



SINGLE-SEX EDUCATION: *The Connecticut Context*

TECHNICAL REPORT



STATE EDUCATION RESOURCE CENTER

Publications Unit

Jeremy Bond
Communication & Publications Coordinator
Jodylynn Talevi
Media/Technology Associate

Published by:

State Education Resource Center
Marianne Kirner, Ph.D.
Executive Director



©2013

Research & Development

Kim Mearman, *Assistant Director*
Joseph H. Johnson, Ph.D.,
Research & Development Coordinator
SERC Library
Carol Sullivan, *Assistant Director*
Donna-Lee Rulli, *Library Systems Administrator*

MISSION

The State Education Resource Center (SERC) provides resources, professional development, and a centralized library to educators, families, and community members in collaboration with the Connecticut State Department of Education and other public and private partners.

VISION

EQUITY. Excellence. Education.

SERC believes that all students have the right to access opportunities and experiences that reflect and respect their differences and abilities. We are concerned that in Connecticut, educational outcomes for students of color, students who are English language learners, and students with disabilities continue to lag behind outcomes for other students. To help eliminate these achievement gaps, SERC addresses institutionalized racism and other issues of social justice in schools and districts and both models and facilitates equity in education.

Equity. **EXCELLENCE.** Education.

Our professional development and information dissemination are built around best practices that educators apply to their work, highlighting the 21st-century learning skills students need to achieve their life and career goals. To maintain and enhance our own knowledge base, SERC conducts ongoing staff professional development on topics at the forefront of education.

Equity. Excellence. **EDUCATION.**

We want ALL of Connecticut's children and youth to achieve positive personal and professional life outcomes through their educational experience. Since that experience extends far beyond the classroom, we help facilitate strong relationships among schools, agencies, community organizations and businesses, and families—and promote family engagement as a critical component of a child's education.

SINGLE-SEX EDUCATION: *The Connecticut Context* TECHNICAL REPORT

This technical report provides the brief history, legality, and research surrounding the gender gap and single-sex education. Single-sex education refers to educational settings in which male and female students attend classes or schools exclusively with members of their own sex. This educational model has been debated on philosophical and legal grounds. Research on single-sex education is divided, with no definitive argument to compel the justification of their existence or to dismiss their utility as an alternative educational option. Finally, this report discusses the advantages and disadvantages of single-sex education and provides specific gender gap data for the state of Connecticut.

SERC, 25 Industrial Park Road, Middletown, CT 06457-1516 - (860) 632-1485 - www.ctserc.org

EQUITY. EXCELLENCE. EDUCATION.

It is the policy of the State Education Resource Center (SERC) that no person shall be discriminated against or excluded from participation in any SERC programs or activities on the basis of race, color, language, religion, age, marital or civil union status, national origin, ancestry, sex/gender, intellectual disability, physical disability, political beliefs, sexual orientation, or gender identity or expression. Inquiries regarding SERC's nondiscrimination policies should be directed to Alfred P. Bruno, SERC General Counsel, at bruno@ctserc.org.

SINGLE-SEX EDUCATION:

The Connecticut Context

TECHNICAL REPORT

INTRODUCTION

The achievement gap in America's schools persists across race, class, and gender. As a means to close the gap, and provide an equitable and quality education for all students, educators, policy makers, parents, and stakeholders continue to conceive and install comprehensive school reform models at the federal, state, and local levels. Twenty-first century reform strategies have been unique and plentiful across the country. Decreasing class sizes, grade level reconfigurations, thematic private charter schools, and thematic public magnet schools are just some of the points on the broad spectrum of tactics taken in the school reform era.

All of these strategies are employed with the hope of having a significant impact on this nation's achievement gaps. While no particular reform methodology has surfaced as a panacea for our educational deficiencies, a broad-based menu of options is now available for parents and students to choose an educational program that will best suit them.

Another point on the spectrum that has a long history in this country, and that has begun to gain more momentum and empirical scrutiny, is single-sex education. Rooted in the first all-female schools in the 1700s, single-sex education refers to elementary, secondary, and postsecondary educational settings in which male and female students attend classes or schools exclusively with members of their own sex (U.S. Department of Education, 2005).

Many countries continue to have a sizeable number of single-sex schools, and the practice has gained ground in the United States in response to the underachievement of boys (Smyth, 2010). Several states and local districts are experimenting with this model by creating single-sex classes and/or schools.



More educators are embracing the idea that the educational and social challenges confronting males, in particular Black and Latino males, can be solved, or at least ameliorated, through single-sex education (Noguera, 2012). Once relegated to the realm of private and parochial, single-sex education is rapidly gaining popularity in public schools. The United States had only two single-sex public schools in the 1990s, according to the New York Times (Ward, 2012). In the 2011-2012 school year, more than 500 public schools in the United States offered single-sex educational opportunities (National Association for Single Sex Public Education, 2011).

For advocates of this model, the premise of single-sex education is two-pronged. They argue that (1) each sex has unique biological and developmental needs and (2) students grouped by sex will perform better without the distractions and social pressures of the other sex present.

Many researchers add value to this logic, while others refute it. Riordan (1994) asserted that single-sex schools are beneficial for girls and minority boys due to the reversal of the “gender stratification norm”: minority boys are no longer expected to fail. However, “Harker (2000) found that separation by sex did not guarantee higher test scores for minority and low-income students in single-sex and coeducational schools” (Hubbard & Datnow, 2005). The international body of literature and research capturing the debate on single-sex education has its fair share of proponents and detractors. The interest in single-sex public schools as a solution for low-income and minority students is supported by research showing that students’ educational experiences vary by gender within and across ethnic and racial groups. Conversely, the rejection of single-sex schools as a viable solution and school model is captured in research that discourages generalizations about “inherent male or female skills [that] can have a self-fulfilling effect, reinforcing stereotypes and expectations that prescribe the way girls and boys are taught” (Matthiessen, n.d.).

The purpose of this paper is to briefly discuss the legal justification for single-sex education and provide an overview of research that supports and opposes the single-sex education model. Furthermore, this report will include and juxtapose data specific to the state of Connecticut’s gender gap.

As of June 2010, there were no single-sex magnet schools in the state, though a few public schools have adopted single-sex education at some point in their history. These include the Beecher School in New Haven (now an arts and sciences magnet school), which has had classes separated by sex; and the Young Men’s Leadership Academy in Hartford for boys grades 6-12 (Blair, 2010).

