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**HEADLINE:** We can all learn together ;  
Single-sex classes are trendy, but there's scant evidence that they improve academic achievement.

**BYLINE:** Caryl **Rivers** and Rosalind C. **Barnett**, **CARYL RIVERS**, a professor of journalism at Boston University, and **ROSALIND C. BARNETT**, senior scientist at the Women's Studies Research Center at Brandeis University, are coauthors of "Same Difference: How Gender Myths Are Hurting Our Relationships, Our Children and Our Jobs."

### **BODY:**

DO BOYS and girls learn so differently that they need to be in separate classrooms?

That's the question stirring a national debate as the U.S. Department of Education prepares to issue regulations allowing public schools to set up single-sex classes and schools without being vulnerable to discrimination lawsuits under Title IX, which prohibits discrimination in schools.

Are single-sex classrooms the magic bullet that will produce academic achievement in public schools? Or are they simply a trendy idea based on bad science and even worse public policy? There's a real worry that the latter could be the case.

Militant advocates of single-sex schools get a lot of ink in the national media but, unfortunately, little skepticism. Leonard Sax, bestselling author and executive director of the National Assn. for Single Sex Public Education, is spearheading the idea of vast gender differences in the brains and learning styles of boys and girls. Other "experts" confidently agree.

But peer-reviewed studies and many of the nation's top researchers disagree. The American Assn. of University Women warns that not enough scientific evidence exists to show that single-sex classrooms improve student performance.

Our own investigation finds that, too often, the claims made for great gender differences turn out to be highly exaggerated. Here are some examples:

The claim: The sexes see and hear quite differently; girls hear 10 times better than boys. Sax makes this claim, as does Michael Gurian, the author of the popular book, "The Wonder of Boys." Sax says in his book: "Any time you have a teacher of one sex teaching children of the opposite sex, there's a potential for a mismatch, if only in decibel level." He adds, "If a male teacher speaks in a tone of voice that seems normal to him, a girl in the front row may feel that he is yelling at her." He claims, "Boys do best in school when they are yelled at by female teachers." Also, Sax says that boys and girls inherently prefer different colors because of differences in

their retinas.

The facts: There is no evidence of such gender differences from peer-reviewed studies, according to one of the foremost researchers in the area of sensory perception in early childhood. Dr. Rachel Keen of the University of Massachusetts told us: "I cannot point to any definitive article in a peer-reviewed journal that supports major differences in gender for audition and vision during infancy and early childhood."

The claim: Women use both sides of their brain more symmetrically than men. The larger corpus callosum (the band of fibers linking the right and left sides of the brain) in women explains female intuition and the ability to "multitask" and tune in to emotions. An article in the March 2006 Parents magazine makes the same claim.

The facts: The American Journal of Psychiatry reported in 2002 that there were no statistically significant differences in the corpus callosum area between sexes. Recent studies using magnetic resonance imaging and other methods for studying living human brains, and taking into account such things as differences in brain sizes, do not support any such difference in men and women. Also, a meta-analysis of 49 studies published since 1989 reveals no significant sex differences in the size or shape of the corpus callosum.

The claim: Boys are biologically programmed to focus on objects, making them predisposed to math and the understanding of systems, while girls are programmed to focus on people and are best suited for relationships. Leadership and understanding of math and science come naturally to boys, while girls are built for caring for others. This claim has been widely repeated in news stories and in a BBC documentary.

The facts: This idea was based on one study of day-old babies in which the boys looked at mobiles longer and the girls looked at faces longer. The study was demolished by Elizabeth Spelke, an expert on infant cognition and co-director of the Mind, Brain and Behavior Interfaculty Initiative at Harvard. The experiment lacked critical controls against experimenter bias and was not well designed, Spelke said. Infants were propped up in a parent's lap and shown an active person or an inanimate object, side by side. Because newborns can't hold their head up independently, their visual preferences might have been determined by the way their parents held them.

There's a vast amount of literature that contradicts the study, but those studies don't make headlines.

The claim: Boys tend to be deductive in their conceptualizations, starting their reasoning process frequently from a general principle and applying it to individual cases. In contrast, girls tend to favor inductive thinking. They begin with concrete examples in developing a general theory. (Sax and Gurian, among others, make this claim.)

The facts: We put this idea to Diane Halpern of Claremont McKenna College, an acknowledged expert on cognition and the author of a major book on sex differences in cognitive thinking, which reviewed the scientific literature. "I have data on thousands of students, which I have not yet published, that finds no sex differences on these types of thinking skills," she said.

AMONG THOSE who make claims about vast gender differences, almost no reference is made to the peer-reviewed literature. Many generalizations are made with no scholarly references; others are made on the basis of studies of laboratory animals; still others are based on such sources as Reader's Digest, Time and other popular magazines.

Even when peer-reviewed literature is cited, the selection seems highly filtered and biased. In many cases, the authors rely almost exclusively on anecdotes to support their claims. Sometimes, the statements are simply absurd. A Louisiana middle school planned to segregate its classes this fall, stating on its website that "boys need to practice pursuing and killing prey" while "girls need to practice taking care of babies." The school backed down after the American Civil Liberties Union threatened a lawsuit.

We need to ensure that any single-sex classrooms set up in public schools under the proposed Bush administration regulations will not be based on unscientific ideas about boys and girls.

We know that children learn in many different ways, but segregating them by sex will serve most of our children poorly.

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