Community and Conservation Education

Providing Reading Strategies to Enhance EE

Jennifer A. Seitz, Martha C. Monroe, and Lindsey McConnell
School of Forest Resources and Conservation
University of Florida/IFAS

Abstract

The state of Florida places a strong emphasis on reading at all grade levels, especially in elementary schools. Many Project Learning Tree (PLT) activities suggest book titles to integrate reading and science but do not provide reading lesson plans or worksheets. Since few teachers have time to create lessons, environmental education activities are not incorporated into the reading and writing curriculum. Teachers provide instruction in reading and writing through a variety of methods including sentence structure, word comparisons, and analysis of written material. Providing environmental stories with reading and writing exercises may encourage teachers to incorporate environmental education activities into their classroom. To experiment with our ability to provide teachers with reading and writing exercises, we selected four PLT activities and found complementary, popular reading books at grade level for students. For each book reading exercises and writing prompts were developed, modeled after exercises teachers use with their classroom reader. Teachers can use natural resource-based stories and books to teach reading if they are given worksheets and exercises that engage students in reading and writing skills.

Emphasis on reading and writing skills in the classroom often leaves environmental education (EE) materials on the teacher's bookshelf. Many EE activities are written to address science concepts; however, these activities can support all subject areas (i.e., math and language

arts). Recent education reform compels teachers to stress reading and writing skills. Providing titles of books to use with EE activities is a common solution to making a connection between EE and reading.

Reading and writing in the classroom is more than reading a book with students. Word comparisons, sentence structure, listening skills, and analysis of written material are examples of what teachers are tasked with throughout the year. School districts provide reading textbooks, basal readers, vocabulary lists, and worksheets to assist teachers with this task. Incorporating EE in reading means using a book with an environmental theme to teach skills like: vocabulary, word choice, transitions, fact vs. fiction, and sequencing. Most teachers do not have time to create worksheets and lesson plans for environmental themed books.

If EE programs can be modified or designed to help teachers address reading and writing standards, and if evaluations indicate improvement in student achievement, educators may have a new reason to consider environmental education. An increased use of EE programs, such as Project Learning Tree (PLT), will help future citizens use ecosystem knowledge and science to make decisions about natural resources.

This project helped advance our thinking about how teachers could use PLT activities to teach reading and science in the classroom. Our goal was to determine if we could assist teachers to use science-based literature books to teach reading and writing concepts.

EXPERIMENT

In the fall of 2006, six elementary school teachers in four northwest and central Florida schools conducted reading and writing lessons about science topics with and without Project

Learning Tree (PLT) activities as a motivator. The project included 164 students between the ages of seven and nine (grades 3 and 4).

We hypothesized that if we provided teachers with an environmental focused literature book and accompanying resources to teach reading and writing skills and link them to a PLT activity addressing the same concepts as the literature book, teachers could more easily use EE to teach reading.

METHODS

We began the process by inviting seasoned 3rd and 4th grade teachers from PLT Schools to participate in the project. Teachers were asked which science themes they cover in the fall; we used these themes to identify four PLT activities that related to their course of study. Then we selected grade-level appropriate story books that matched each PLT activity theme. In one case we used a story provided in a PLT activity (Table 1).

We obtained 3rd and 4th grade teacher guides to the reading curriculum and used the exercises, discussion questions, and quizzes to create worksheets and discussion guides for each of the four stories with concepts that match the Language Arts standards. Teachers reviewed these worksheets and commented that these were appropriate and helpful teaching tools (Graphics 1 and 2).

Teachers attended a workshop for the team to familiarize them with PLT activities and the supplemental reading packets. A brainstorm session encouraged them to talk about how they might add to provided exercises with their repertoire of reading and writing tools. All classrooms received student copies of worksheets, books, and equipment for activities. All students received reading and writing instruction for one week on each of the four books.

Teacher reflection sheets were used to record how teachers used the materials and if the materials assisted in their lessons.

RESULTS

Teachers varied how they introduced literature books (e.g., silent reading, reader theatre and reading groups). The worksheets helped teachers to teach reading. Using themes is helpful to link science concepts with reading and writing skills. Some books sparked interest with students, resulting in more creative writing. Some activities increased student understanding about the concepts the book covered and sustained or created interest in a book.

Teachers can use natural resource-based stories and books to teach reading if they are given worksheets and exercises that engage students in reading and writing skills. Teachers used each storybook for five days of instruction and some teachers developed their own engaging activities to accompany the story. Challenges encountered during the project focused on selecting the perfect book with regard to appropriate grade level, scientifically accurate, engaging, and locally relevant storyline; and writing worksheets with knowledge items for young children that are clear, simple, and short.