LEGAL MATTERS

Single-sex classes and schools are segregated environments. This suggests they might directly conflict with *Brown v. Board of Education*, the 19th Amendment, the Civil Rights Act of 1964, and other previous legal and legislative efforts to desegregate our society and create equality between races, ethnicities, and genders. Thus, the first question instinctively generated by the notion of single-sex education is — is it legal?

In particular, opponents of single-sex schools assert that their existence is a blatant Title IX violation. Title IX of the Educational Amendments of 1972 requires gender equity for boys and girls in every educational program that receives federal funding (Title IX.info, n.d.). However, in 2006, responding to language in the No Child Left Behind Act that encouraged states to experiment with single-sex education, the U.S. Department of Education changed its Title IX regulations to permit single-sex education in much broader circumstances than had previously been allowed:



“The new regulations do not require single-sex education, but make it easier for educators to offer, and parents and students to choose, single-sex educational opportunities while upholding nondiscrimination requirements. Enrollment in a single-sex class must be completely voluntary and a substantially equal coeducational class in the same subject must be provided. The previous regulations permitted school districts to provide single-sex public schools to students of one sex if it provided a comparable single-sex public school to students of the other sex. The new regulations create more flexibility because they permit a school district to provide a single-sex school to students of one sex if it offers a substantially equal single-sex or coeducational school to students of the other sex” (U.S. Department of Education, Press Release, 2006).

The changes to Title IX have “renewed interest in establishing single-sex schools within the public school system as a way to address the needs of students who have not been successful in traditional coeducational schools” (Hubbard & Datnow, 2005).

Even with alterations to the law, many continue to passionately challenge single-sex education in the courtroom. The American Civil Liberties Union (ACLU) has been investigating single-sex public education programs, sending cease-and-desist letters to school districts, and in some cases filing federal lawsuits, with varying results (Ward, 2012). In May 2008, the ACLU filed suit in federal court, arguing that Breckinridge County, Ky.’s, practice of offering single-sex classrooms in its public middle school was illegal and discriminatory (Stanberry, n.d.). In Louisiana, the ACLU represented parents who claimed that Vermilion Parish Middle School unconstitutionally separated pupils into single-sex classes. The ACLU said the program was based on flawed data, relied heavily on gender stereotypes, and had no positive effect on academic performance (Ward, 2012). In West Virginia, a judge issued a temporary injunction against conducting involuntary single-sex class assignments at a public school (Isensee & Vasquez, 2012). Single-sex education opponents argue that “gender-based separation constitutes a return to structured inequality, an especially troublesome possibility when single-sex programs target students of particular racial and ethnic groups” (Hubbard & Datnow, 2005).

These court battles demonstrate the stark division of the single-sex education debate and why the impact and value of these programs are easily questioned. The debate is further polarized and fueled by fickle research outcomes. This is highlighted by Salomone’s (2003) classic study of single-sex schooling, which places the issue in a historical, legal, and philosophical context and points out that the research on single-sex versus coeducation does not yield simple and straightforward conclusions. Specific findings of the research will be explored later in this report, but first let’s take a cursory look at the data and research that serve as the impetus for this debate.

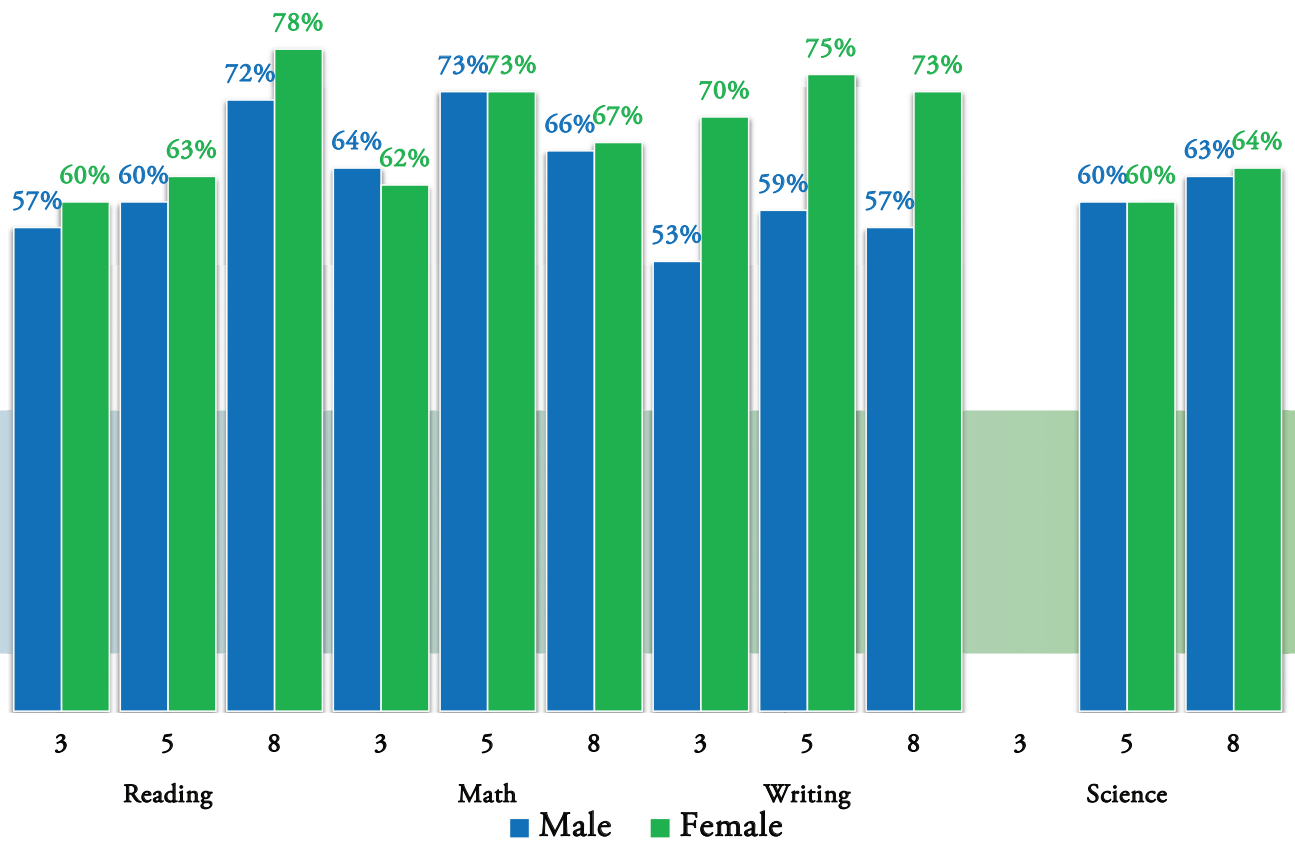
THE CONNECTICUT GENDER GAP

Recent research about gender differences in education has raised alarms about the cognitive, academic, and social/emotional development and health of boys, referred to as the “boy crisis” in much of the literature (Fergus, Sciarba, Martin, & Noguera, 2009). This crisis is characterized by lower scores by males on the National Assessment for Educational Progress (NAEP), higher dropout and suspension rates for boys, a higher incidence of classification of learning disabilities, and lower test-taking rates and scores on standardized assessments (Anfara & Mertens, 2008).

