

Introduction

It is now generally agreed that traditional educational methods may not be the best way for all students to learn. School focuses on verbal and auditory skills, whereas many boys and some girls learn better using iconic and kinesthetic skills. What that statement means is that students are generally asked to read about or listen to information as their primary method of acquiring knowledge. But active learners do not learn well that way and are more likely to be successful if the information is presented to them in graphic form or if they are allowed to manipulate materials as part of the learning process. Traditionally, school presents lessons as verbal or auditory information. When active learners are not successful using these methods, they may be seen as having learning disabilities when, in fact, they are very good learners as long as they use methods which are not primarily verbal or auditory. In this work you will find active approaches to math, language arts, and science.

One of the hardest things for active learners to do in school is review. They have already covered the material once: Why go over it again? More important, review is rarely hands-on, but rather involves rereading the material or listening to someone, either teacher or fellow student, verbalize the material. Without some way to get physically involved in the review process, many students find it difficult to pay attention during a review session. You will find that many of the strategies in this workbook are specifically designed for active review. We think that you will find that using some of these methods will increase students' engagement in the lesson and improve recall of information.

This set of lessons was prepared by three teachers with expertise in math, language arts, and science. The math expert is a veteran teacher whose experience is in teaching math and social studies in public coed and single-sex schools. The language arts expert has been very successful in teaching boys in a public single-sex school and is passionate about getting boys interested in reading. The science and learning style expert has taught math and science in boys' and girls' schools over a long career. All of the suggestions in this work have been used in the classroom by one of the three. Bear in mind that these are suggestions, and while they have worked for us and for others we know, they are not prescriptions. We suggest that you use the following lessons as a starting place; we hope you find that they help you develop lessons that work well for you.

What follows in Chapter 1 is a very brief summary of how cognitive gender differences may affect the way that boys and girls learn. The premise

of this work is that more active approaches to instruction help experiential learners acquire information and stay focused on the task at hand. If this is information you are already familiar with, feel free to skip this chapter and move directly to the activities. You will find after Chapter 1 a chart (Table 1.1) which outlines how each activity meets cognitive differences directly enhanced by active learning. This may be sufficient to satisfy your curiosity. If, however, this is a topic on which you would like more detailed, in-depth information, you may want to consult the companion books also published by Corwin: *Teaching the Male Brain: How Boys Think, Feel, and Learn in School* and *Teaching the Female Brain: How Girls Learn Math and Science*. These earlier books provide complete descriptions of all of the neurocognitive bases for why these lessons work with students who learn best through iconic or kinesthetic methods. In this book, you will see examples of how others have successfully put this research to use in the classroom, and learn how to apply it yourself.

Each lesson begins with a suggested grade level for students who will benefit from the activity. These suggestions are purposefully vague because students and classes vary a great deal. Lessons for younger students will work with students in Grades 3 through 6 to 8. Lessons for older students are designed for students in Grades 6 to 8 through 10. When the lesson is described as being for all levels, that means that you can apply the ideas to material for your own students, whether they are third graders, tenth graders, or somewhere in between. Some of the math and science lessons are designed for students who have reached a certain skill level, such as lessons for algebra students; but whether your students are in a seventh-grade algebra class or one in ninth grade, the lesson should work for them. In short, not all of these lessons will work for all students in Grades 3 through 10, but you should feel free to adapt these lessons to your class. They have been designed with flexibility in mind.