

Single-Sex Schooling: Law, Policy and Research *.

Rosemary C. Salomone **: A heated debate is raging concerning the merits of single-sex schools and classes. From New York to California, school systems are defying the Canon of coeducation in the name of gender equality for girls and equal opportunity for minority students, both male and female...

From the Young Women's Leadership School in East Harlem to dual academies in San Francisco, single sex education has become as hotly contested as bilingual education in legal and academic circles.

Fueling the fires of the debate is a 1998 report from the American Association of University Women (AAUW) that dismisses as nonconclusive the research findings supporting single-sex education and calls for more focused attention to eradicating gender inequities throughout the coeducational system. Lurking in the background are civil rights groups, emboldened by the Supreme Court's 1996 decision declaring unconstitutional the all-male admissions policies of the Virginia Military Institute (VMI). For the American Civil Liberties Union (ACLU) and the National Organization for Women (NOW), single-sex public schools are not only unconstitutional but they also run counter to the letter and spirit of Title IX, the 1972 federal statute that prohibits sex discrimination in federally funded educational programs. Hovering over the controversy is the Office for Civil Rights (OCR) of the U.S. Department of Education, which is empowered by law to withdraw federal funds from school districts found in violation of the Title IX statute or its implementing regulations.

Single-sex education evokes almost visceral responses from educators, policymakers, and scholars on both sides of the controversy. On more careful reflection, supporters call for establishing experimental programs to remedy a wide range of educational and social problems. Among those problems, they emphasize low self-esteem and comparatively low interest levels in math and science among adolescent girls; peer sexual harassment in the schools; gender inequities in the classroom; high rates of teen-age pregnancy among minority girls; school violence; and high dropout, drug abuse, and crime rates among young black men in urban areas. They suggest that within coeducation lies a "hidden curriculum" of male dominance, differential teacher expectations, and attitudes that serve to prepare students for gender-specific roles in society. They perceive within coeducational schools an adolescent subculture that, they maintain, tends to impede academic development. They argue that single-sex public schooling provides educational options to parents and children who lack the economic means to purchase them in the private school market.

Opponents, meanwhile, maintain that such programs smack of benevolent sexism; deny young women and men the interpersonal skills to relate to each other in the real world; and fail to promote tolerance, multiculturalism, or sex equity. They fear the return to a pre-Title IX world where gender-segregated public schools and classes shortchanged girls in educational resources and tracked them into a finite set of low-paying careers. Opponents view single-sex education, at best, as a short-term political fix that ignores pervasive gender inequities in the school and, at worst, as a dangerous mechanism for reinforcing persistent gender and racial stereotypes. As a matter of public policy they see the programmatic diversity inherent in the concept as a wedge in the door of school choice on a grander scale and a potential threat to public schooling as it now exists.

For the American public, the media have reduced the debate to sound bites and attention-grabbing headlines that dramatically oversimplify the matter. The issues surrounding single-sex versus coeducation are complex and multilayered, raising questions within questions. The discussion that follows attempts to cut through that complexity, drawing a significant but often overlooked distinction between first- and second-generation single-sex public schools and programs, between pre–Title IX separate education as primarily a tool of oppression with few exceptions and recent initiatives for girls and minorities as tools of emancipation. Intent and ultimate goals are at the heart of that distinction.

The purpose here is to ants through the following questions, systematically examining the debate from the inside net, from the core of legality to the outer margins of public policy and the various empirical and causal layers in between.

—Do single-sex public schools and classes comply with constitutional norms and federal statutory law?

—Are there measurable effects that flow from single-sex schools and classes?

—Does empirical evidence exist to support she preposition that single- sex an compared with coeducation benefits girls or boys, whether white, black, or Hispanic, or, in the alternative, is evidence available that it harms members of any of these groups?

—What are the desired outcomes of the approach—higher achievement scores in math and science, more positive attitudes toward these subjects, increased self-esteem, more positive identity, or behavioral and attitudinal changes that ultimately lead to self-fulfillment and career success?

