



With Boys in Mind / Teaching to the Minds of Boys

Kelley King and Michael Gurian, September 2006

Is something wrong with the way we're teaching boys? One elementary school thought so and decided to implement boy-friendly strategies that produced remarkable results.

Boys who don't read or write as well as we'd like come in all kinds. There's Garrett, who's perpetually in motion, his fingers drumming the desk. He's not focusing on his reading and pokes the student in front of him. He's becoming a discipline problem. There's Jared, who stares into space, failing to fill more than a few short lines with words. There's Dan, who turns in rushed and sloppy work and receives failing grades. When it comes to fulfilling the kinds of assignments that we call “literacy,” boys are often out of their chairs rather than in them.

At Douglass Elementary School, in Boulder, Colorado, a significant literacy gap existed among the 470 students. On the 2005 Colorado State Assessment Program (CSAP), boys attending Douglass underperformed the girls in grades 3–5 (the boys' scores ranged from 6–21 points lower, with a 13-point gap overall). Because boys represented at least half the student population at every grade level—and 75 percent of the special education population—it was clear that the gender gap had powerful implications for the school as a whole and for the futures of the students.

In looking closely at these statistics, the staff suspected that Douglass was not alone in facing classrooms full of boys who were not learning to read and write as well as the girls were. In fact, all over the world boys are struggling in school, with lower grades, more discipline problems, more learning disabilities, and more behavior disorders than girls (Gurian & Stevens, 2005). As experienced teachers of boys, as parents of sons, and as professionals charged with solving a specific and compelling problem, the educators at Douglass went to work. They discovered that recent brain research backed up many of their intuitions about gender and learning styles (see Gurian, Henley, & Trueman, 2001).

By introducing more boy-friendly teaching strategies in the classroom, the school was able to close the gender gap in just one year. At the same time, girls' reading and writing performance improved. On the Colorado State Assessment Program, Douglass Elementary students experienced an overall net percentage gain of 21.9, which was the highest achievement gain of any school in the Boulder Valley School District. Moreover, Douglass reversed the typical trend of girls outperforming boys: The boys experienced a 24.4 percentage point gain in reading and writing; the girls a 19 percentage point gain, which constituted three times the gain of girls in other district elementary schools. Most remarkably, Douglass special education students achieved 7.5 times the average gain for this population of students in the district, coming in with a 50-point gain.

A Look into Boy-Friendly Classrooms

How did Douglass manage these successes? Using a theory developed by one of the authors (Gurian et al., 2001; Gurian & Stevens, 2005), the school analyzed the natural assets that both girls and boys bring to learning (see “The Brain: His and Hers,” p. 59). Douglass realized that its classrooms were generally a better fit for the verbal-emotive, sit-still, take-notes, listen-carefully, multitasking girl. Teachers tended to view the natural assets that boys bring to learning—impulsivity, single-task focus, spatial-kinesthetic learning, and physical aggression—as problems. By altering strategies to accommodate these more typically male assets, Douglass helped its students succeed, as the following vignettes illustrate.

Increasing Experiential and Kinesthetic Learning Opportunities

Today's assignment in Mrs. Hill's 4th grade class is to arrange words and punctuation marks into a sentence that makes sense and is grammatically correct. Instead of relying on worksheets or the overhead, which might have bored students like Alexander, the teacher directs the students to arrange cards representing the sentence parts across the classroom floor. The task-oriented discussion and interaction, the physical movement, and the orientation in space access the boys' neurological strengths, keeping them energized and attentive. Alexander and his group are working hard to complete their grammatical challenge before the other groups do.

These male-friendly elements have also energized the girls. Many of them like a good debate, competition, and moving around.

Supporting Literacy Through Spatial-Visual Representations

Across the hall in Mrs. Johnston's 3rd grade classroom, the students are writing. Timothy has great ideas and is always trying to please, but at the beginning of the year, he had great difficulty writing even a single paragraph. Formulating his ideas into well-organized thoughts, coupled with sitting still and the fine-motor task of writing, often overwhelmed him. His mother testified to his frequent meltdowns at home.

Realizing the need for nonverbal planning tools, especially in males, to help bridge the gap between what students are thinking and what they're able to put down on paper, Mrs. Johnston now asks Timothy and his classmates to create storyboards, a series of pictures with or without words that graphically depict a story line. The pictures on the storyboard prompt the brain to remember relevant words, functioning for these learners as first-stage brainstorming. Now when Timothy writes, he describes what he has previously drawn and then adds to that foundation. His spatial-visual assets are helping him to write.

