

J JOSSEY-BASS TEACHER

GRADES 6-12

Strategies for Teaching **Boys & Girls**

SECONDARY LEVEL

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KATHY STEVENS, AND KELLEY KING



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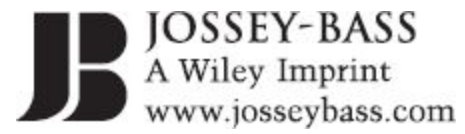
Strategies for Teaching Boys and Girls — Secondary Level

A WORKBOOK FOR EDUCATORS

Michael Gurian

Kathy Stevens

Kelley King



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About This Book

STRATEGIES for Teaching Boys & Girls: A Workbook for Secondary Level Educators is an invaluable resource for teachers working with students from sixth through twelfth grade. It weaves together brain science, adolescent development, and classroom strategies in a way that is both easily understandable and immediately applicable. This is the kind of book that teachers want—one that combines the right balance of “just enough” theory to help teachers become knowledgeable and a “whole bunch” of practice so that they can jump right in with the strategies on Monday.

We’ve organized this book around several important strategy domains so that you can go right to the sections you need. We do suggest that you start with Chapter One to lay a foundation about the brain. After that, feel free to skip around to the parts you most need as a teacher. You’ll find chapters on movement, visual teaching strategies, social interaction, offering choice, art and music integration, making learning relevant, and more. Each of these chapters provides you with a fascinating look at how the brain works and illuminates why these strategies are so important for all learners. Central to each chapter is an exploration of the differences between the male and female brain and the connection of these hard-wired differences to gender-specific teaching strategies. We think you’ll appreciate the comments from students about their own learning, as well as the anecdotes from teachers about what works in the classroom.

The highlight of this book is the extensive list of classroom activity and strategy ideas that span all content areas. We wanted to create a book for teachers that can be read and re-read many times and that will be a source of creativity

and inspiration for years to come. We hope that our ideas may infuse a new level of excitement, curiosity, and student learning in your classroom.

The Authors

Michael Gurian is a social philosopher, family therapist, corporate consultant, and the *New York Times* bestselling author of twenty books published in twenty-one languages. The Gurian Institute, which he co-founded, conducts research internationally, launches pilot programs, and trains professionals.

As a social philosopher, Michael has pioneered efforts to bring neurobiology and brain research into schools, homes, workplaces, and public policy. A number of his groundbreaking books in child development, including *The Wonder of Boys*, *Boys and Girls Learn Differently!*, *The Wonder of Girls*, and *What Could He Be Thinking?*, as well as *The Minds of Boys* (coauthored with Kathy Stevens), have sparked national debate. His newest work, *Nurture the Nature* (2007), provides a revolutionary new framework, based in neurobiology, by which to understand and care for children all the way from birth to adulthood.

A former university instructor, Michael has worked as a consultant to families, therapists, schools, school districts, community agencies, and other organizations. He keynotes regularly at conferences and has lectured at such leading institutions as Harvard University, Johns Hopkins University, Stanford University, and UCLA. His training videos are used by Big Brother and Big Sister agencies throughout North America.

Michael's work has been featured in various media, including *The New York Times*, the *Washington Post*, *USA Today*, *Newsweek*, *Time*, *Educational Leadership*, *Parenting*, *Good Housekeeping*, *Redbook*, and on the *Today*

Show, Good Morning America, CNN, PBS and National Public Radio.

Kathy Stevens, executive director of the Gurian Institute, is an international presenter and coauthor of *The Minds of Boys*. Her work has been featured in national publications including *Newsweek*, *Reader's Digest*, *Educational Leadership*, *Education Week*, *National School Board Journal*, and *Library Journal*.

Kathy has over twenty-five years of experience working in the nonprofit sector, focusing on children, youth, families, and women's issues. Her professional experience includes teaching music in Pre-K-8, designing and administering programs in early childhood care and education, domestic violence, juvenile corrections, adult community corrections, teen pregnancy prevention, cultural competency, and women's issues. Much of her early work was done in economically disadvantaged minority communities.

