Making Informed Choices: Selecting Children's Trade Books for Mathematics Instruction

Traditionally, mathematics has been taught as a series of isolated sub-skills, with the emphasis on the product rather than on the problem-solving process. Many students have emerged from such instruction with memorized formulas in their minds but not at their fingertips. Real mathematics, however, is not so cut-and-dried. The practice of mathematics is not merely plugging numbers into an algorithm or a calculator to find a solution, nor is it just a subject in school or a set of rules to memorize. Mathematics is thinking and reasoning, solving problems, making connections, and being able to communicate ideas mathematically.

With the current emphasis on teaching processes and developing mathematical thinking, many teachers are seeking approaches that do not rely solely on traditional textbook methods and materials. One practice that is gaining popularity is to include trade books, that is, books other than textbooks, in mathematics instruction. Trade books allow students to interact with mathematics in context, helping them draw meaningful connections between experiences in the classroom and life outside the classroom.

Trade books can contribute significantly to mathematics education in a number of ways. First, they provide appealing settings that show students how mathematics exists in our world. As Leitze explains, “This mathematics-literature connection is a natural way for teachers to allow students to see mathematics in everyday society, to give meaning to mathematics, and to make it come alive” (Leitze 1997, p. 398). Many authors agree that these contexts help students frame problems to solve and build a bridge between the concrete and the abstract (Harsh 1987; Gailey 1993; Harris 1997). In addition, trade books give students the opportunity to develop language skills as they develop mathematical skills. As Gailey states, “Mathematics and language skills develop together as students listen, read, write, and talk about mathematical ideas” (Gailey 1993, p. 158). Students must develop language skills as tools to construct, articulate, and reflect on ideas. Indeed, language skills are as essential in mathematics as they are in any other content area. Many researchers assert the value of using trade books to encourage students to reason and communicate mathematically (e.g., Lewis, Long, and Mackay [1993]; Whitin [1992]).

In response to the increasing use of trade books, many publishers have rushed to fill the need for mathematics literature, offering the classroom teacher many titles from which to choose. Some books that have appeared on the market present meaningful, engaging experiences for students; others closely resemble glorified textbooks.

Although many books can be used to create mathematical situations and promote discussions about problem solving, some books are written specifically for mathematics content. Gailey (1993) established four distinct categories of trade books used in mathematics instruction: (1) counting books, which are "used to develop and reinforce counting and number concepts" (p. 258); (2) number books, "in which a specific number is emphasized" (p. 258); (3) miscellaneous storybooks, which include trade books that are not specifically written with mathematics in mind but happen to "touch on a mathematics concept" (p. 258); and (4) concept books,...