According to the U.S. Department of Education’s Early Childhood Longitudinal Study, when children enter kindergarten, boys and girls perform similarly on reading and math assessments; however, around third grade, boys on average outperform girls in math and science, while girls outperform boys in reading (Chaussee, n.d.). State test scores across the country show girls performing roughly as well as boys do in math while boys lag behind girls in reading and writing (Austin Independent School District, 2011).

Connecticut reflects this national trend as well. Graph 1 displays recent student achievement rates for boys and girls on the Connecticut Mastery Test (CMT) in the third, fifth and eighth grades as reported by the Connecticut State Department of Education (n.d.). Girls hold their own with boys in math and science on the CMTs and clearly outperform boys in reading and writing.

Graph 1. 2010-2011 Connecticut Mastery Test (CMT) Results for 3rd, 5th, & 8th Grades by Gender
(Percentage of Students at or Above Goal)
 Retrieved from <http://sdeportal.ct.gov>



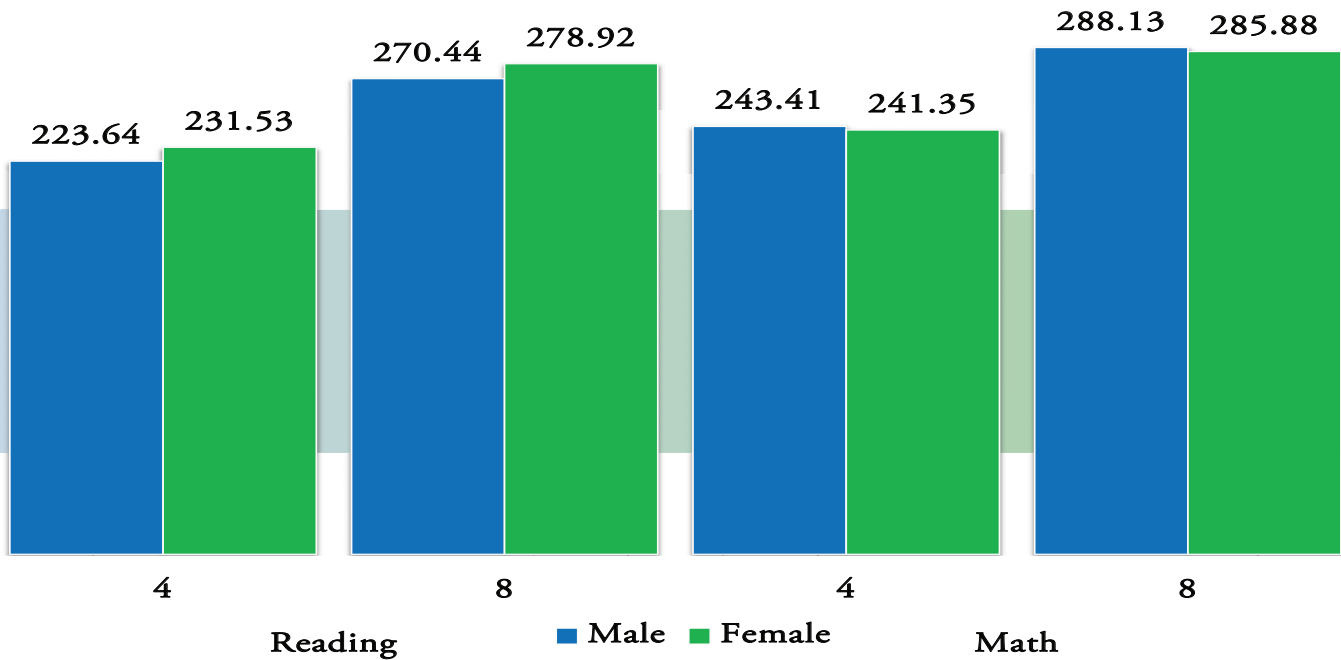
While Connecticut NAEP scores traditionally outperform the national averages, the gender gap is evident here as well: female students display the dominant reading performance. Graph 2 contains the average NAEP scale score for Connecticut students by gender.



Graph 2. 2011 CT National Assessment for Educational Progress (NAEP)

Scale Scores for 4th and 8th Grades, by Gender

Retrieved from <http://nces.ed.gov/nationsreportcard/states>



Obviously, boys face issues during their educational experience that are not shared by members of the opposite sex. A plethora of national research verifies that boys are having a difficult time in many areas. Boys are more likely to repeat a grade (Freeman, 2004). As Kleinfeld (2009) notes, boys “are less likely to do homework and more likely to come to school unprepared, which aggravates teachers and reduces school grades.” Boys are “far more likely to be expelled even from preschool programs — boys were expelled at a rate of 4.5 times more than girls” (Kleinfeld, 2009).

For every **100** girls...