—Is either increased parent and student satisfaction with the single-sex learning environment or educational diversity in itself a sufficiently persuasive justification to support single-sex schools and classes as a matter of law or policy?

—If comparable benefits between single-sex and coeducational approaches are found, are they sufficiently strong to justify implementation of single-sex schooling for certain populations or as an option for all students?

—If the reported effects are mixed or only mildly positive, do these inconclusive findings alone justify dismissing single-sex schooling outright without countervailing evidence supporting coeducation on any of these indices? Does an educational justification exists for coeducation’s normative dominance?

These key questions must be addressed to move the discussion toward informed policy choices for school officials, parents and students.

Defining tire Policy Debate

Judging from the controversy now swirling around single-sex schools, one would think the concept is a recent phenomenon. In fact, single-sex education has a long history and tradition to the United States (and elsewhere). All-boy and all-girl private academics dominated the education of the upper classes from the early days of the republic until recent decades. Admittedly, single-sex schooling was not a matter of choice. Separated institutions for female students grew out of the exclusionary admission policies of all-male institutions. However, coeducation has been the method preferred in the public sector since the beginning of mass schooling more than a century ago. But reeducation has not always translated into equal opportunities for

women. The uncertain and somewhat deceptive connection between these two concepts has pushed some gender equity advocates to reconsider single-sex education.

Coeducation Becomes the Norm

Coeducation typified public schooling neon before the common school movement of the mid-1800s. Initially it was considered a pragmatic, cost-effective means of educating children in sparsely populated rural areas in the late eighteenth and early nineteenth centuries. In contrast, large urban centers such as Boston, Chicago, New York, and Philadelphia resisted coeducation for some time. School officials feared losing to the private academies the children of the upper classes whose parents vehemently opposed the intermingling of their children, and their daughters in particular, with lower-class boys (1). Despite this slow start, however, coeducation gradually became the norm in densely populated cities. By the turn of the century, 98 percent of the public high schools across the country were coeducational with only 12 cities out of 628 reporting that they operated any single-sex high schools(2).

The number of single-sex schools increased slightly in the early decades of the twentieth century in the flame of vocational education. Progressive reformers, believing that the children of recent immigrants were not academically inclined or fit, established vocational classes on an elective basis within the coeducational high school. These programs were highly sex-segregated. School officials tracked males into classes such as drafting, woodworking, auto mechanics, preparing them for higher paying jobs than those opened to young women who were offered separate classes in home economics, dressmaking, and s skills. Some of these classes were separated by school policy, while others were a matter of choice constrained by socialization. Large urban school districts, in particular, adopted sex-segregated stratification at the high school level. Vocational or technical schools, along with schools for pregnant girls, formed two notable exceptions to coeducation. A third exception included a small number of select college preparatory schools such as the Boston Latin School for Boys, Philadelphia's Central High School for Boys, and Hunter College High School for Girls in New York. One by one, each of these schools became coeducational through the 1970s and 1980s in the wake of Title IX.

Public coeducation has remained the rule throughout the past century with few qualified exceptions, most notably in Baltimore and Philadelphia. Despite this orientation, until recent decades public coeducation was not intended to equalize opportunities between males and females; it was to prepare women for marriage and motherhood with perhaps a brief detour into a limited set of gender occupations, such as teaching, nursing, or secretarial services, before their real life's work would begin.

Generally speaking, the question of single-sex versus coeducation within the common school model was of marginal concern to early school reformers who were more interested in assimilating masses of immigrants into American society. The distinction between the two approaches did not become critical until the rise of the women's movement of the 1960s and 1970s. Women's advocates of that period focused on the institutional sexism and hidden curriculum of coeducational schools and the flagrant gender inequities perpetuated by the vocational curriculum. At the same time, they fought to tear down the admissions barriers to women in the limited number of academically selective public secondary schools and more numerous elite private

schools and colleges. During this era, most proponents of women's equality shared a set of firm beliefs: that single sex schooling reinforced stereotypical notions of women's abilities and interests, that women could and should develop the same aspirations and career goals as men, that they should be mainstreamed into the social and economic life of the country, and that coeducation was the most effective approach for achieving these goals.

