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Researchers Blast 'Pseudoscience' of Single-Sex Education

By [Sarah D. Sparks](#) on September 22, 2011 2:01 PM | [3 Comments](#) | [4 Recommendations](#)

A team of neuroscience and child development experts sent a shot over the bow of single-sex education this afternoon, arguing in a new *Science* [article](#) that there is "no empirical evidence" that segregating students by sex improves education—but that there is compelling evidence that it can increase gender stereotyping among students and adults.

The National Association for Single-Sex Public Education estimates more than 500 schools nationwide separate boys and girls for at least some classes. The format has gained ground in public schools since 2006, when the U.S. Education Department [reinterpreted Title IX of the U.S. Education Amendments of 1972](#)—the law which bars sex-based discrimination in federally funded education—to allow segregated classes within coeducational schools in some situations. Moreover, dwindling district budgets have convinced districts such as [Wake County](#), N.C., to try out single-sex academies as a way to raise achievement at low cost.

"A new curriculum, like a new drug or factory production method, often yields a short-term gain because people are motivated by novelty and belief in the innovation," the authors noted. "Novelty-based enthusiasm, sample bias, and anecdotes account for much of the glowing characterization of [single-sex] education in the media. Without blind assessment, randomized assignment to treatment or control experiences, and consideration of selection factors, judging the effectiveness of innovations is impossible."

The authors, led by Diane F. Halpern, a psychology professor at Claremont McKenna College in Claremont, Calif., and author of *Sex Differences in Cognitive Abilities*, found that brain-based sex differences often cited by single-sex education advocates—such as differences in memory tasks and brain activation patterns—have been small and generally the studies focused on adults, not children.

"There are some definite brain differences in boys and girls as children, but there are a lot of overlaps, and there's absolutely nothing to suggest that they learn differently," Halpern told me. "The underlying biology of learning is the same.... Really, experience is the chief architect of the brain."

The authors also found studies on the effectiveness of single-sex education programs have not accounted for differences in the students entering them. They found students in single-sex classes did not perform significantly better from those in mixed-gender classes, once the students' prior performance and characteristics were taken into account.

"At a time when we are questioning the quality and effectiveness of our public schools, people are screaming for innovation and looking for the magic bullet, but many of the innovations being put forth are not evidence-based, and single-sex education is not evidence-based," said co-author Richard A. Fabes, director of the Arizona State University's school of social and family dynamics. "All the evidence is that high-quality teaching and high-quality learning environments are equally effective for boys and girls, and what we need to be doing is increasing the quality of instruction ... in coed classes."

Fabes and Arizona State colleagues, professor Carol Lynn Martin and associate professor Laura D. Hannish, study children's interaction in [same-sex](#) and co-ed playgroups. They have found that "separating boys and girls raises the salience of gender, and when you do, that increases sexism."

For example, co-author Lynn S. Liben, a psychology professor at Pennsylvania State University, also found in a 2010 [study](#) that preschool students divided into separate groups by sex for two weeks showed more gender-stereotyped attitudes and played less with children of the opposite sex.

The co-authors include a who's who of experts in the fields of sex-based differences:

- Lise S. Eliot, an associate professor in neuroscience at the Rosalind Franklin University of Medicine and Science in North Chicago, Ill., and author of the 2009 book, *Pink Brain, Blue Brain: How Small Differences Grow Into Troublesome Gaps, and What We Can Do About It*;
- Rebecca S. Bigler, director of the [Gender and Racial Attitudes Lab](#) at the University of Texas;
- Janet Hyde, professor of psychology and women's studies at the University of Wisconsin-Madison, who studies sex differences in adolescent depression.

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