217¹ boys are diagnosed with a special education disability

276¹ boys are diagnosed with a learning disability

324¹ boys are diagnosed with emotional disturbance

250² boys are suspended

335² boys are expelled

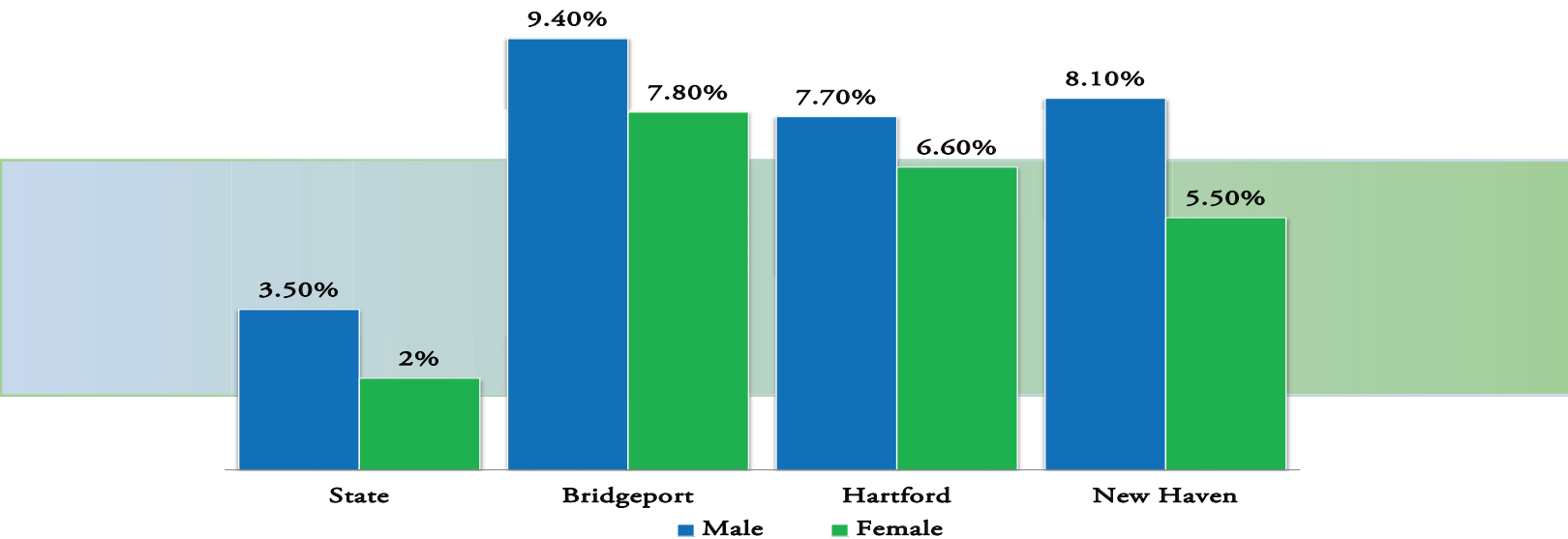
1. Retrieved from <http://www.iteachilearn.com/uh/meisgeier/statsgov20gender.htm>

2. Retrieved from http://nces.ed.gov/programs/digest/d04/tables/dt04_144.asp

In addition, analysis of the Connecticut Education Data and Reports (CEDAR) (CSDE, n.d.) database reveals that two-thirds of the students identified with disabilities are males; male students were involved in disciplinary incidents twice as often as female students; and from 2001-2002 to 2007-2008, the male dropout rates remained consistently higher than the female dropout rates. Graphs 3 and 4 display the most recently available graduation and dropout rates for the state of Connecticut and three of its major urban districts, illustrating the gender divide in both areas.

Graph 3. 2009-2010 Connecticut State and Urban District Dropout Rates

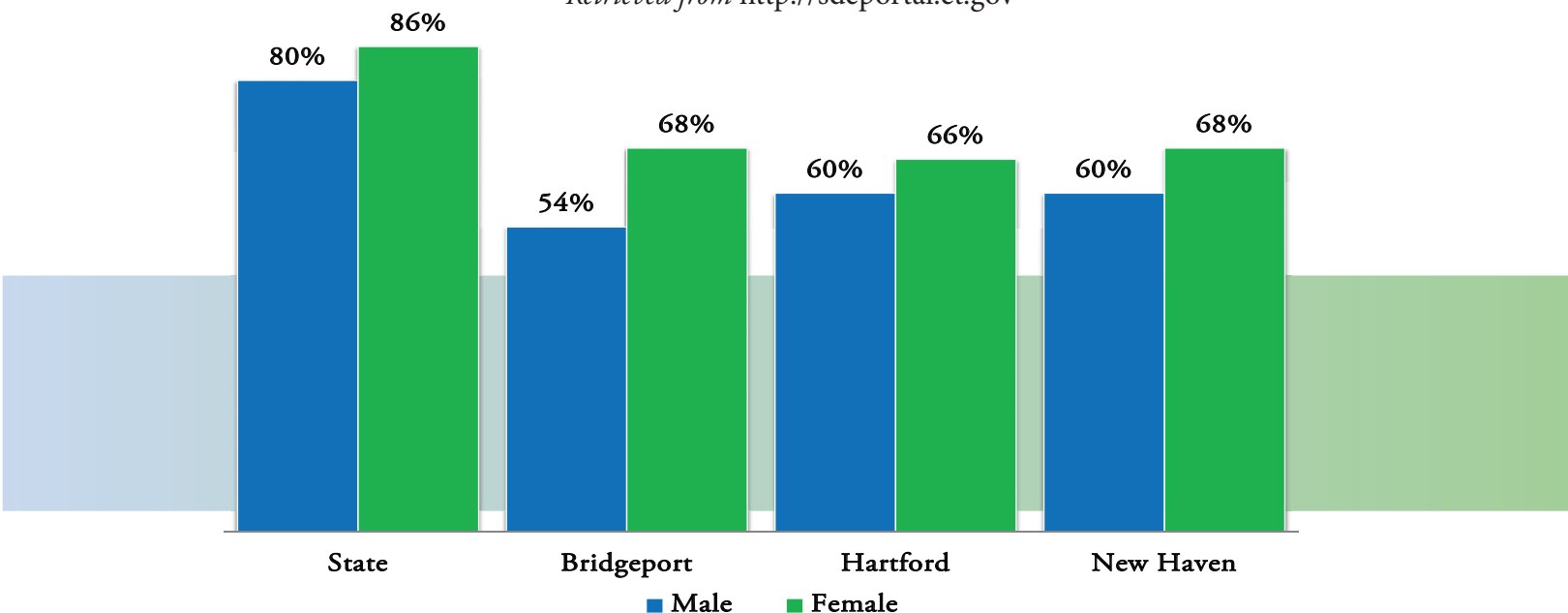
Retrieved from <http://sdeportal.ct.gov>



According to the Alliance for Excellent Education (2011), dropouts of the Connecticut high school class of 2011 will lose nearly \$1.4 billion in lifetime wage earnings because they lack a high school diploma. Each class of high school dropouts costs the state approximately \$155.4 million in additional lifetime health care costs (Alliance for Excellent Education, 2009). Increasing the male high school graduation rate by just 5 percent would add more than \$63 million to the state's economy each year by providing \$31.6 million in crime-related savings and almost \$31.7 million in additional earnings (Alliance for Excellent Education, 2006).