The feedback from teachers is encouraging and tells us we are on the right path with creating these supplemental reading and writing worksheets. They believe that improvement in student writing and increased interest in some science topics suggests that children can be excited about science and reading at the same time.

Teacher Comments

"I love the lessons you sent! I think it is a great job of using a variety of assessments and comprehension levels."—Science teacher at St. Paul Lutheran School

"This was an exciting adventure into a curriculum to learn other than basal reading. I did enjoy reading through this material. I like the depth of your questions and all the different styles of learning… I'm excited about putting this all into our lessons."—Third grade teacher at Lakeland Christian School

"The pre-PLT activities built interest, provided prior knowledge, and helped students make connections as to why they were reading the story."—Fourth grade teacher at Shadeville Elementary School

CONCLUSION AND DISCUSSION

It takes time and energy to help teachers use environmental education activities and stories to teach reading. Teachers are not likely to create necessary resources on their own. Finding the correct mix of literature and hands-on activities that correspond to grade level standards and content for science, reading, and writing is a challenge. We suggest selecting grade-level appropriate reading books that target grade-level science concepts; developing reading and writing worksheets as well as science worksheets; selecting four to six engaging EE activities for each reading book that can be used to introduce each day's reading and writing work; and creating worksheets for multiple levels of abilities.

We intend to revise the packets based on teacher comments and expand the program to include more literature books and natural resource activities.

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Table 1: PLT Activity and Literature Book Selections for PLT Reading Study

PLT Activity	Literature Book
Schoolyard Safari #46	In the Forest of ST Shrew (from PLT Activity #8)
Energy Sleuths (Part A) #39	The Magic School Bus and the Electric Field Trip
Have Seeds, Will Travel #43	The Tiny Seed
Tree Cookies (Part A) #76 and Tree Factory #63	The Big Tree

Graphic 1: "The Big Tree" Student Worksheet #3

First name _____
Last name_____

The story uses vivid adjectives and similes to describe the tree and things around it. These descriptions help the reader picture what the author is referring to makes the story more enjoyable. Similes use the words like or as to compare. You will practice writing some descriptions yourself!

Examples using imagery:

***** Wolves prowled silently in the woods.
* The massive trunk was four feet thick and its branches reached 100 feet in the air.
* Heavy, wet flakes clung to the leaves, bending branches till they could stand no more.

Examples using similes:

* The sound of breaking trees was like a rifle fire in the woods.
* The leaves lay on the ground like an old brown carpet.
* After six years, the tree was only as tall as a rabbit.

Practice:

A. Use vivid words and details to describe something the illustrations on pages 2 and 3 of the story.

1)_____

_____

2)_____

_____

B. Now use similes to describe two more things on the same pages.

1)_____

_____

2)_____

_____

The story also uses onomatopoeia to help the reader better imagine what is happening. Onomatopoeia is a word that imitates the sound it is describing.

Example: *Snap…thump*! A large limb crashed on the yard. Then *whump*, another fell.

C. Can you think of 3 more examples of onomatopoeia?

1)_____

2)_____

3)_____

Graphic 2: Supplemental reading exercise for "The Tiny Seed"

Fact or fiction (LA.A.1.2.4)

Ask the students to take out a piece of paper and create two columns. Have students write the following column headings: fiction and fact. Based on the story, the students should fill in the chart.

Possible answers:

Fiction
All flowers grow to be giant in size
There are giant flowers taller than buildings, people, trees, and houses
Bees, birds, and butterflies visit flowers to see how large they are
Seeds drown and die when they are in the ocean (or other water)
A child stepping on a flower and breaking it means it can not grow anymore
Seeds can not grow in the desert
Ice never melts on a mountain top
Seeds can reach the sun's rays

Fact
Seeds need water, sunlight and soil to grow
Seeds can be blown by the wind
Flowers make seeds
Seeds grow into plants
Seeds are baby plants
Not all flowers have seed pods
Seeds are moved in other ways besides the wind
Birds and mice eat seeds
Friends give flowers to each other
Some plants grow faster than others
Seeds grow into plants in the spring
Plants do not grow in the cold weather
Seeds do not sprout on top of mountains in the snow
Seeds grow into plants with roots, stems and leaves
Weeds grow quickly if they get more sunlight and rain than other plants
When the wind stops blowing, the seed falls to the ground
Some seeds can not grow in the desert
Different types of seeds grow in different places (in the desert, water, etc.)