Civil rights groups, primarily the American Civil Liberties Union and the NOW Legal Defense and Education Fund, initially tried to build on the separate but equal doctrine rejected in *Brown v. Board of Education* to challenge all-male exclusionary policies in academically elite state-supported institutions, including the University of Virginia and Central High School in Philadelphia(3). At the same time, women's rights advocates also pressed for statutory reform in the adoption of Title IX and its implementing regulations. The statute was enacted in 1972 to promote equal educational opportunity for women. Regulations adopted in 1975 by what was then the Department of Health, Education and Welfare (HEW) covered admissions, counseling, employment, and curriculum.(4) While neither the law nor the regulations expressly prohibited all single-sex public schools, school systems around the country, under pressure from HEW's Office for Civil Rights, gradually transformed most of the existing single-sex schools — both vocational and academically selective—into coeducational institutions for fear of violating the law. Regardless of congressional intent, Title IX became the major impetus for promoting equality for women through coeducation.(5)

By the early 1980s, single-sex education in the United States seemed to be dying a slow but certain death. By 1981, among six thousand school districts included in a nationwide study conducted by the Office for Civil Rights, there were only 86 all-male and 106 all-female schools. The majority of the boys schools were vocational-technical, while many of the girls schools were for pregnant students.(6) Through the 1970s, many single-sex private schools and particularly boys schools, although exempt from the admissions provisions of Title IX, had also converted to coeducation in unprecedented numbers largely in response to waning interest in single-sex education and a declining school-age population. Between the mid-1960s and mid-1970s, the independent school balance shifted from 62 percent single-sex to 66 percent coeducational, with more gradual change in the following decades.(7)

Some of this activity was in the form of mergers between formerly all-male and all-female institutions. The chief exceptions to the pattern of coeducation were a small number of independent schools and colleges and secondary schools run by Catholic religious orders, all resolutely clinging to their mission of educating women. At about the same time, a confluence of intellectual and social forces drew national attention to the education of girls in coeducational schools. This set the stage for a 1990s reexamination of single-sex schooling and a resurgence of interest among young women to opt out of coeducation.

Girls, Adolescence, and Schooling

In the early 1980s, Carol Gilligan's book *In a Different Voice* challenged classic psychological theory attaching a positive value to certain characteristics that are culturally defined as "masculine" such as separation, detachment, subordination of relationships, and abstract thinking while negating other characteristics that are

culturally defined as “feminine” such as attachment, caring, and interdependence. Gilligan made clear that the distinctions she found between the two modes of thought were not based on inherent differences between the sexes but on factors of social status and power combined with reproductive biology to shape the different life experiences of men and women.(8)

In her subsequent research on students at the Emma Willard School, Gilligan underscored adolescence as a critical period in the lives of women, calling it a “watershed in female development, a time when girls are in danger of drowning or disappearing”(9) She found that, between the ages of twelve and fifteen (the age, she noted, when dropping out of school becomes more common in the inner city), girls’ knowledge seems to become buried.(10) She saw young women caught in a struggle to balance their own values of caring and relationships against the larger culture’s values of autonomy and self-sufficiency. She observed how girls are more likely to manifest psychological problems such as depression and eating disorders during this period, how they respond more negatively to stressful challenges in early adolescence, and how they reveal more disturbances in self-image.(11)

Gilligan’s purpose was to chart the course of female psychological and moral development and to refute earlier assumptions based in a misplaced focus on male development as the norm. She did not intend for her research to promote the educational separation of the sexes, a clarification she made a decade and a half later in a friend-of-the-court brief submitted to the Supreme Court in the Virginia Military Institute case.(12) Nevertheless, her work supported the general proposition that men and women are not necessarily the same, whether innately or through social conditioning, and that their distinct ways of perceiving reality should be afforded equal value. Her findings and conclusions on that difference would lend theoretical credence to the empirical findings of educational researchers examining gender equity over the next decade- Her research on the unique issues faced by young adolescent women struggling to develop a strong sense of self would give theoretical force to the debate over the education of girls, particularly in the middle school years.