Graph 4. 2011 Connecticut State and Urban District Graduation Rates

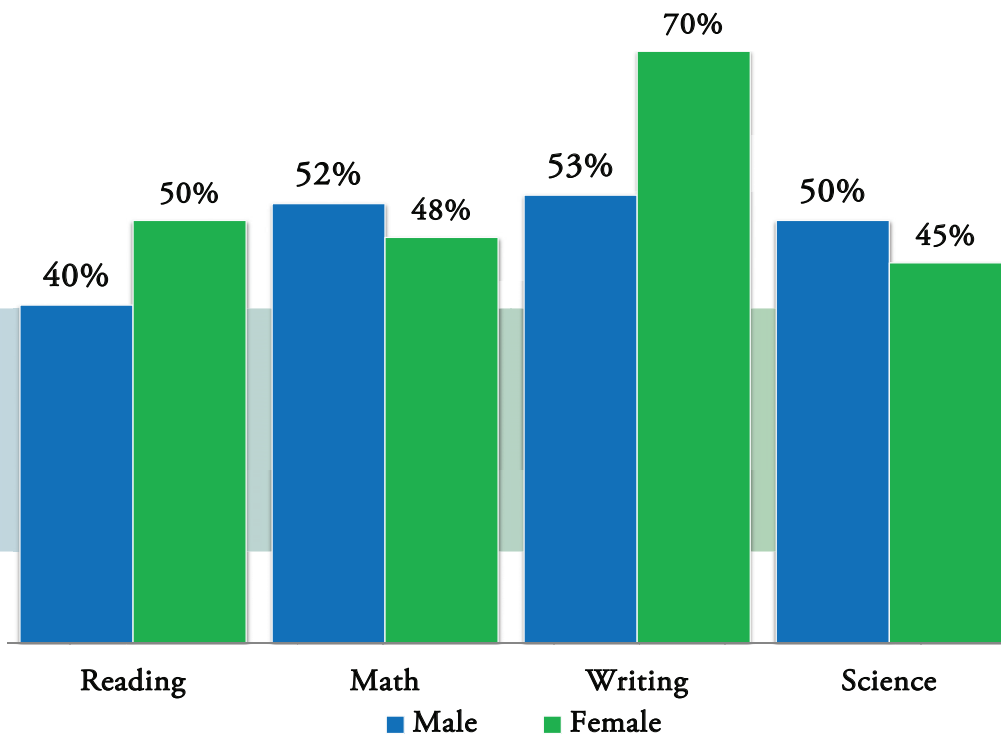
Retrieved from <http://sdeportal.ct.gov>



Keeping male students in school to complete four years of high school is one issue, while motivating them to aspire to and succeed at a high academic level is another. Black and Latino males in particular are less likely to be represented in gifted and talented programs, Advanced Placement and honors courses, and international baccalaureate programs (Noguera, 2012, citing his earlier research).

In Connecticut, across all grades, girls achieve at a level close to boys in math and science, while they are firmly ahead of them in reading and writing. Graph 5 displays the achievement scores of Connecticut 10th graders' performance on the Connecticut Academic Performance Test (CAPT), disaggregated by gender.

Graph 5. 2010-2011 Connecticut Academic Performance Test (CAPT) Results for 10th Grade, by Gender
(Percentage of Students at or Above Goal)
 Retrieved from <http://sdeportal.ct.gov>



“Boys — particularly boys of color and boys from low-income families — are less likely than girls to receive top grades, graduate from high school, meet college readiness benchmarks, or go on to college” (Austin Independent School District, 2011). Further, women outnumber men among college graduates (Kaminer, 1998).

For every **100** women...

- 77¹** men are enrolled in college
- 73²** men earn a bachelor’s degree
- 66³** men earn a master’s degree

1. Retrieved from <http://www.census.gov/population/www/socdemo/school/cps2004.html>
 2. Retrieved from http://nces.ed.gov/programs/digest/d04/tables/dt04_262.asp
 3. Retrieved from http://nces.ed.gov/programs/digest/d04/tables/dt04_265.asp



One driving force in the single-sex education movement, and an explanation for these performance disparities, is the theory of natural differences in how males and females learn that suggest the genders are “wired” differently (Stanberry, n.d.). Researchers and authors such as Leonard Sax, and neuropsychiatrist Louann Brizendine, promote the gender achievement gap as a significant neurobiological difference between the sexes. Sax asserts that emotion and language are processed in the same area of the brain for girls but not for boys; girls have more sensitive hearing than boys; and boys and girls respond to stress differently (Cable & Spradlin, 2008). These are some examples of fundamental differences between the sexes that have a tremendous impact on their educational experience, according to Sax. Thus, gender-specific schooling, coupled with specific teaching strategies, meet the unique developmental needs of each gender and their respective learning style.

Opponents of Sax’s position assert that his generalizations aren’t substantiated by scientific evidence (Matthiessen, n.d.; Noguera, 2012). Neuroscientists such as Lise Eliot, “who combed years of research on brain differences for her recent book, *Pink Brain, Blue Brain*, found scant evidence of innate qualities or hard-wiring in the brains of girls or boys” (Matthiessen, n.d.). In fact, “[m]any agree that the learning differences of boys and girls are slight and contend that it does not make sense to try to further the gender divide by focusing on differences between the sexes” (Cable & Spradlin, 2008). The American Council on Education suggests the achievement gap is far smaller between male and female students than it is among students in different racial, ethnic, and socioeconomic groups (Stanberry, n.d.).

RESEARCH

Various studies have considered the effects of single-sex education on academic performance, self-esteem, and student attitudes toward academic subject matter, as well as attitudes toward single or coeducational schooling itself (Anfara & Mertens, 2008). Results have been inconclusive. Of existing studies, “some have shown improved outcomes for students, others found no advantages, and still others report mixed results” (Austin Independent School District, 2011). The U.S. Department of Education’s 2005 meta-analysis of comparative single-sex and co-ed schools yielded 40 usable studies in which 41% favored single-sex schools, 45% found negative effects, and 6% had mixed findings (Anfara & Martens, 2008).

Many studies were excluded for several reasons: the research failed to operationalize the intervention properly; researchers failed to apply statistical controls during the analyses; work was actually qualitative in nature rather than quantitative; the study was conducted in a non-Westernized country and therefore not comparable; and researchers did not draw comparisons between single-sex and coeducational schools (U.S. Department of Education, 2005).