Letting Boys Choose Topics That Appeal to Them

Although parents and educators are quick to point out to students the more practical relevance of reading—you need to read to get through high school and college so you can get a job—this kind of reasoning works more readily for girls than for boys. Said one 6th grade boy, “The only reading that's a *must* is reading what's on the computer or in a football manual. There's no point to reading a book for pleasure.”

Many teachers are familiar with this kind of response. Boys often seem to think that what they read in language arts class is irrelevant. Mrs. Vaneer decided to innovate in this area. In her 2nd grade classroom, most of the boys read and write about such topics as NASCAR racing, atomic bombs, and football or about such situations as a parrot biting a dad through the lip. Many of the girls write about best friends, books, mermaids, and unicorns.

When asked why he thought he was writing about superheroes whereas Brittany was writing about her best friend, 8-year-old Luke replied, “Because boys have more R-rated minds than girls do,” with “R-rated” referring to a preference for aggression scenarios, competition, action, and superhero journeys. Brittany concurred as she rolled her eyes in a “Yes.”

Although Mrs. Vaneer is aware of the potential for excess here, she now understands how relevant this focus on action and heroism is to males, and she sees that letting boys write on these topics has improved their papers. It has also provided her with numerous opportunities to teach lessons on character, nonviolence, and civility. Moreover, giving students greater choice in what they read and write has improved writing among both boys and girls.

Helping Boys with Homework

One of the primary reasons that some boys get *Ds* and *Fs* in school is their inattention to homework. This was true for 5th grader Todd, who generally did his homework in a shoddy way—or not at all. Douglass teachers now request that parents sign homework assignments. Homework with no signature requires an explanation. This way, the school gets parents involved, encouraging them to supervise homework and cut out distractions that their children may be experiencing, such as TV and video games, until the homework is completed. This policy also keeps parents apprised of the quality of the homework that their child is turning in.

Todd's grades have improved since this policy was started. He's now getting *Bs* instead of *Ds* on his language arts assignments. His teacher, Mrs. Steposki, is especially vigilant, meeting with him regularly to see whether he's gotten his homework signed and supporting his parents in keeping him focused. Although Todd still doesn't enjoy a lot of his homework—much of it feels like busywork to him—he does feel pride in getting a *B*. “Things are better now,” he says.

Offering Single-Gender Learning Environments

One of the innovations that teachers can use in targeted ways in coeducational classes is single-gender grouping. Mrs. Holsted has decided to divide her 2nd grade class today to give the students a choice in reading material. The girls choose several *American Girls* doll books; the boys choose Lynne Reid Banks's *The Indian in the Cupboard* (HarperTrophy, 1999).

Soon the girls are on the floor with a giant piece of chart paper and markers. They label each of three circles of a Venn diagram with the name of a female book character and then they write down adjectives to describe that character. Meanwhile, in the boys' group, Ryan and David are writing lines for a play about the novel they've chosen, happy to be able to act out the battle scene. A lot of what these students need to learn “sticks” because of this approach. Tomorrow, the students will return to their coed groupings, and some will note that they like being back together.

Making Reading and Writing Purposeful

Quite often, boys do their best work when teachers establish authentic purpose and meaningful, real-life connections. In his 4th grade classroom, Mr. Hoyt talks to 10-year-old Clayton about his narrative fiction piece. Clayton doesn't feel the need to do any more work on his *D+* paper. When Mr. Hoyt asks who his audience is, Clayton replies, "Just the class and you." "What if you were reading this to someone else?" asks Mr. Hoyt. "Say, a high school basketball player you like?" Clayton ponders this. "Think about an older guy you respect," Mr. Hoyt suggests. "Write this for him to read." Clayton thinks of just the right person—his older brother—and starts the paper over again.

Garrett sits across the room. His real-life project is to draw to scale a map of the school and playground and then annotate it. From there, he'll develop a proposal for a new playground layout and present it to the school's landscape design architect and the playground revitalization committee.

Meanwhile, Greg is designing a Web site on which students can post their writing projects for others to read. In fact, to create a greater sense of the importance of writing, Mr. Hoyt suggested that Douglass Elementary start providing opportunities for all students to share their writing in front of large audiences—at monthly school assemblies, for example. Competition and the opportunity to earn public respect have helped motivate many undermotivated students—especially the boys.

Seeking Out Male Role Models

Douglass Elementary recognizes the special insight and impact of teachers like Mr. Hoyt, who serve as valuable role models for boys. The school actively encourages men to visit classrooms to share their own writing and speak about their favorite books. This is an area in which the school successfully partnered with parents. Several of the students' fathers write professionally as journalists, screenwriters, authors, or lyricists. Appealing to fathers to be role models for literacy has yielded many special guest speakers and several weekly "regulars" in the classroom.