During the 1980s, a number of scholars both in the United States and abroad generated findings on single-sex education primarily in private independent and Catholic schools. The discussion of this body of research was confined largely to the academic community. The observational studies conducted by Myra Sadker and David Sadker over the course of two decades, culminating in their 1994 book *Failing at Fairness*, ultimately sparked the debate over the education of girls in coeducational schools.(13) Through observations of more than one hundred classrooms, they found that boys dominated discussions and were more likely to be praised, corrected, helped, and criticized by teachers— all reactions that foster student achievement according to the Sadkers.

Following on the heels of the Sadkers’ research were a series of reports published by the American Association of University Women. These reports gave new currency to the debate over single-sex education. The first, released in 1991, presented the results of a survey of three thousand girls and boys ages nine to fifteen of varied ethnic and racial backgrounds. The study documented a disproportionate loss of self-esteem and interest in math and science among girls as they approach adolescence.(14) Only 29 percent of girls and 46 percent of boys retained the high self-esteem in high school that they had exhibited in elementary school. The loss was most pronounced among Hispanic girls. The percentage of girls indicating that they like math” dropped from 51

to 61 during those years as compared with a drop from 84 percent to 72 percent among boys. Interest in science showed a similar decline from 75 percent to 63 percent among girls and 82 percent to 75 percent among boys of the same age range. The following year, a second report prepared for the AAUW by the Center for Research on Women at Wellesley College drew on data from a compilation of 1,331 studies to confirm the earlier findings of the Sadkers: that women were underrepresented in the school curriculum, that teacher behavior and tests tended to favor boys, and that girls lagged seriously behind boys in math and science.⁽¹⁵⁾ A third AAUW report, published in 1993 found that 85 percent of girls and 76 percent of boys had reported being sexually harassed in school.⁽¹⁶⁾

At the same time, the Center for Research on Women at Wellesley College conducted a sexual harassment survey through a questionnaire published in the September 1992 issue of *Seventeen* magazine. Only forty-two hundred of the magazine's 1.9 million subscribers returned the questionnaire, a 0.2 percent response. This obviously was a self-selected group of respondents. According to the report, which was published with the cosponsorship of the NOW Legal Defense and Education Fund, 39 percent of the girls responding reported being sexually harassed at school on a daily basis during the previous year with most harassers being male.⁽¹⁷⁾ A 1996 AAUW report drew on qualitative research including participant observation, interviews, and document analysis to examine the social and institutional challenges facing young adolescent girls as they form identities and negotiate the middle school environment.⁽¹⁸⁾

The first three AAIJW reports, in particular, touched off a heated discussion in the popular press and academic journals. The merits of the sexual harassment report were debated on national television. The second report alone generated more than fourteen hundred stories by journalists and newscasters. The *San Francisco Chronicle* reported the "Dreadful Waste of Female Talent" and the *New York Times* warned that "Bias against Girls Is Pounding Rife in Schools, With Lasting Damage".⁽¹⁹⁾ Critics challenged all three reports—the first for its methodology, which relied on self-reporting; the second for its alleged overstatement of the "gender gap" and its reliance on a small body of research; and the third for its overbroad definition of sexual harassment.⁽²⁰⁾ Nevertheless, the AAUW had grabbed the attention of the educational establishment and unintentionally planted the seeds for a renewed interest in single-sex schools for girls as a safe haven from the reported harms of coeducation. The unintended use of these reports would come to haunt the AAUW in years to come as public discussion surrounding the association's 1998 report would cast doubts to the advisability of single-sex education.

