The Use of Trade Books in Science Classrooms

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ABSTRACT

Trade books have become a staple in many subject area classrooms. However, research shows that many trade books simply do not contain enough factual information to be effective as a means of instruction. This article reviews the research available on trade books in the subject area classroom. Research supports the use of accurate, purpose-driven trade books in the subject area classroom, but calls for more quantitative research on the effectiveness of trade books versus textbooks. Only after careful critique of each proposed book, should trade books be incorporated in science classrooms.

Introduction

Choosing trade books to accompany lessons in a science classroom can be a daunting task for any educator, new or veteran. There are so many different trade books available today and some educators simply do not know where to start when choosing one that best suits the lesson being taught. An exploration of the reasons to use trade books in the classroom, the characteristics of good trade books, the cautions to heed when using trade books, and the variety of resources available for educators to employ when searching for trade books may be valuable for science educators.
Purpose of the Article

The purpose of the article is to discuss how trade books can be utilized in subject area classrooms, particularly the science classroom. Science trade books have many useful features in the classroom setting.

The Use of Trade Books in Science Classrooms

So many novice teachers go into the science teaching field with the need for enrichment resources. For that reason, Royce (1996) suggests using trade books as a resource to use because they make teaching science more attainable to new teachers. She also states that using trade books can be an exciting way to introduce new concepts and allow students to experience through self discovery. There is also a strong correlation between using science trade books and increased achievement in both science and reading (Royce, 1996). Rop and Rop (2001) agree with Royce (1996) and further state that using trade books can fuel interest, increase curiosity, and extend textbook learning. Rice (2002) states that trade books are becoming widely popular because they tend to be more current than textbooks, tend to be more focused on a single concept, and unlike textbooks, provide for variations in reading ability and learning styles. Trade books about the same subject can be found on a variety of reading levels so even the lowest achieving student can experience success in a science classroom.

While trade books have many aspects that enhance the learning environment in a classroom, educators must exercise caution when choosing trade books. First and foremost, educators should check the accuracy of the information presented in the trade book (Atkinson, Matusevich, and Huber, 2009; Farland, 2006; Madrazo, 1997; Rice, 2002; Rop and Rop, 2001). Ensuring the accuracy of a trade book includes checking for misrepresentations in the text and illustrations. Illustrations should be accurate and labeled, and any text presented should have a basis in fact. The text should also adhere closely to science concepts and The National Science Education Standards. When the National Science Teachers Association (NSTA) panel reviews trade books for their annual list of recommended selections, the panel applies a specific list of the following criteria as found in Atkinson, et. al, (2009):

- Substantial science content
- Clear, accurate, and up-to-date information
- Clearly distinguished theories/facts
- Facts not oversimplified to the point where information is misleading
- Generalizations supported by facts
- Books free of gender, ethnic, and socioeconomic bias
• Logical presentation and clear sequence of ideas
• Appropriate content level for the intended audience
• Compatible text and illustrations
• Illustrations are accurate representations in terms of color and scale
• Appropriate trim size and format of the book for the subject and audience
• Well-organized layout that advances the text.

This extensive list of criteria used when selecting a trade book, may be useful to the science teacher experienced in content knowledge, but is not particularly useful when an educator does not have the content area knowledge needed to analyze the texts appropriately. For that reason, there are a number of science-specific lists that include exceptional trade books for the classroom. Atkinson, Matusevich, & Huber (2009) recommended the following list of lists:

• Robert F. Silbert Informational Book Award, awarded annually by the American Library Association’s Association of Library Services to children for outstanding informational books.
• Orbis Pictus Award for Outstanding Nonfiction for Children awarded annually by National Council of Teachers of English
• Washington Post Annual Children’s Book Guild Nonfiction Award
• ALA’s Notable Children’s Book List; fiction and non-fiction
• Outstanding Science Trade Books for Students K-12, chosen annually by the NSTA and the Children’s Book Council

These lists provide an excellent starting point for educators looking to enhance the science classroom experience for their students. Educators must also exercise caution when using a trade book with contradicting information. If a trade book has a layout that presents false information but corrects it as an educational feature, students will not necessarily remember the correct information. For this reason, trade books that present only accurate information should be used in order to abstain from students garnering misinformation.
As mentioned previously, trade books can be used to introduce new concepts to a science classroom. According to Rice (2002), trade books can also be used as a method providing, “a context for understanding difficult science concepts,” because they use pictures and graphics to explain ideas that are abstract (p. 553). Trade books are also an excellent resource to use when employing the inquiry method in science instruction, to help with the development of problem-solving skills, and to encourage scientific thinking (Rice, 2002). Successfully garnering knowledge from a trade book, such as a difficult science concept, can build self-esteem and increase social skills (Kralina, 1993).

Despite growing evidence that trade books can impact the science classroom in a wide variety of positive aspects, many researchers argue that science trade books only have a place in inquiry-based classrooms. Yore (2004) and Ford (2006) believe that reading about science should be done in conjunction with valid inquiry experiences. In doing this, students gain knowledge of the skills and methods used by scientists. These include writing and authenticating hypotheses, questioning, sorting important ideas, summarizing, and connecting to background knowledge. By using trade books in an inquiry-based setting, students learn to question information presented and develop the skills needed to discern accurate and incorrect information for future purposes. Students use information found in trade books, as well as other resources, to determine the accurate portrayal of the topic being investigated.

While there is much qualitative research available on the use of trade books in the subject area classroom, there is very little quantitative research to be found on the subject. In order to determine the validity of the effectiveness of trade books, more quantitative research needs to be conducted. One topic of importance is the difference between using only textbooks vs. trade books along with textbooks in a classroom. Another avenue of research should look at the differences in student achievement in classrooms where only textbooks are used versus classrooms in which trade books and textbooks are implemented.

**Concluding Remarks**

Because trade books have become so popular as a classroom resource, there are many avenues to be considered when choosing the correct one for the classroom. Educators must exercise caution when introducing any text into a classroom, and that is especially true when it comes to trade books. These books are used to increase content knowledge, and therefore, must be precise in the information they present. Trade books should be used to supplement information in science classrooms and should not be used as the sole source of information. While there are many resources available to help educators choose a content specific trade book, some are more reliable than others. Educators should pay special attention to the group that has generated the list and further explore the content in each trade book considered for classroom adoption. Trade books can be a wonderful addition to the classroom after careful selection for appropriate content.
References


