

Literature-Based Teaching: Prompting New Mathematical Experiences

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In her new book, *Math Memories You Can Count On*, Jo-Anne Lake describes a literature-based approach to teaching mathematics in primary classrooms. She begins by presenting stories of preservice teachers' experiences with mathematics. Not surprisingly, these memories (as she calls them) demonstrate the correlation between mathematics attitude and achievement. In Chapter Two, she emphasizes the importance of creating "optimal mathematics-learning environments" (p 13) through problem solving and communication and claims that using children's literature helps create inquiry-style instruction. Literature suggestions for developing problem-solving and communication skills are offered.

The next three chapters describe how new mathematics memories can be built through a literature-based approach to teaching mathematics. Here, Lake uses specific literature examples to show ten benefits of using mathematics-related books, to explain her nine criteria for selecting and organizing the literature, and to link literature with manipulatives. She focuses on reinforcing big ideas of mathematics using literature through problem-solving contexts.

The notion of planning from big ideas is not new. However, Lake presents big ideas as key concepts made up of one or two words. For example, *place value* is listed as a big idea. This is problematic, because place value is a topic. One big idea related to place value would be that "the place value system we use is built on patterns to make our work with numbers more efficient" (Small 2009, 15). It might be more helpful to teachers if the big ideas were listed as complete concepts, not topics.

Also in this section, I noticed that the format of book descriptions is not consistent with those of the first two chapters and those listed in Chapter Seven. I'm not sure why Lake chose a variety of formats, and I feel that a more systematic listing consistent

with that of Chapter Seven might have increased the book's readability.

Chapter Six contains an extensive description of assessment and evaluation strategies that include observation, performance assessment, peer and self-assessment/checklists, conference/interview, rubrics, portfolios, and math journals. While valuable information is given in this chapter, it seems disconnected from the rest of the book, and no direct link is made to using literature.

Chapter Seven is perhaps the most useful chapter for teachers. Here, Lake presents seven steps to implementing a literature-based approach. Organizing her material around five strands of mathematics (number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability), the author provides examples of how topics (or *big ideas*, as she calls them) can be addressed through literature. For each strand, she describes fifteen books by including a summary, the connecting strand, a read-and-discuss section that lists the book and related prompt for discussion, related questions, and a sample activity. In addition, each book is correlated to mathematical processes and manipulative ideas. Some of the books listed are more appropriate for intermediate classrooms, but the inclusion of these is valuable as teachers differentiate their instruction.

Overall, this is a very good book for teachers. It is rare for a book focused on using literature in mathematics classrooms to include a Canadian focus, which is especially evident in the measurement strand. Appendices for children's and professional literature are extensive and relevant for primary classroom teachers. Lake has included templates for graphic organizers used in planning to implement a literature-based approach to teaching mathematics.

For me, the title of the book remains ambiguous. I would like to have had evidence that the experience

of using literature can prompt new mathematical memories. The inclusion of teachers' or students' stories would have provided more clarity on the effect of using literature in classrooms.

This is not a teaching resource that provides a quick reference of books and teaching strategies. By embedding the book suggestions within the context of the various chapters, Lake demonstrates how she thinks literature can inform the teaching of mathematics. This book may provide guidance for the beginning teacher in planning for the use of literature in mathematics classrooms. However, for the more experienced teacher, a resource that expands on the examples presented in Chapter Seven might be more useful.

References

Lake, J. 2009. *Math Memories You Can Count On*. Markham, Ont: Pembroke.

Small, M. 2009. *Big Ideas from Dr. Small: Creating a Comfort Zone for Teaching Mathematics, Grades 4–8*. Scarborough, Ont: Nelson.

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