Getting Serious About Gender Learning

There's nothing revolutionary about the strategies that we have suggested. Teachers have already used many of them in their classrooms, but perhaps they haven't used them in an organized and scientific way. Teacher training at Douglass, which focused on the gender learning work conducted by the Gurian Institute, connected brain science to classroom practice. Teachers learned that good science supported many of their personal observations about how boys and girls learn.

By incorporating new theories from gender science into classroom practice, teachers *can* close gender gaps and significantly improve learning. Douglass Elementary school provided the action research that proves just that. But to bring about these improvements, teachers need to ask themselves some key questions:

- As teachers, do we fully understand the challenges that boys face in education today?
- Do we realize that there is a scientific basis for innovating on behalf of both girls and boys as disaggregated groups?
- Does my school incorporate boy-friendly and girl-friendly learning innovations in full knowledge of how essential they are in accommodating the structural and chemical gender differences built into the human brain?

- Do the educators in my school realize that many behaviors typical of either boys or girls are neurologically based?

Although tackling these questions is challenging, acting on what we have learned can lead to rewards for everyone—for teachers, parents, communities, and especially our students.

The Brain—His and Hers

Researchers have identified more than 100 structural differences between the male and female brain. These differences are both genetic and socialized and include some of the following:

Verbal/spatial differences. Boys' brains generally have more cortical areas dedicated to spatial-mechanical functioning than girls' brains do, whereas girls' brains generally have greater cortical emphasis on verbal-emotive processing (Blum, 1997). Girls use more words on average than boys do, and they tend to think more verbally.

P cells and M cells. The male visual system (optical and neural) relies more heavily on type M ganglion cells, which detect movement. Girls generally have more type P ganglion cells, which are sensitive to color variety and other fine sensory activity (Sax, 2005). As a result, boys tend to rely more on pictures and moving objects when they write, whereas girls tend to excel in using words that reference color and other fine sensory information.

Frontal lobe development. A girl's prefrontal cortex is generally more active than a boy's, and her frontal lobe generally develops at an earlier age (Rich, 2000). These are the decision-making areas of the brain (as well as the reading/writing/word production areas). These factors can lead to girls being less impulsive than boys are. Girls are usually better able to sit still and read, able to read and write earlier, and better at literacy in general. When teachers are unaware of these brain differences, they may misdiagnose normal boys as having learning disabilities and conduct disorders.

Neural rest states. Boys' brains go into what neurologists call a rest state many times each day. You'll notice this when you look at who's drifting off, zoning out, or sleeping through class. You'll also notice that some boys will try to avoid these rest states by engaging in such activities as tapping their pencils or hitting a classmate with a spitball. For some boys—especially those with behavioral issues—these self-stimulating and disruptive behaviors are symptomatic of emotional or psychological problems. But for many boys these disruptions simply reflect male brains trying to stay awake in a classroom that is not well suited for their kind of learning. Single Photon Emission Computed Tomography (SPECT) scans have enabled us to better understand the rest states of male and female brains (Gurian & Stevens, 2005). When the male's brain gets bored, some of his brain functioning shuts down. There is a drift into a brain state that negates learning and performance. When the female brain gets bored, however, more of her brain functioning stays active. Even when she's bored, a girl is more likely to retain the ability to take notes, write words down, and listen carefully.

Cross talk between hemispheres. Structural differences in girls' brains generate more cross talk between hemispheres, leading to better multitasking. Boys' brains, on the other hand, tend to lateralize and compartmentalize brain activity (Rich, 2000). Thus, girls tend to pay attention to more information on more subjects at any given time, whereas boys tend to heap a lot of information into a single-task focus. They concentrate best, in general, when they follow steps A to Z without distraction. Boys also take more time than girls to transition between tasks (Havers, 1995). They tend to become more irritable (and to underperform in learning and classroom behavior) when teachers move them continually between tasks. Multitasking is, of course, crucial to life performance, but boys

are better served by balancing multitasking with project-driven and depth-driven learning.

Natural aggression. For a number of neural and chemical reasons, boys are more naturally aggressive and competitive than girls are (Gurian, 1996). Girls generally gravitate less toward competitive learning and relationships characterized by *aggression nurturance* (the hitting and playful “dissing” that boys continually engage in to support one another). The bonding chemical oxytocin greatly affects this male/female difference. With less oxytocin in the male neural and physiological system, boys tend toward greater impulsivity, more aggression, and less reliance on *bonding malleability* (Taylor, 2002). They have less desire than girls to comply to please others, including teachers.

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