and had students respond to them using the wireless response system. She displayed the question and possible responses, called on specific students to read each question and possible responses, and asked the students to think about the question and predict a correct answer. When they had an answer in mind, they told a friend what they thought the answer was.

Evelynne reported, “We had some great discussions throughout the activity about the information and the correct answer. We had the best lesson today for providing feedback. The kids were all so focused and enthusiastic about the lesson. They all felt successful afterwards, even though I told them it was a test.”

In the student evaluation of the lesson:

- ◆ 100% of the students thought they absolutely or mostly learned the lesson ideas;
- ◆ 100% thought the instructional strategy helped them learn the lesson ideas; and
- ◆ 100% thought the technology helped them learn the lesson.

INSTRUCTIONAL STRATEGY 8: GENERATING AND TESTING HYPOTHESES

Unit Topic: Science – Using the experimental framework

Technology Used: Interactive whiteboard, document camera, wireless response system

Although her students used the scientific method in preparation for the science fair in the Fall and were familiar with the vocabulary of hypothesizing, the six techniques suggested in Chapter 9, *Generating and Testing Hypotheses*, were new to Evelynne. She decided the upcoming science unit on insects provided a good opportunity to try one of the techniques. For this lesson Evelynne planned to use mealworms, waxworms, hand lenses, journals, the interactive whiteboard, document camera, and wireless response system.

The goals for the lesson were that students would be able to generate a hypothesis based on prior knowledge and be able to explain how or why they generated it. As well, students would know that mealworms and waxworms change as they grow. They would be able to think about what they know in order to generate a hypothesis about what mealworms will become. In addition, Evelynne wanted her students to be able to transfer the knowledge learned about mealworms to waxworms.

Students began by observing mealworms and generating hypotheses about how they might develop. As they watched them grow, they altered their hypotheses as needed. Once they had experienced the process with mealworms, they began observing waxworms and using their previous experience to help them generate hypotheses.

One day of the lesson was reported by the outside observer.

Observation #2:

Evelynne began by reviewing vocabulary words using the interactive whiteboard. Students read the words aloud and spelled them together.

Selected students passed out the paper plates and cups containing mealworms in cornmeal to each student. After dumping out the mealworms on plates, students used hand lenses and observed and talked about changes they noticed.

Next, Evelynne pulled up the Insect World resource on the interactive whiteboard and the students took turns reading and reciting information about insects. Then, she displayed the hypotheses the students had generated and looked at how they had voted in terms of “agreeing with” or “disagreeing with” the proposed hypothesis.

After this, the students were given their waxworms to observe. Evelynne introduced two new vocabulary words, prolegs and spiracles, and asked students to find them on their waxworms. One student noted that his worm had “hairs” which prompted Evelynne to introduce the word “bristles.”

Students began to form hypotheses about how the worms move. Once they had put the worms away and washed their hands, the students got out their wireless response system clickers and Evelynne displayed several hypotheses. She asked the students to vote for the ones they thought were accurate. After voting, the students took turns explaining why they voted as they did and analyzed how the class as a whole had voted.

Evelynne wrote, “This was a rewarding chapter to do with my kids.” She went on to explain:

Since the beginning of our insect unit, when we generated our first hypothesis, the children have observed their mealworms going through some changes. The schema of many students at the beginning of our unit was that things are “born or hatched” and then they grow bigger and bigger. Now they’re learning about simple metamorphosis and complex metamorphosis and their schema is changing. Their vocabulary is also growing with words like larva and pupa. When each

student generated their hypothesis, they were able to explain their thinking as to why they generated their hypothesis. It is very important that kids learn how to think about what they know and then be able to explain their thinking. This skill will help them for many, many years.

Student evaluations of the lesson indicated that:

- ◆ 96% believed they absolutely or mostly learned the key ideas in the lesson;
- ◆ 100% thought the instructional strategy absolutely or mostly helped them learn the lesson ideas; and
- ◆ 100% thought the technology absolutely or mostly helped them learn the lesson ideas; and
- ◆ 100% liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 9: CUES, QUESTIONS AND ADVANCE ORGANIZERS

Unit Topic: Science – Building an Insect

Technology Used: Interactive whiteboard, document camera

The final instructional strategy, *Cues, Questions, and Advance Organizers*, was also piloted with the insect unit. Evelynne noted in her pre-lesson journal, “It seems like each chapter is getting easier or maybe the strategies kind of blend together.” Evelynne noted her appreciation of the value of good questioning to listener focus and learning. She also noted the following about advance organizers:

I'd never heard of an expository advance organizer or a narrative advance organizer. After I read about them, I understood their format but I'd never thought of them as an organizer. I've used skimming and graphic organizers before. I feel that graphic organizers are best for my grade level. Graphic organizers are more visual, use less words and can be organized in such a way that my students can follow the pattern of obtaining knowledge.

The goal of her pilot lesson on ‘Designing a New Insect’ was that students would show their understanding of insects by describing insects and designing a new one. Evelynne wanted her students to know what makes an insect an insect. For the lesson, she used the interactive whiteboard and a teacher-designed Kidspiration chart to facilitate a brainstorming session on “what makes an insect an insect.” After students participated in the discussion about characteristics of insects, Evelynne popped up a flip chart she had created with a design of the “new insect” she had created and talked through its parts and modeled how she created it using the document camera. Finally, the students designed and created their own “new insects.”

Evelynne was happy with the lesson. She wrote:

At first, I didn't think I should do another scientific method activity but I'm so glad that I did. The kids seemed to feel so successful because what they were doing was familiar and they knew how to do it. The end results of our lesson and activity were incredible. Some of my students were so creative with their insect designs. They thought of some ideas for their new insects that were very original and useful.

Student evaluation of the lesson indicated that:

- ◆ 95% believed they had absolutely or mostly learned the lesson ideas;
- ◆ 100% thought the instructional strategy had absolutely or mostly helped them learn the ideas;
- ◆ 95% thought the technology absolutely or mostly helped them learn the ideas; and
- ◆ 100% absolutely or mostly liked the way they learned the lesson.

CHAPTERS ELEVEN AND TWELVE: COMPLETING THE STUDY

Evelynne liked the way Chapter 11 was organized. She wrote, “It was easy to follow the five types of subject knowledge research and then each was followed by classroom practice. I especially liked the classroom practice part. I learned some great ideas for applying this research to my lessons.” In addition, she commented,

I really enjoyed reading the part about vocabulary. I hope to share what I’ve learned with the staff. I’ve learned that vocabulary is so important. One of my friends, who teaches at the high school, was commenting on how some teachers don’t focus on vocabulary at the beginning of the units and many of the kids are having a difficult time learning the material. She said this was especially true for the Hispanic children.

In spite of a series of problems with technology and her classroom during the first half of the year, Evelynne seemed to have a successful year working on the project. Evelynne tried out the technology and instructional strategies in the subjects of language arts, mathematics, science and social studies. According to the pre and post technology use survey, Evelynne reported that both she and her students added a number of ways to use technology to support and enhance learning.

REFERENCES:

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

Tschirgi, Debbie (2006). The Sustainable Classroom Model. Retrieved August 1, 2006, from ESD 112: Educational Technology Support Center (ETSC) Sustainable Classrooms web site:
<http://www.esd112.org/edtech/sustainableclass.html>