This section will identify some of the salient research regarding single-sex education. Some of the studies that support the effectiveness of single-sex education include:

- Mulholland, Hansen, and Kaminski (2004) compared achievement gains of boys and girls in Australian single-sex classes versus coeducational classes. They found higher gains in English grades for both girls and boys attending the single-sex classes than their co-ed counterparts; however, no data collected on the two groups yielded statistically significant differences between them.
- Among other changes, Booker T. Washington High School in Memphis created separate freshmen academies for girls and boys. The graduation rate subsequently soared from 55% in 2007 to 81.6% in 2010. The school won the 2011 Race to the Top High School Commencement Challenge (Hutchison & Mikulski, 2012).
- Harjes (2010) measured how attitudes about gender and race were different in children from single-sex classrooms versus traditional classrooms. The students in single-sex environments reported more adaptive psychosocial outcomes, including lower reporting of any life difficulty and the impact of life’s difficulties on learning. Students in single-sex classes reported more adaptive attitudes about race than students overall. They scored higher in measurements of ethnic identity and belonging, and of liking individuals with an ethnic background other than their own.
- A three-year study found a wide span in performance on the Florida Comprehensive Assessment Test, depending on whether the students were in single-sex classrooms. Girls in traditional classes achieved proficiency on the test 59 percent of the time, while girls in single-sex classrooms achieved proficiency at a rate of 75 percent. The boys had a far more significant difference: just 37 percent from traditional classes were proficient, compared to 86 percent from all-boys classrooms. Similarly, 37% of boys in coeducational classes scored proficient, compared with 86% of boys in the all-boys classes (Hutchison & Mikulski, 2012).

Though actual empirical evidence supporting single-sex education is sparse, the research provides some anecdotal evidence as well. More often than not, research on single-sex schools is heavily qualitative. Many studies employ testimony from administrators, teachers, students, and parents to support the single-sex movement. From the vantage point of those working within and experiencing the single-sex context, the positive effects are apparent. Likewise, interviews conducted by Hubbard and Datnow (2005) of students and staff in California schools offering single-sex classes revealed that both groups felt that a major contribution to student success was the freedom from distraction from the opposite sex. In 2008, a U.S. Department of Education study found that “both principals and teachers believed that the main benefits of single-sex schooling are decreasing distractions to learning and improving student

achievement.” (Hutchison & Mikulski, 2012). As part of a longitudinal study of Australian secondary schools, which had been single-sex schools and then converted to co-ed schools over a two-year period, interviews with teachers and students indicate that girls appeared to do better socially in a single-sex class (Jackson & Smith, 2000). Teachers who worked in single-sex classes and schools reported fewer discipline problems to Gurian and Henley (2001), and administrators and teachers in Florida single-sex schools reported dramatic improvement in student performance (Isensee & Vasquez, 2012).

These findings give promise to the single-sex education movement. However, a wealth of research also makes diametrically opposite conclusions. Examples include:

- Hattie’s (2009) meta-analysis of single-sex education included research studies by Kruse (1996) and Parker and Rennie (1997) yielding an overall conclusion that “any effects were more dependent on the teacher and teacher expectations than whether the class was mixed- or single-sex.”
- A Science magazine (Halpern et al., 2011) study concluded there was no proven connection between single-sex education and higher student achievement. The researchers stated that claims to the contrary were “deeply misguided” (Ward, 2012).
- Newport Middle School in Kentucky and Eagle Rock Junior High School in Idaho abandoned single-sex classrooms after one year when there was no significant improvement in test scores or grades, and there were escalated discipline issues for the boys (Cable & Spradlin, 2008).
- Gilson (2002) found no significant differences in math and quantitative-ability scores between single-sex and coeducational school girls.

Given the obstacles to conducting true randomized experiments, few or no studies have provided definitive evidence for or against single-sex education. As a result, even the suggestive benefits that some students experience with academics and behavior in single-sex settings are equivocal (Mael et al., 2004).

CONCLUSION

There is a legitimate gap between the academic performance of boys and girls that fuels the rationale and drives the attempts to educate them in separate classes and/or schools. Though the gender gap is a local, national, and international phenomenon, the research surrounding this model is far from compelling for either side of the debate. Some research exalts single-sex education, other research denigrates it, and the remaining research straddles the proverbial fence on the issue. As Anbara and Martens (2008) note, “there are numerous studies, but few high-quality ones that use comparison groups, control for confounding variables, or use national databases.” Given the proliferation of single-sex schools and the wide gulf between practice and evidence-based theory, there is a pressing need for an applied research agenda that can shed some light on whether single-sex schools are indeed the best way to improve the educational attainment and social mobility for either gender (Noguera, 2012). Mael, et al. agree and suggest that more randomized experiments, longitudinal studies, and retrospective studies of the workplace and relationships should be attempted in future single-sex education research.

These conflicting results remind researchers that many other factors, such as students’ socioeconomic class, school/district funding, teacher efficacy, and student-teacher interactions contribute to student success as well. Research shows that schools with high-achieving male students have strong, positive relationships between teachers and students and provide supplemental supports (i.e., mentors and tutors) to intervene effectively when students experience difficulties (Noguera, 2012). Also, the importance of high



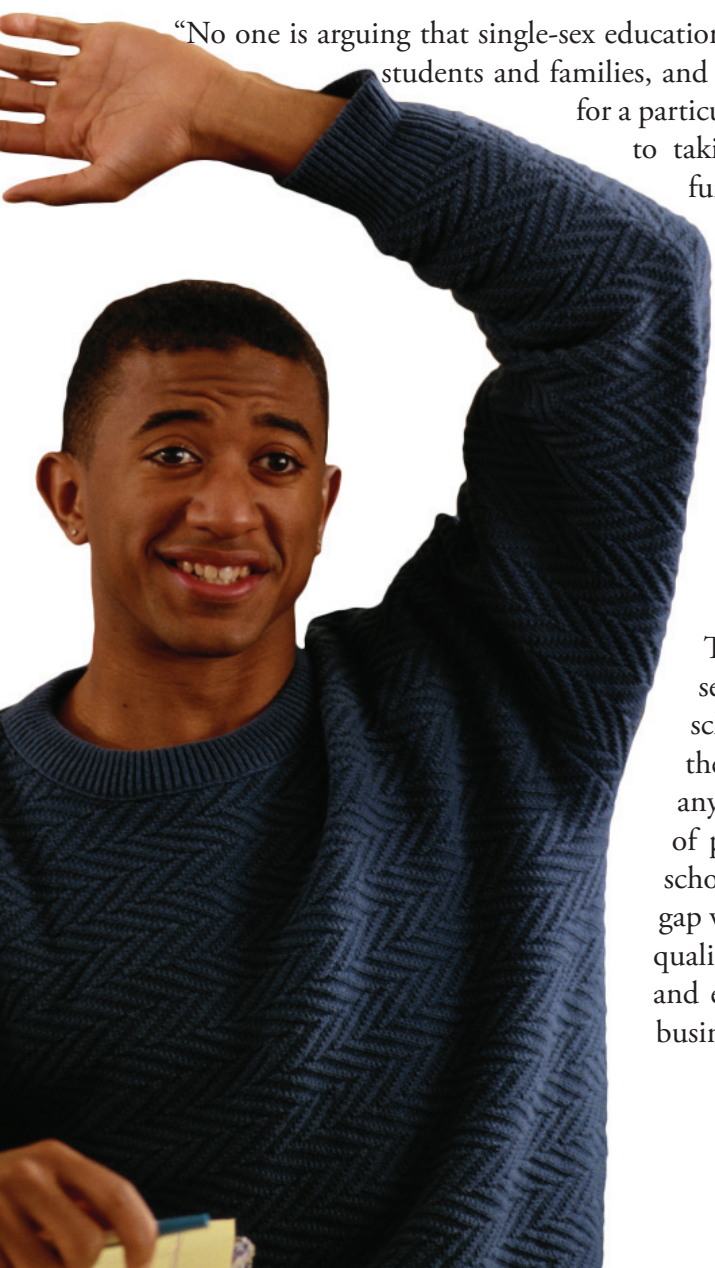
teacher expectations as an indicator for student success has been documented for decades. However, researchers such as Fordham (1996) and Diamond (2004) have noted that teachers' expectations are typically lower for low-income and minority, particularly male, students than for middle and upper-income white students. As Hattie (2009) stated in his synthesis of over 800 meta-analyses relating to achievement, "what works best for students is what's similar to what works for teachers ... attention to setting challenging learning intentions, being clear about what success means, and an attention to learning strategies for developing conceptual understanding about what teachers and students know and understand." Ultimately, teacher effects have the most impact on students.