Gilligan, the Sadkers, the AAUW, and the Wellesley Center for Research on Women together had painted a painful portrait of growing up female in America. The combination of Gilligan's theoretical perspective on adolescent development, the Sadkers' classroom observation and the compelling data presented in the reports despite arguable flaws in the underlying methodology touched off a national discussion among educators, psychologists, and feminists concerning gender equity, gender differences, and the lack of self-esteem and self-confidence among adolescent girls.⁽²¹⁾ The impact of this discussion soon began to reach the admissions offices of all-girls schools. According to the National Coalition of Girls Schools (NCGS), applications to member schools have increased by 21 percent since the coalition's founding in 1991.⁽²²⁾ The National Association of Independent Schools reports similar enrollment increases in member schools. For the first time in a number of years, enrollment in girls schools increased significantly by almost two thousand from 33,826 to 35,662 students between the 1995 and 1996 school years, down from 40,178 in 1986—87 enrollment in independent coeducational schools increased more steadily

throughout that same period, from 274,955 in 1986-87 to 376,568 in 1996-97.(23) The data also generated a flurry of activity in school districts around the country with single-sex math and science classes suddenly gaining favor. But single-sex education took a surprising turn in the 1990s as race and gender became conflated in an effort to reverse the downward educational and social spiral of minority students, particularly black and Hispanic males.

Minority Boys and the Afrocentric Academy Controversy

While researchers were battling over the validity of the gender gap findings, inner-city school districts were experiencing a simultaneous movement that would propel the single-sex debate into another dimension. Urban school districts were exploring the concept of gender separation as a mechanism for broadening the educational opportunities of minority students, particularly black and Hispanic males, caught in the maelstrom of poverty. Proponents of all-male Afrocentric academies pointed to the failure of the civil rights agenda to improve the lives of poor inner-city residents. Neither compensatory programs nor court-ordered racial integration had proven successful in raising the achievement of low-income minority students. Low-income black men in particular were becoming reduced to a dismal statistic. As black men became increasingly swallowed up in substance abuse and crime, black boys suffered from the absence of positive male role models in their lives. The rationale underlying Afrocentric school programs borrowed many of the gender-based principles advanced by proponents of single-sex schooling for girls, including same-sex (and race) role models and mentors, greater leadership opportunities, and higher academic standards and expectations. Added to these principles was an African-centered curriculum to enhance self-esteem and develop a positive identity.

Proposals for all-male immersion programs raised concerns within and outside the black community as to the competing needs of black females for whom teen-age pregnancy, single motherhood, and academic failure have led to a lifetime of poverty. Critics of the all-male immersion concept argued that, while black men have been described as an "endangered species," black and Hispanic low-income women bear the triple burden of being poor, female, and minority. The data on both males and females, taken together, presented a vivid and troubling picture of a social and economic underclass wracked by institutional failure and family disintegration.

According to the Children's Defense Fund, dropout rates among six teen to twenty-four year olds from low-income families in 1994 reached 39.5 percent for Hispanics and 23 percent for blacks as compared with 14.3 percent for whites. Only 43 percent of blacks and 35 percent of Hispanics were enrolled in a college preparatory course sequence in 1994 as compared with 50 percent of whites.(24) While birth rates for teen-agers in all racial and ethnic groups have declined in recent years with the sharpest drop among blacks, the numbers are still troubling. In 1996 more than 10 percent of Hispanic and 9 percent of black females between the ages of fifteen and nineteen gave birth.(25) Nearly one in four black American men in their twenties is in jail, on probation, or on parole; only one in five in the same age group attends college. Among black males aged eighteen to thirty-four, homicide is the leading cause of death.(26)

Local politicians, school board members, and educators began to draw on these striking figures to press for gender and racial separation as a desperate measure to

address desperate circumstances, all the while pushing the legal envelope on racial segregation and gender discrimination. From all-boys Afrocentric academies for at-risk students in Detroit and Milwaukee, to an all-boys kindergarten class in Dade County, to an all-girls academically rigorous program in New York City, these small, experimental programs for black and Hispanic inner-city students became a lightning rod for a growing backlash against single-sex education. The mounting legal opposition would split the civil rights community and force school districts across the country to either rethink their plans or risk the political and financial costs of litigation.