In addition to her work with the Gurian Institute, Kathy has designed and delivered training for the Federal Bureau of Prisons, Virginia Department of Corrections, Girl Scouts, U.S. Navy Ombudsman Program, Disproportionate Minority Confinement Task Force and a variety of nonprofit organizations. As a diversity trainer, she was honored to participate in the Children's Defense Fund's Institute for Cultural Competency at the former Alex Haley Farm in Tennessee.

Kathy lives in Colorado Springs with her husband. She has two sons and seven grandchildren.

Kelley King, director of the Gurian Institute's education division, has been a classroom teacher, special education

teacher, teacher of the gifted, and a school administrator for twenty years.

While a school principal, Kelley initiated and led her school through an improvement process targeted at closing the gender gap, including the analysis of the data, professional dialogue and training, and the identification and implementation of effective strategies. Through action research, she has been able to demonstrate the effectiveness of *The Minds of Boys* and *Boys and Girls Learn Differently!* theory to enhance the achievement of all students.

Through her work with the Gurian Institute, Kelley presents at schools and conferences across the United States. Her work has been featured on The Today Show and in national publications including *Newsweek* and *Educational Leadership*.

Kelley and her husband, Chris, live in Superior, CO with their two children.

About the Gurian Institute

IF you would like to help your school and community better understand how gender affects learning and living, please contact the Gurian Institute. Through our four divisions—Education, Family, Human Services, and Corporate—we provide training and services to schools, school districts, institutions of higher education, parent groups, businesses, youth-serving organizations, juvenile and adult corrections, medical and mental health professionals, religious organizations, and others serving boys and girls, and men and women.

We also provide keynotes and breakouts at conferences worldwide. There are Gurian Institute trainers throughout the United States, and in Canada, Australia, China and France.

We are committed to helping school districts, corporations and agencies become self-sufficient through internal training-of-trainer models. These are ongoing and serve populations over the long term.

A highlight of our training year is our annual Summer Training Institute, in Colorado Springs. Professionals join together for four days of training and networking. Some individuals become certified on the fifth day.

The Institute also provides books, workbooks, training videos for educators and parents, newsletters for parents and teachers, online courses and live chats, as well as other products.

For more information on services, products, and our philosophy, please visit www.gurianinstitute.com.



Acknowledgments

TEACHING is both a craft and an art. Each new teacher arrives in the classroom with a toolbox filled with ideas, strategies, passions, and hopes that will be transformed into opportunities for children, boys and girls, to learn how to read, add, subtract, think, ponder, and dream. With every passing school year teachers add new tools to their toolbox—they learn from professional development opportunities, from each other, from mentors, and they learn from the children.

The Gurian Institute has been invited into classrooms around the country, meeting wonderful educators who have honored us by allowing us to help them expand their toolbox. They have been the motivation and inspiration for this book. Dedicated administrators and teachers are working every day to understand how boys and girls learn differently, and by so doing help every student reach as high as she or he can. This book is richer as a result of teachers sharing their successes and students adding their voices. We are grateful to each and every one of them. We especially must acknowledge:

- Our Gurian Institute certified trainers, whose expertise and dedication carries them to hundreds of schools every year, sharing their knowledge and experience with their colleagues, practicing what they preach, improving the odds for each boy and girl who enters a classroom. Many of our trainers are educators just like you—principals, classroom teachers, curriculum specialists, school counselors—working in schools rich in diversity, challenge, and success.

- The outstanding educators in the Boulder Valley School District, especially Ellen, an exceptional mentor and role-model, and the magnificent teachers and staff of Douglass Elementary School.
- All the schools, teachers, administrators, and students who shared their wisdom and feelings with us—they make the book more real.
- The professionals who took time in their already over-booked lives to review the manuscript and offer invaluable feedback.
- The editorial staff at Jossey-Bass is simply the best in the business! The wisdom and support of Lesley Iura, Julia Parmer, Margie McAneny, Natalie Lin, Kate Gagnon, Pam Berkman, Dimi Berkner, and, as always, Alan Rinzler have combined to make it truly a better book than it would have been without their help.

Dedication

Michael: For Gail, Gabrielle, and Davita, and all the teachers.

Kathy: To all the teachers who dedicate themselves daily to offer each girl and boy a chance to develop to her or his fullest potential. I am in awe!