The facts of this report are not presented as an endorsement or indictment on the existence or creation of single-sex classes and schools. Much of the school reform movement, especially in Connecticut, has revolved around taking drastic measures to turn around failing schools and increase student achievement. Connecticut has combined schools, opened more charter schools, and created more magnet schools with specialized curriculums to attract parents and students to their doors. Many of these schools are open to a wide geographic area to give parents more choices for their child's education. It is in the spirit of school choice that proponents of single-sex classes and schools advocate for their existence. Salomone (2003) argues that the principles of freedom of choice and equality of educational opportunity support single-sex alternatives. In 2008, Knowledge Networks conducted a nationwide survey that indicated more than one-third of Americans feel parents should have the option of sending their child to a single-sex school [25% of respondents oppose the idea] (Stanberry, n.d.). U.S. Senators Hutchison (R) of Texas and Mikulski (D) of Maryland agreed in a 2012 op-ed in the Wall Street Journal:

"No one is arguing that single-sex education is the best option for every student. But it is preferable for some students and families, and no one has the right to deny them an option that may work best for a particular child. Attempts to eliminate single-sex education are equivalent to taking away students' and parents' choice about one of the most fundamentally important aspects of childhood and future indicators of success — a child's education" (Hutchison & Mikulski, 2012).

Both supporters and detractors alike of single-sex education say it can be an important option for some students. "Some kids do better in co-ed. Some kids do better in single gender," Sax said (Isensee & Vasquez, 2012). While a report from the American Association of University Women Educational Foundation (1998) declared that there is "no evidence that single-sex education ... is better than coeducation," it also acknowledged that single-sex schools produce positive results for some students in some instances.

There are many reasons to support or challenge the creation of single-sex classes and/or schools in a district. Moving forward, single-sex schools and classes may have the potential to be effective and have their niche in 21st-century school reform. What is evident is that any effort to open and maintain a single-sex program requires plenty of prior planning. Regardless of single-sex designation, creating any school that will successfully close the racial, class, or gender achievement gap will require research-based instructional strategies, recruiting highly qualified school leaders, employing and training passionate teachers, and extending itself into the surrounding community to partner with businesses and families.





THE PROS

- Makes boys less competitive and more cooperative and collaborative
- Makes girls feel less pressure as they mature and develop
- Increases staff sensitivity and awareness of gender differences
- Improves peer interaction
- Provides positive same-gender role models
- Provides more opportunities to pursue academic and extracurricular endeavors without racial and gender stereotypes
- Is less distracting than co-ed environments

THE CONS

- Promotes gender stereotyping
- Undermines gender equality
- Doesn't prepare students for work or family life
- Makes exclusion acceptable
- Doesn't value diversity
- Deprives access to mainstream programs
- Doesn't socialize students to be less sexist
- Expensive to run two parallel programs

REFERENCES

- Alliance for Excellent Education. (2006). *Saving futures, saving dollars: The impact of education on crime reduction and earnings*. Retrieved from <http://www.all4ed.org/files/SavingFutures.pdf>
- Alliance for Excellent Education. (2009). *Potential economic impacts of improved education on Connecticut*. Retrieved from http://www.all4ed.org/files/Connecticut_econ.pdf
- Alliance for Excellent Education. (2011). *The high cost of high school dropouts: What the nation pays for inadequate high schools*. Retrieved from <http://www.all4ed.org/files/HighCost.pdf>
- American Association of University Women Educational Foundation. (1998). *Separated by sex: A critical look at single-sex education for girls*. Washington, DC: American Association of University Women Educational Foundation. Retrieved from <http://www.aauw.org/resource/separated-by-sex-a-critical-look-at-single-sex-education-for-girls>
- Anfara, V. A., & Mertens, S. B. (2008). What Research Says: Do Single-Sex Classes and Schools Make a Difference? *Middle School Journal*, 40(2), 52-59.
- Austin Independent School District, Presentation to Board of Trustees (2011). *Single gender education: A review of current issues and practices*. Retrieved from <http://www.austinisd.org/sites/default/files/announcements/D-White%20Paper%20Final%209.12.11.pdf>
- Blair, R. (2010, April 10). The advantages of single-sex education. *Hartford Courant*. Retrieved from http://articles.courant.com/2010-08-13/news/hc-itowns-single-sex-0815-20100813_1_single-gender-school-public-schools-magnet-schools
- Bronson, L. (n.d.). *Single-gender education: Does it work?*. Retrieved from <http://www.dominicanu.com/masters-in-education-resources/single-gender-education-does-it-work>
- Cable, K.E. & Spradlin, T.E. (2008). *Single-sex education in the 21st century*. Education Policy Brief. Center for Evaluation & Education Policy, 6(9).
- Chaussee, E. (n.d.). *Student achievement as a means of attracting students to a single-gender elementary school*. (EDAD 9550). Retrieved from <http://coe.unomaha.edu/moec/briefs/EDAD9550chaussee.pdf>
- Coleman, S. (2006). *Single-sex education programs*. Office of Legislative Research Report. 2006-R-0714. Retrieved from <http://www.cga.ct.gov/2006/rpt/2006-R-0714.htm>