The Many Faces of the Law

The most basic question concerning single-sex education is whether the concept, in its various forms, violates the law. An affirmative answer renders the educational policy arguments moot. But ironically, according to constitutional and administrative standards, the legal question ultimately turns on the strength of the policy arguments. Over the past decade, as school districts have experimented with single-sex schools or classes, civil rights groups have used the federal Constitution and statutory law in an attempt to stop the movement dead in its tracks. Leading the charge are the American Civil Liberties Union and the National Organization for Women, single-sex programs violate the equal protection clause of the Fourteenth Amendment and Title IX of the Education Amendments of 1972. The equal protection clause states, "No state shall ... deny to any person within its jurisdiction the equal protection of the laws"; Title IX of the Education Amendments of 1972 and its implementing regulations prohibit educational programs receiving federal funds from treating students unequally on the basis of sex.(27) In the past decade, court orders and agency rulings have set school districts around the country on a roller-coaster ride of legality with no clear end in sight.

The Philadelphia Case: Who Wins? Who Loses?

Two decades ago, civil rights groups used similar constitutional arguments to open the doors of prestigious all-male public schools to women. The Philadelphia case is particularly instructive from both a legal and policy perspective. Central High School for Boys was a selective magnet school founded in 1837 by an act of the Pennsylvania legislature. The city based the exclusion of women on a separate school for girls, which remains one of the few all-girls public schools in the country today, in fact if not in theory. The case went through two rounds of litigation, first in federal and then in state court.

In 1977, in *Vorchheimer v. School District of Philadelphia*, an equally divided Supreme Court (thereby having no precedential value beyond the Third Circuit) affirmed without opinion an appeals court ruling upholding the constitutionality of Central High School.(28) The appeals court had concluded that Central High School for Boys and the Philadelphia High School for Girls (Girls' High) were of equal quality.

The court expressed concern that parents and students should be allowed to exercise their freedom of choice in the absence of convincing evidence as to the psychological or academic harms of single-sex education. The court placed the burden on the challengers to prove the harms of the approach, a perspective that stands in stark contrast to the current debate, which places the burden on supporters to prove its

benefits. While the decision focused on the particular facts, the court implicitly recognized the value of educational choice per se.

After *Vorchheimer*, the separate but equal doctrine rejected two decades earlier as to race seemed constitutionally permissible as to gender. Several years later, however, female students again sought and were denied admission to Central High School and brought suit this time in state court, claiming violations not only of the federal Constitution but also of the Pennsylvania state constitution. The court found that *Vorchheimer* did not bar the federal claim even though the facts and the law were identical. In the court's view, the plaintiffs' counsel in *Vorchheimer* had failed to present relevant evidence comparing the quality of the education provided at the two schools.

In *Newburg v. Board of Education*, the state court compared the two schools on a number of indices of educational quality, including the size of the campus as compared with the size of the student body, the number of books in the school library, the number of faculty members holding Ph.D. degrees, the course offerings in mathematics, the extracurricular programs offered, student scores on achievement tests, and average acceptance rates to colleges.⁽²⁹⁾ Having found the girls high school deficient, the court concluded that the two schools were not "equal" in the legal sense and therefore violated both the Fourteenth Amendment and the Equal Rights Amendment to the Pennsylvania state constitution. The court ordered Central High School to admit girls.

The school district did not appeal the ruling, which was strongly opposed by Central High. But it was met with less than enthusiasm by the students and staff of Girls' High, who feared the impact of the decision on their school's already dwindling enrollments. Several students and graduates of the school made an unsuccessful attempt to intervene, but the court held it was too late; they had not been parties to the trial court proceeding.⁽³⁰⁾ The students, alumnae, and staff of Girls' High remained unimpressed with Central's stately library (thought to be the largest public school library in the United States), the school's \$1 million private endowment and scholarship fund, or its illustrious alumni roster.

