

WHY GENDER MATTERS:

*What teachers need to know about
the emerging science of sex differences*

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Sex differences in the visual system

The visual system in humans (as in most mammals) has two components: the “Where” system (magnocellular, M) and the “What” system (parvocellular, P). The M system is looking for movement and action. The P system is looking for color and texture. Recent research suggests that whereas girls and women have a rough balance between the two systems, with a slight predominance of resources in the P system, boys and men have more resources devoted to the M system than the P system. In this opening section, we review the research demonstrating this sex difference, and then explore how this difference informs best practice for teaching art, as well as creative writing, to girls and to boys.

Key references for sex differences in the visual system

Janice Hassett, Erin Siebert, & Kim Wallen, “Sex differences in rhesus monkey toy preferences parallel those of children,” *Hormones and Behavior*, volume 54, pp. 359 – 364, 2008.

Gerianne Alexander, “Sex-typed toy preferences: pink, blue, and the brain,” *Archives of Sexual Behavior*, volume 32, pp. 7 – 14, 2003.

Katrin Amunts and colleagues, “Gender-specific asymmetries in human visual cortex,” *Journal of Neuroscience*, volume 27, pp. 1356 – 1364, 2007.

Sex differences in brain development

Recent research demonstrates profound sex differences in the trajectories of brain development. On most parameters, girls’ brains develop faster (on average) than boys’ brains do. This fact has major implications for best practice in the coed classroom.

Key reference: Rhoshel Lenroot and colleagues, “Sexual dimorphism of brain developmental trajectories during childhood and adolescence,” *NeuroImage*, volume 36, pp. 1065 – 1073, 2007, online at no charge at www.boysadrift.com/2007Lenroot.pdf

Sex differences in MOTIVATION v. sex differences in ABILITY

Who vacuums under the sofa?

Who spends >20 hours a week playing *Halo* or *Grand Theft Auto*?

Key reference: Professor Roy Baumeister, “Is there anything good about men?” scroll down to “Can’t versus Won’t”, www.psy.fsu.edu/~baumeistertice/goodaboutmen.htm

Best practice for mathematics

We will consider one example from the middle-school classroom, using first a “boy-friendly” approach, then a “girl-friendly” approach. For boys: start with numbers. For girls: keep it relevant to the real world.

Key references:

Varie Hudson Hawkins, “The effects of math manipulatives on student achievement in mathematics,” Ph.D. dissertation, Capella University, 2007.

Leonard Sax, *Why Gender Matters: what parents and teachers need to know about the emerging science of sex differences*, New York: Doubleday, 2005, **chapter 5**.

Best practice for creative writing

Deconstructing “boy books” v. “girl books.” How best to teach *Jane Eyre* to boys? How about *Romeo & Juliet*?

Key references:

William Killgore and Deborah Yurgelun-Todd, “Sex-related developmental differences in the lateralized activation of the prefrontal cortex and amygdala during perception of facial affect,” *Perceptual and Motor Skills*, volume 99, pp. 371 – 391, 2004.

Leonard Sax, *Boys Adrift: the five factors driving the growing epidemic of unmotivated boys and underachieving young men*, New York: Basic Books, 2007, **chapter 2**.

FOR FURTHER INFORMATION:

Abigail James, *Teaching the Male Brain: how boys think, feel, and learn*, Thousand Oaks, CA: Corwin Press, 2007.

Leonard Sax, *Why Gender Matters: what parents and teachers need to know about the emerging science of sex differences*, New York: Doubleday, 2005 (revised softcover edition, 2007).

Leonard Sax, *Boys Adrift: the five factors driving the growing epidemic of unmotivated boys and underachieving young men*, New York: Basic Books, 2007 (expanded softcover edition, 2009).

Leonard Sax, *Girls on the Edge: the four factors driving the growing epidemic of girls who are anxious, depressed, or just plain obsessed*, New York: Basic Books, 2010 (in press: more information will be posted at www.leonardsax.com).

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