

## Combating Gender Bias and Gender Achievement Gaps

“Children naturally gravitate toward activities that their brains experience as pleasurable—‘pleasure’ meaning in neural terms the richest personal stimulation”  
(King, Gurian, & Stevens, 2004, p. 22).

Sadly, many young people’s brains are not experiencing pleasure at school today, in part because teachers are not educated in the differences between the brain structure of girls and boys. When teachers do not adapt their teaching methods accordingly, significant gender gaps exist in academic performance.

In “Gender-Friendly Schools,” Kelley King, Michael Gurian, and Kathy Stevens (2010) describe several gender-specific difficulties facing girls and boys in the academic setting.

Girls	Boys
Less engagement in science and technology	Lower scores in all classes, particularly reading and writing
Problems in the development of self-esteem and academic confidence	Fewer learning skills in note-taking and listening
Victimization in relationships	Less motivation to learn

Today, boys face far more academic trouble than girls. Past initiatives to close the gap in math and the sciences have improved female performance and achievement. But boys still lag behind in the area of literacy. They also dominate discipline

problems, learning disability referrals, and the high school dropout rate (King, Gurian & Stevens, 2010).

## What Does Research Show?

Many researchers have concluded that the differences in the male and female brains affect the learning styles of boys and girls, and thus explain much of the achievement gap in academics. King, Guiran, and Stevens, have written about their findings in several articles for *Education Leadership* (2004, 2006, 2010). These findings are explained below. (Note: These findings are generalizations; exceptions are found among both boys and girls.)

Scientific Differences	Implications for Education and the Classroom	
	Girls	Boys
<b>Verbal/spatial</b> —Boys have more cortical areas for spatial-mechanical functioning, while girls have more areas dedicated to verbal-emotive processing.	Think more verbally and read and write better.	Learn through moving objects, whether they are balls, models, or human limbs.
<b>Frontal lobe development</b> —In girls, the prefrontal cortex is usually more active and develops earlier than in boys.	Make decisions less impulsively and are able to sit still and focus on reading and writing.	Make decisions impulsively and find it difficult to sit still for long periods of time. This also contributes to trouble in reading, writing, and word production.
<b>Neural rest states</b> —Male brains go into more significant rest states to “recharge” throughout the day, particularly when the brain does not perceive that something important is going on. Although female brains can go into the rest state, more of their brain remains active.	Can maintain focus even when they get bored.	Appear to be dozing off or zoning out when their brains go into a rest state. Sometimes when boys are tapping a pencil, they are simply trying to fight their “rest state” and stay alert.

<b>Corpus callosum</b> —This bundle of connective tissue between hemispheres is larger in girls than in boys.	Are able to “cross talk” between hemispheres, allowing for better multitasking and fewer attention span problems.	Perform better on a single task and take longer to transition between tasks; their brains often compartmentalize learning.
<b>Brain chemicals</b> —Girls have more of the brain chemicals oxytocin and serotonin.	Are less impulsive and gravitate more toward relationships over competition.	Are more aggressive and competitive and less emotionally bonding.

## Closing the Gaps

According to King, Gurian, and Stevens (2010), teachers can use several strategies to “close opportunity gaps between boys and girls” (p. 40), including adding movement, building on the visual, and incorporating student interests and choices.

### Boys and the Gap

For closing the literacy gap with boys, William Brozo (2006) advocates “designing language curriculums that honor their unique imaginations” (p. 71). He suggests that when boys connect a literacy competency with resources that are familiar to them (such as song lyrics), personal interests, or adults who care about them, boys increase engagement.

### Girls and the Gap

Although girls have made great strides in math and science in recent years, “enrollment in AP physics and computer science remain primarily male” (Sanders & Nelson, 2004, p. 75). The Dallas Gender Equity Project, a research program designed to advance girls’ participation in science and technology, found that a big part of the problem was teacher expectations and gender-based patterns in the classroom.

Teachers realized that they were calling on and responding to boys significantly more often. They were also allowing boys to interrupt girls, which “had the effect of

rewarding the boys for being outspoken and rewarding girls for being quiet” (p. 77). As teachers began to focus attention on the girls in these advanced science and technology classes, changes began to happen.

## General Conclusions

Even researchers who disagree about the science of the male and female brain agree that gender gaps exist in academic achievement. Authors such as Lise Eliot (2010) believe that the solutions lie in early intervention to nurture “skills and attitudes that will better prepare both genders for the modern classroom” (p. 34). She strongly advocates some of the following ideas for reducing gender opportunity gaps:

- Avoid stereotyping.
- Appreciate the range of intelligences.
- Strengthen spatial awareness.
- Engage boys with the word.
- Recruit boys into nonathletic extracurricular activities.
- Bring more men into the classroom.
- Treat teacher bias seriously.