Despite the well-intentioned efforts of the ACLU, NOW, and the Women's Law Project in Philadelphia, the principal of Girls' High expressed a sentiment in the course of the litigation that would continue to resonate throughout the single-sex schooling debate. "What the three girls [who brought the litigation] are doing is not helping women," she stated. "They're just destroying another opportunity for [them]".⁽³¹⁾ In the end, although Girls' High was forced to technically admit boys in the aftermath of the litigation, none has enrolled in the fifteen years since the court's decision. Meanwhile, Central High proved far more attractive to women and moved quickly to a gender-balanced population. The effective result is that, while girls within the Philadelphia public school system now can choose between an academically prestigious education that is either single-sex or coeducational, that option is closed to boys.

Central High School was a prototype of a first-generation single-sex school, an academically prestigious institution that operated for the sole benefit of males. It was established at a time when the prevailing belief among educators was that women were not fit for this level of intellectual endeavor nor was it appropriate for them to pursue the careers for which the school prepared its graduates. A decade beyond the dismantling of single-sex education at Central and similar all-male public secondary

schools, civil liberties groups would use the same arguments to challenge single-sex programs even when the objective was to include previously excluded groups such as women and minority males.

Detroit: A Civil Rights Dilemma

From the early to mid- 1990s, opponents of single-sex education brandished the sword of the 1991 district court opinion in *Garrett v. Board of Education*, enjoining the Detroit School District from opening three all-male Afrocentric academies for at-risk students.(32) The academies would emphasize male responsibility; provide mentors, Saturday classes, individualized counseling, and extended classroom hours; and require students to wear uniforms.

The district presented statistics demonstrating that black males were 39 percent of the graduates from Detroit public schools as compared with 61 percent black females, that the male short-term suspension rate was twice that of females, that 54 percent of black males dropped out of school as compared with 45 percent of black females, and that homicide was the leading cause of death among black males over age nine.(33) The court found that these statistics, while troubling, fell short of demonstrating that the exclusion of girls was substantially related to the school board's stated objective to combat high homicide, unemployment, and dropout rates among black males. The court found no evidence that the system was failing males because of the presence of females; the court concluded that the system also was failing females.

The court relied on two earlier rulings by the Office for Civil Rights, one requested by the Dade County Public Schools and the other by the Wisconsin Department of Public Instruction, declaring that segregation of students in all-male classes or schools violated Title IX.(34) The court followed OCR's lead in reading the law's exception for the admissions policies of elementary and secondary schools as applying "primarily" to those schools that had existed as single-sex before the enactment of Title IX and not as an authorization to establish new single-sex schools.

The case never went to trial but instead concluded in a preliminary injunction with the judge finding that the plaintiffs were likely to succeed on the merits. The school board agreed to admit girls rather than risk the cost of further litigation that it believed it could not win. The schools have continued to offer an African-centered curriculum to an approximately equal number of girls and boys chosen by lottery with priority given to siblings.(35) The Detroit decision has no precedential value outside the eastern district of Michigan. Nevertheless, it has served as a powerful deterrent to other school systems considering similar programs for black males.

The legal arguments challenging the Detroit and similar all-male Afrocentric programs focused on sex discrimination against females.

The political controversy, however, centered on the race issue, which found local and national black leaders on opposite sides of the divide. Even though the population is not totally black, the mere suggestion of racial segregation made Afrocentric schools difficult to justify politically. Scathing criticism of *Dr. Kenneth Clark*, whose research had provided controversial social science evidence to support the Supreme Court's decision in *Brown v. Board of Education* striking unequal.(36) For *Dr. Clark*, these schools constituted "academic child abuse." (37) He characterized them as a

“damaging psychological procedure” and a “shameless; ‘flagrant’ “violation of Brown.”(38)

