Introduction

I teach seventh grade Life Science students. Forty-two are gifted and talented, eighteen are learning disabled team-taught, and fifty are regular education students. Most of my students speak English as well as another language at home. Some students were previously in an English as a Second Language (ESL) program and are currently in regular education classes.

Seventh grade is the first time many of these students have to use a science textbook. Students have great difficulty comprehending the content reading in the textbook. I use Glenco Life Science to teach a variety of topics including observation skills, cell division, genetics, ecosystems, and ecology of the Chesapeake Bay.

Prior to beginning the grant project, I used a variety of reading strategies to help students learn how to read the science textbook and to help them comprehend the information they read. Even though I used a variety of reading strategies, I often used reading guides and reading road maps, therefore, I chose these two strategies for the study because students seemed to enjoy these strategies more than the others. Students were also more successful on assignments after using these two strategies.

Purpose

The purpose of my research project is three fold. First, I wanted to determine which of the two reading strategies students would choose to use most and why they would choose it. Secondly, I wanted to determine if using the reading strategy helped to motivate the students to complete textbook reading. Thirdly, I wanted to determine if student comprehension of the material improved. These determinations are helpful to science teachers that teach students who are poor readers and students that have difficulty comprehending.

Research

In their chapter on The Content Area, it is stated that, “one of the most valuable strategies for increasing students comprehension of content materials is through the use of study guides.” A study guide is a “set of suggestions designed to lead the student through a reading assignment by directing attention to the key ideas in a passage and suggesting the application of skills needed to read a passage successfully” (Roe, Stoodt, & Burns, 1995, pp. 267-268).
Study guides are advantageous for two reasons. First, they enable the teacher to reduce the amount of print students must deal with by using questions interspersed throughout the text rather than relying on the author-constructed, end-of-chapter questions. Secondly, these guides can be developed to aid students in comprehending the text. These guides can be used to help students vary their reading rate, monitor their comprehension, and focus on the most significant information.

One way to guide students through the reading of informational or subject area text is through the use of interspersed questions designed to coordinate with the topics and headings. In this approach, questions are sequentially presented and students answer them while they read through the textbook selection. In this way, the students see what the teacher, not the textbook publisher, thinks is important in the chapter (Roe, Stoodt, & Burns, 1995, pp. 267-268).

These are known as Reading Road Maps.

Data

I began my research project with the study of Ecosystems. The unit on Ecosystems focused on a variety of topics including the levels of biological organization, photosynthesis/respiration, food webs, energy pyramids, and interactions among living things. All of these topics required textbook reading and students needed to understand what they read. At first I alternated the use of a reading guide or a reading road map and for the last assignment students had a choice of which they wanted to use.

The unit began with the study of living things and their environments. I introduced the unit by covering the topics of study and discussing new vocabulary words. Next, I gave the students a reading guide (Attachment A) to complete. I reviewed the reading guide with the class and had them begin the assignment in class. What they did not complete became homework. During the next class session the reading guide answers were reviewed by the class. When students arrived at the next class they began with a quiz on living things and their environment. Most students were very successful with this quiz.

We began the next topic, Photosynthesis. This time students were introduced to the new vocabulary words and a reading road map was assigned (Attachment B and C). Most students had never heard of a reading road map, therefore, I had to “teach” them how to use and read them. Students were given this road map as an in class assignment. It has been suggested that reading road maps should only be one page long, therefore, I made two reading road maps for the Photosynthesis section (Attachment B and C).

After students completed the reading road maps we reviewed the answers to the questions. The next class period the students took a quiz on the materials
from the reading road map. There was an overall improvement in the students’ grades.

The next topic studied was Food and Energy in the Environment. This time students were given a choice of a reading road map or a reading guide to complete their reading assignment (Attachment D and E). The questions on both were exactly the same so students chose based on which style they liked best. Seventy-four students out of one hundred and nine chose to use a reading guide and thirty-five students out of the one hundred and nine chose the reading road map. Students were assigned to complete the reading at home for homework. During the next class the material was reviewed and students were given a quiz on the contents of the guide and the road map. All scores on the quiz ranged from 88 - 100. Students then completed a survey about which they preferred, a reading road map or a reading guide.

Conclusion

I concluded the study by giving the students a survey (Attachment F). When students completed the student survey, seventy-nine students out of one hundred and nine commented they would always choose to use a reading guide, twenty-seven students out of one hundred and nine commented that they would choose a reading road map, and three students were indifferent.

According to one student “reading guides are nice because they give you the space to write on the sheet under the question, so you know how much to write.” Another student commented that “reading guides show you how much to write or how much space to use to answer the question.” Finally, a third student remarked that reading guides “do not require a separate piece of paper to write the answers on, you can stay organized by keeping it all on the same piece of paper.”

Based on the comments and the results, I concluded that most of the students prefer to complete science textbook assignments using a reading guide because it helps them to know what the teacher expects them to know, how much the teacher wants them to write, and what order the teacher expects them to learn the information.

Students commented that if they had a reading guide to use along with a textbook reading assignment they would be more willing to complete the assignment. They also said the guide makes it easier for them to read the pages and to know what the teacher expects them to learn.

In addition, student’s quiz grades did increase when they were use to using the reading guide. Student comprehension of the content was improved by using a reading guide. I would recommend using these guides to improve student comprehension of textbook reading.

References