

STAY TUNED

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By Susan Kovalik, © 2008 Susan Kovalik

Why gender matters: Education vs. the wiring of boys and girls

In recent years, scientists have discovered that biologically differences between girls and boys are more profound than anybody ever guessed.

Girls and boys see the world differently — not only figuratively, but literally. Regarding vision, a girl's retina is built very differently from the retina of a boy. When a girl and boy look at the same landscape, they are seeing very different images. Girls and boys hear differently as well. These differences have major implications for best practices in education — and also for parenting.

Dr. Leonard Sax has written a very compelling book, “Why Gender Matters.” In his practice as a family physician and psychologist, he has seen a growing epidemic of underachieving boys, starting in kindergarten, who very often are labeled ADHD and put on medication to control their behavior. His dedication to uncovering what is behind this trend is the subject of this column. There is no right or wrong in this discussion, just the science behind the hardwiring of gender.

The past 10 years have proven beyond doubt that the politically correct approach we use to say “boys and girls are the same” is biologically incorrect. The good news is that Dr. Sax recommends alternatives to the traditional classroom approach with suggestions to parents to help dispel the notions that students are functioning up to par.

Over the next few weeks, I will explore the major gender differences. In the meantime, I highly recommend that all schools use the book “Why Gender Matters” as a faculty book study. As a parent, this book will explain and suggest ways in which understanding your boy's behavior can lead to less household disruptions and a deeper understanding of the hardwiring of gender.

Sax's books are mainly about boys because their struggle is so obvious; however, he also describes girl behavior and generally sees it as more conforming at the elementary level because the majority of teachers are female and their strategies in the classroom are a reflection of their gender. As the students progress in the grades, more of their teachers will be male and the options available at secondary school have a broader appeal to boys.

The basics: Hearing and seeing

Studies have been used to determine if hearing differences are present at birth or developed over time.

Working with premature babies, and with parent permission, soft music was played in their cribs immediately following birth and their responses recorded. The babies were matched in age and weight. Babies who had music played in their crib grew faster, had fewer complications and were able to leave the hospital earlier than those who had no music. Girl babies who received

music therapy left the hospital nine and a half days sooner than girl babies who did not hear music.

But boy babies who received music therapy did not leave the hospital any earlier than boys who did not hear the music. Another study involved humming to the premature babies — allowing the girl babies to leave the hospital, on average, 12 days earlier than babies who weren't. It made no difference to premature boy babies.

Hearing is a brain function, and scientists can measure acoustic brain response in newborns and over time. Girl babies hear a 1,500 Hz tone about 80 percent greater than the average baby boy does. This is especially important because this range of sound is critical for understanding what others say. Other studies have demonstrated that the female/male differences increase as children get older.

Implications for the classroom: Not all boys and girls can be easily categorized by this information; situations vary, teacher styles vary. The important point is to consider the implications that would benefit both boys and girls.

It has been demonstrated that noise levels that distract 11-year-old girls are 10 times softer than noise levels that distract boys.

Girls won't learn as well in a loud, noisy classroom. If a male teacher speaks in a normal tone of voice, normal to him, the girl in the front row may feel he is yelling. This is the same when a father is speaking to his daughter. How often have we found ourselves asking our boys or husbands, "Do you hear me, I'm talking to you!" Maybe they don't.

Boys will do better if they are in the front of the classroom where their ability to pay attention increases as they can clearly hear what the teacher is saying. For some boys diagnosed with ADHD, and sitting in the back of the room, they may be distracted because they can't hear clearly enough to do what was asked of them and the following information on vision supports their being in front.

In many classrooms today, especially with youngsters who haven't mastered English yet, teachers are using headsets to enhance the clarity of speech, and this may assist boys as well.

Seating arrangements where boys sit in the front and in rows may assist them in listening with intention — and without distraction from peers.

In the eye of the beholder

Do males and females see differently? Again, this study was done immediately after the children were born and still in the hospital.

Babies were given a choice between looking at a simple dangling mobile or at the face of a woman in the nursery who smiled but didn't say anything. All 102 babies were videotaped and researchers, who didn't know the sex of the babies, analyzed their eye motions. The differences

were significant: “Boys were more than twice as likely to prefer the moving mobile, the girls are born to be interested in the living face.”

The biology of these phenomena has to do with the rods and cones within the retina. Rods are color blind. Cones are sensitive to color. They send their signals to the ganglion cells, some of which are large while others are small. They have different jobs. The large cells are wired to rods and are sensitive to motion. Think of them answering the questions, “where is it now and where is it going?” They are essentially a motion detector.

The small cells answer the questions “what is it and what are the colors and textures?” The male retina has mostly the larger, thicker M (magnocellular) cells, which are essentially a motion detector and can track objects anywhere in the field of vision. The female retina has predominantly the smaller, thinner P (parvocellular) cells that are concentrated in and around the fovea, the center of the field of vision.

If boys’ eye structure is geared to motion, then looking out the window, out the classroom door, watching the classroom action and anything moving will catch their attention — they are wired for that. Looking at a worksheet, in the center field of vision, is better designed for the girls and their retinas.

When giving kindergarten students crayons and a blank sheet of paper where they can draw anything they want, you will see that girls use multiple colors like red, orange, green and brown, drawing detailed pictures, usually of people, plants and animals. In the same kindergarten class, Matthew is frantically scribbling with a black crayon. “What’s that?” asked his teacher. “It’s a rocket about to smash into the Earth,” he said.

Girls draw nouns, boys draw verbs

Kindergarten used to be a time of play, building structures with blocks, riding tricycles and otherwise moving for the better part of their day. Today, seatwork is front and center, where girls see better, and boys are labeled as attention deficit.

What are the long-term implications of not utilizing what we know about the biology of learning? Well consider that today, one of the main topics of concern within our schools is that our boys are becoming more and more disengaged. This has major implications for our schools, homes and communities — and major challenges for their lives. Stay tuned.

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