Kelley: I could not have participated in writing this book without the patience, understanding and support of my family. My husband, Chris, coached me to take it one step at a time as I pondered the magnitude of writing a book on top of being a full-time school principal. My children, Connor and Roxanne, were always so understanding when I sequestered myself in the study for long periods of time. They have been my greatest teachers about gender differences—as evidenced by my son’s exasperated inquiry one night, “Why do you have to write a book? That just means that people like me have to read it.”

1

What Could They Be Thinking?: The Science of Boy-Girl Learning Differences

Instead of thinking about a teenage mind as an empty house that still needs furnishings, educators and parents would do better to understand it as the rough framing of a house that still needs wiring, plumbing, flooring, and windows. Avoid treating teenagers like adults; they're not.

—Eric Jensen

OVER the past couple of decades, exciting research into the living brains of males and females has shown us not only that boys and girls are different at the organic level but also that how they learn includes many differences, from the day they are born. In just the past few years, cutting-edge research has begun to help us better understand the learning styles of both male and female adolescents. We are better able than ever before to answer such questions as, What goes on in a male and female brain when puberty begins flooding the system with hormones? What happens to boys and girls when their bodies begin the transformation from child to young adult? What does it all mean for teachers?

Watching students pour into the halls when the passing bell rings in any high school, it's easy to forget that we're seeing children. Many are physically mature. Some of the boys are really tall, their voices deep. Some wear a shadow of a beard by noon. Some of the girls are shapely and dressed like women. They wear makeup and designer clothing. Often students are paired up, boy and girl,

heading for their next class and making plans for after school and the weekend. They seem awfully sure of themselves.

But we are seeing children—children whose brains are still moving toward a maturity they won't reach for a number of years; children whose pubescent systems egg them on to take chances, seek novelty, ignore warnings, respond to impulses they don't fully understand. They are children who need strong, caring adult mentors and role models to help them navigate until their internal directional systems are ready to take over and lead them safely into the future. They need teachers to prepare them for life.

In the early days of the Gurian Institute's work with educators, we would ask the question "How many of you took a course on how boys and girls learn differently during your teacher training in college?" Even in audiences of several hundred educators, no hands would go up. When we ask that same question today, a few hands may go up. When questioned further, those who raise their hands generally report that they covered the topic of gender and learning briefly in an education class.

At the same time, when teachers attend our seminars and trainings, they often ask, "Why isn't this being taught in college? Why aren't schools of education teaching male-female brain difference? It affects every grade level." Fortunately, many schools are beginning to catch up to the newest brain research in learning, development, and gender. This workbook is part of that effort.

The Gurian Institute has spent twenty years developing materials and working in schools, training teachers in the practical strategies we have developed from what we have come to understand about how the male and female brains learn best. In this book, we are sharing what we know. You'll meet many middle school and high school teachers

who will also share strategies they have learned and developed, and your teacher's toolbox will be increased manifold.

This chapter will give you an overview of the latest information available on how boys and girls learn differently and how that difference can and should change the way you implement your curriculum. We hope to help you ensure that every adolescent you teach, male and female, will have the chance to succeed to his or her maximum potential. Many of you will read this information and think "YES! This validates intuitions I've had for a long time." We hope it will confirm that you have been on the right path as you work with your students. We hope that for many of you, this information will open the door to exciting new experiences as you implement what you learn.

You may ask, How can I effect change in middle or high school when my students have experienced years of institutional schooling that may have inadvertently had a negative impact on them? Shouldn't this science and research change the way we educate our boys and girls from the very beginning? The answer is yes, and we work with preschool and elementary programs to help them lay a foundation that you can build on when the students reach your classroom. In the meantime, there is still much you can do; remember that the adolescent years are ones of great possibility and promise. We hope that the information in this book, and the resources beyond this book that we offer, will help you make a difference for every student you teach from today on.

From the Beginning, Boys and Girls Learn Differently!

Where does gender in the brain begin? Soon after conception, boys and girls are on diverging developmental paths. If a child receives an X chromosome from each parent, a female plan goes into action. If a child receives one X chromosome and one Y chromosome, a different plan is activated, and a male system is designed. These plans result not only in different bodies but also in different brains.