- Connecticut State Department of Education, Connecticut Education Data and Research (CEDAR). (n.d.). Retrieved from <http://sdeportal.ct.gov>
- Diamond, J., Randolph, A., & Spillane, J. (2004). Teachers' expectations and sense of responsibility for student learning: The importance of race, class and organizational habitus. *Anthropology and Education Quarterly*, 35(1), 75-98.
- Fergus, E., Sciurba, K., Martin, M. & Noguera, P. (2009, October 29). Single-sex schools for black and Latino boys: An intervention in search of theory. *In motion magazine*, Retrieved from http://www.inmotionmagazine.com/er/fsmn_09.html
- Fordham, S. (1996). *Blacked out: Dilemmas of race, identity, and success at Capital High*. Chicago: University of Chicago Press.
- Freeman, C. (2004). *Trends in educational equity of girls & women: 2004*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES).
- Garrett, R. (n.d.). *Gender gap: Why boys can't keep up*. Retrieved from <http://www.education.com/magazine/article/the-gender-gap>
- Gilson, J. (2002). Single-gender or coeducation for middle-school girls: Does it make a difference in math? In A. Datnow and L. Hubbard (eds.), *Gender in policy and practice: Perspectives on single-sex and coeducational schooling* (pp. 227–242). New York: Routledge and Falmer.
- Gurian, M. & Henley, P. (2001). *Boys and girls learn differently: A guide for teachers and parents*. San Francisco: Josey-Bass.
- Halpern, D. F., Eliot, L., Bigler, R. S., Fabes, R. A., Hanish, L. D., Hyde, J., Liben, L. S. & Martin, C. L. (2011, September 23). The pseudoscience of single-sex schooling. *Science Magazine*, 333(6050), 1706-1707.
- Harjes, R. (2010). Attitudes about gender and race. *Advances in Gender and Education*, (2), 2-12. Retrieved from <http://www.mccrad.org/2010-Harjes.pdf>
- Harker, R. (2000). Achievement, gender and the single-sex/coed debate. *British Journal of the Sociology of Education*, 61(1).
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.
- Hubbard, L. & Datnow, A. (2005). Do single-sex schools improve the education of low-income and minority students? An investigation of California's public single-gender academies. *Anthropology and Education Quarterly*, 36(2), 115-131.

- Hutchison, K.B. & Mikulski, B. (2012, October 17). A right to choose single-sex education. *The Wall Street Journal*. Retrieved from <http://www.singlesexschools.org/hutchison2012.html>
- Isensee, L. & Vasquez, M. (2012, October 17). Girls and boys: Separate but educated. *The Miami Herald*. Retrieved from <http://www.miamiherald.com/2012/10/17/v-fullstory/3054740/girls-and-boys-separate-but-educated.html>
- Jackson, C., & Smith, I. D. (2000). Poles apart? An exploration of single-sex and mixed-sex educational environments in Australia and England. *Educational Studies*, 26(4), 409-422.
- James, M.C. (2010). Never quit: The complexities of promoting social and academic excellence at a single-gender school for urban American males. *Journal of African American Males in Education*. 1(3), 167-195.
- Kaminer, W. (1998). The trouble with single-sex schools. *Atlantic Magazine*. Retrieved from http://www.theatlantic.com/magazine/archive/1998/04/the-trouble-with-single-sex-schools/304661/?single_page=true
- Kleinfeld, J. (2009). The state of American boyhood. *Gender Issues*. 26, 113-120.
- Kruse, A.M. (1996). Approaches to teaching girls and boys: Current debates, practices, and perspectives in Denmark. *Women's Studies International Forum*, 19(4), 429-445
- Mael, F., Smith, M., Alonso, A., Rogers, K., & Gibson, D. U.S. Department of Education. (2004). *Theoretical arguments for and against single-sex schools: A critical analysis of the explanations*. Retrieved from http://www.air.org/files/SSX_Explanatory_11-23-04.pdf
- Matthiessen, C. (n.d.). *Girls' and boys' brains: How different are they?* Retrieved from <http://www.greatschools.org/students/academic-skills/1121-gender-differences-learning.gs>
- Mulholland, J., Hansen, P. & Kaminski, K. (2004). Do single-gender classrooms in coeducational settings address boys' underachievement? An Australian study. *Educational Studies*, (30)1.
- National Association for Single Sex Public Education. (2011). *Single-sex schools / schools with single-sex classrooms / what's the difference?*. Retrieved from <http://www.singlesexschools.org/schools-schools.htm>
- Noguera, P.A. (2012). Saving Black and Latino boys. *Phi Delta Kappan*, 93(5), 8-12.

- Parker, L.H., & Rennie, L.J. (1997). Teachers' perceptions of the implementation of single-sex classes in coeducational schools. *Australian Journal of Education*, 41(2), 119-133.
- Riordan, C. (1994). Single-gender schools: Outcomes for African and Hispanic Americans. *Research in Sociology of Education and Socialization*, 10, 177-206.
- Salomone, R. (2003). *Same, different, equal: Rethinking single-sex schooling*. New Haven, CT: Yale University Press.
- Smyth, E. (2010). Single-sex education: What does research tell us? *Revue Francaise De Pedagogie*, (171), 47-55.
- Stanberry, K. (n.d.). *Single sex education: The pros and cons*. Retrieved from <http://www.greatschools.org/find-a-school/defining-your-ideal/1139-single-sex-education-the-pros-and-cons.gs?page=all>
- Standen, A. (2007). *Gender matters: Dividing boys and girls*. Retrieved from www.edutopia.org/gender-matters-dividing-boys-girls
- Title IX.info (n.d.). *History of Title IX*. Retrieved from <http://www.titleix.info/History/History-Overview.aspx>
- U.S. Department of Education. (2006). *34 Code of Federal Regulations, Part 106, 1034*.
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Connecticut Assessments. Retrieved from <http://nces.ed.gov/nationsreportcard/states>
- U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service. (2005). *Single-Sex Versus Secondary Schooling: A Systematic Review*, Washington, D.C. Retrieved from <http://www2.ed.gov/rschstat/eval/other/single-sex/single-sex.pdf>
- U.S. Department of Education, Press Release. (2006). *Secretary Spellings announces more choices in single sex education; Amended regulations give communities more flexibility to offer single sex schools and classes*. Retrieved from <http://www2.ed.gov/news/pressreleases/2006/10/10242006.html>
- Ward, S. F. (2012). Boys & girls together? Courts Deal with a Push to End Co-Ed Classes. *American Bar Association Journal*, 98 (12). Retrieved from http://www.abajournal.com/magazine/article/boys_girls_together_courts_deal_with_a_push_to_end_co-ed_classes