Beginning at around six weeks, a male fetus triggers the mother's ovaries to provide testosterone to his fetal system. As a result, his genitals drop and begin producing the testosterone he needs. From that point until somewhere between five and six months of development, testosterone becomes the "chief engineer" of the developing male's body and brain, giving him the capacity for a higher muscle mass than a female, different iron and calcium ratios, and different brain "formatting." Developing female fetuses receive testosterone during the developmental period between six weeks and six months in utero, but not as much. They receive more estrogen-type hormones. This helps format their brains to be female. By six months in utero, boys and girls have been formatted with different brains.

This early developmental groundwork is critical for the male and female brain, as it plants the seeds that will grow and flourish when puberty again floods the brain with sex hormones. Testosterone will surge through the male system more than once during childhood and in great amounts during puberty. Female hormones—more than thirty of them—will affect girls significantly during puberty and through the child-bearing years.

Are these differences all that matter? Of course not. There are many similarities between girls and boys in utero and after they are born. There are also many differences among

girls and among boys that indicate how powerfully individual personalities affect ultimate development. Furthermore, the way a child is nurtured can affect how he manifests his maleness and she her femaleness. By the time these boys and girls saunter into your middle and high school classrooms, they share many characteristics—and they are at the same time very different. During adolescence, their male and female biology and chemistry will at times trump all other influences, making both their lives and yours really interesting.

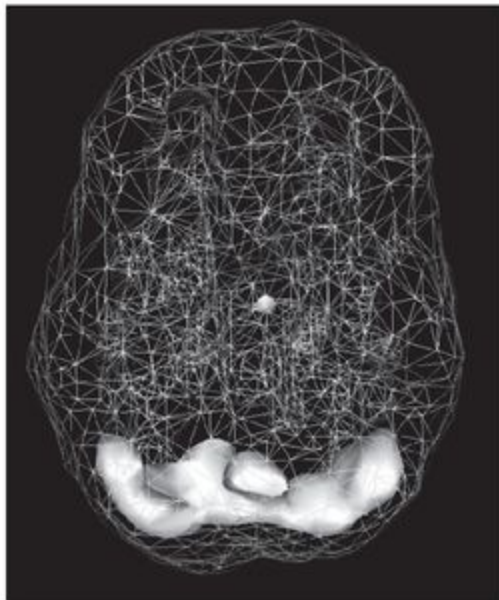
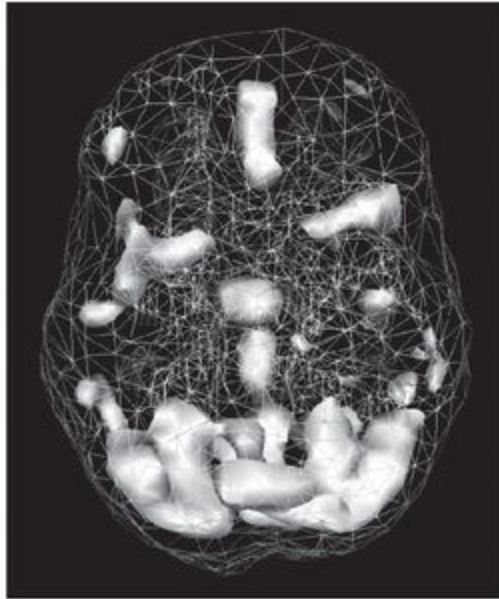
Caveats aside, gender is a big deal—especially in learning. Understanding differences in how girls and boys learn gives us a head start in meeting that challenge of instructing and guiding young minds.

What Are the Differences?

Ongoing research is still discovering new areas of difference between male and female brains, but many differences have already been identified that have implications for how boys and girls learn. We'll present some of these to you now, and please remember that we are generalizing based on the best relevant research available today. There will be exceptions to everything we say, as every child is an individual and brain differences range both between boys and girls and among boys and girls. Remember also that difference means only that—one is not *better* than the other. Both are equally capable of learning and succeeding; they will just do so in ways that we must understand if we are to create an educational environment that meets the needs of both.

Scans of the Female Brain (top) and Male Brain (bottom) at rest. The areas you see that look like bubbles are areas of activity.

SPECT scans used by permission of Dr. Daniel Amen



Structural Differences

Using *magnetic resonance imaging (MRI)*, *positron emission tomography (PET)*, and *single photon emission computed tomography (SPECT)* technologies, scientists can look at the living brain and watch it work. These advanced

technologies let researchers watch actual blood flow in the brain, see where the brain is working, and, by looking at male and female brains in this way, see that they are working in different areas when completing the same tasks.

Over the past couple of decades, technology has helped researchers focus on some specific areas of structural difference between male and female brains. The following sections describe some of the differences and their potential impact on your classroom.

Cerebral Cortex—The cerebral cortex contains about ten thousand miles of neural connections in each square inch! From an evolutionary standpoint, the cerebral cortex is the “newest” part of our brain and significant in making humans different from all other animals. If you could spread the cerebral cortex out flat, it would be about the size of a newspaper opened up. In order to “fit” over our brain, the cerebral cortex folds into place. This area, only as thick as about three of your hairs, is where the serious intellectual functions of the brain take place. Thinking, speaking, and recalling—all things that need to happen in a classroom—are controlled in the cerebral cortex. This area also facilitates memory functions, voluntary motor behaviors, impulsivity, decision making, and planning—again, important for learning. The female brain tends to have more connections between neurons in the cerebral cortex, which also tends to mature earlier in the female brain.

And this means—the increased number and speed of the neural connections may help girls process and respond to classroom information faster than boys and help them make transitions faster, multitask, and access needed verbal resources (reading, writing, complex speech) better than the average boy as they engage in learning. Earlier maturity may result in girls' being less apt to engage in high-risk behavior, less likely to respond impulsively, and, in general, more likely to "think before they act." It might also explain why girls tend to gather and complete their college application forms earlier than boys!

Cerebellum—The cerebellum, larger in the male brain, was once believed to be mainly involved in the coordination of our muscles, making us graceful dancers and good athletes. But research has shown that it's also involved in coordination of our thinking, our "mental muscles." Adolescents might be described as going through a period of mental clumsiness (along with their obvious periods of physical clumsiness). The cerebellum seems to have the ability to smooth out the complicated social life of adolescents and help them navigate their world smoothly and gracefully instead of constantly tripping over themselves. Physical activity is believed to influence development of the cerebellum.

And this means—for healthy development of the teen brain, including the cerebellum, activity is important. Today’s students are less active overall—they are sedentary while watching TV, playing video games, talking on their cell phones—and not doing as much “playing.” There is less recess and fewer hours of structured physical education classes, and fewer students walk to and from school. Bringing more movement into your curriculum will help both boys and girls, whose brains, including the cerebellum, are changing a lot during this period of life.

An example: while working with a school, grades 7-12, near Minneapolis, we spent a day observing classes, including watching the students do a marching demonstration for Grandparents Day. The teacher in charge of the ROTC program shared his frustration that the middle school and freshman boys especially had a really hard time learning to march in formation. “They just can’t seem to get their feet going the right ways!” He was blaming himself for not providing the right instruction to help them “get it.” After gaining a better understanding of adolescent brain development, he realized that many of the boys in the middle school and lower high school grades were simply suffering from adolescent clumsiness—he could see that it was a developmental stage. He was doing his best, and the boys were doing their best, but their bodies and brains were just not quite in synch with each other yet. The teacher’s increased patience helped the students be less stressed about their mistakes, which decreased as they moved through each grade and developmental stage.



Corpus Callosum—The corpus callosum is a dense bundle of nerves that connects the two hemispheres of the brain; research indicates that this area increases in size during adolescence. In females, this bundle of nerves tends to be denser and larger than in males, resulting in increased “cross-talk” between the left and right hemispheres. The anterior commissure, a tiny additional connection between the hemispheres attached to the end of the corpus callosum, is also larger in females.

And this means—girls are generally better at multitasking than boys, including watching and listening and taking notes at the same time. This gender difference may also help explain why girls tend to tune into their own and others’ feelings and move emotional content more quickly into thought and verbal processes. Girls can tell you how they feel as they are feeling, whereas boys often need time to process before they can begin to explain their feelings. Combined with the hormonal changes during adolescence, the increased connections between thinking and feeling may account for the hypersensitivity and tendency to be dramatic that girls exhibit during adolescence.

Brain Stem—This is the most primitive part of our brain. Our “fight or flight” responses come from the brain stem, and when we’re in crisis, this area of our brain takes over, telling the body how to respond. With a greater amount of