The National Association for the Advancement of Colored People (NAACP) Legal Defense and Educational Fund also voiced strong opposition to the concept, arguing that these schools posed a real danger of resegregation and undermined efforts to eliminate segregation of black males in special education classes and separate schools for students with disciplinary problems.(39) Just before the district court ruling in the Detroit case, the NAACP at its annual convention in Houston had adopted a policy proclaiming its “historical opposition to school segregation of any kind.” In lieu of single-sex schools, the organization urged creation of “workable alternatives to the proposed segregated education for African-American males.(40) Detroit delegates disagreed with that position; they opposed the resolution during floor debate, and local black leaders shared their concerns. The president of the Detroit Urban League captured the critical nature of the problem for the black community. “Unfortunately,” he noted, “prisons are the male academies that we already have.”(41) Despite the political and legal flap generated by the Detroit initiative, urban school systems across the country continued to pursue single-sex education in alternative forms. Some even went underground to avoid legal challenge. A 1996 report published by the U.S. General Accounting Office cited numerous examples of single-sex programs throughout the country but failed to identify some of the districts.(42) Each new program invited threatening noises from civil rights groups with an occasional administrative warning from OCR. Both tactics forced school officials to either admit members of the other sex or terminate the project. In Presque Isle, Maine, and Ventura, California, for example, separate math classes for girls were nominally opened to boys when faced with a Title IX challenge. In Irvington, New Jersey, separate boys and girls class rooms in the middle school were shut down by a new superintendent, citing guidance from state officials that the classes violated Title IX. In Des Moines, Iowa, state officials closed the door on single-sex classrooms operating on a voluntary basis in two public schools for part of the day.(43) Milwaukee continued its African-American Immersion School but opened admissions to all races and both sexes pursuant to an agreement with the Office for Civil Rights.(44) In Dade County, Florida, a kindergarten and first-grade program for African American boys was forced to close down by OCR after its first year even though attendance rates had risen by 6 percent, test scores increased by 6 to 9 percent, and a decrease in hostility was noticeable.(45) New York City revised its original proposal to establish an all-male school, the Ujamaa Institute (“Ujamaa” being the Swahili word for “family”), in response to opposition from civil rights groups who called the plan sexist and racist.(46) The school district subsequently extended its admissions policy to include any student interested in an African-centered learning experience.(47)

The legal uncertainty of single-sex education, the continuing achievement gap between low-income and other students, and the lack of adequate data to determine whether public, and not just private, single-sex schools produce academic benefits moved Senator John C. Danforth of Missouri in 1994 to introduce legislation that would have permitted the experimental establishment of single-sex schools on a limited basis. The Danforth amendment responded to OCR interpretation of the law and the decision of the district court in the Detroit case. The proposal would have granted the Department of Education permission to waive what appeared to be a Title IX prohibition on single-sex schools and grant school districts permission to establish such programs on a voluntary basis for low-income educationally disadvantaged students. The department would have been authorized to award ten five-year grants to school districts for the

design and operation of educational opportunity single-sex schools for both males and females with a comparable coeducational option.

The proposal was roundly defeated despite support from prominent educators, researchers, lawyers, and government officials. Opponents of the amendment, including Senator Edward M. Kennedy of Massachusetts, rejected the concept of segregating the sexes for fear that even a limited experimental program might lead to further racial segregation in society and the ultimate shortchanging of women. Joining in the opposition to the Danforth amendment were the American Association of University Women, the National Coalition of La Raza, the American Civil Liberties Union, the Anti-Defamation League, the NAACP, and the National Organization for Women.(48)

New York City: Constitutional Claims in the Wake of VMJ

After the Detroit compromise in 1991, the next round of litigation began in the summer of 1996 when Community School District 4 in New York City announced plans to establish a Young Women Leadership School. With the ink barely dry on the Supreme Court's June 1996 opinion striking down the Virginia Military Institute's all-male admissions policy the New York Civil Liberties Union, the New York chapter of the National Organization for Women, and the New York Civil Rights Coalition challenged the legality of the all-girls public school that was scheduled to open that fall in East Harlem. At that time, only two single-sex public secondary schools remained in the entire country —Western High School in Baltimore and the Philadelphia High School for Girls, both selective college preparatory magnet schools with long histories of scholastic achievement and accomplished alumnae. Neither school technically excludes qualified male applicants, although both schools have remained de facto all-female and the curriculum of both is replicated at a nearby coed school. OCR investigations in 1992 concluded that neither school was denying admission to boys.

Unlike other city school districts, with the exception of ill-fated Detroit, New York forged ahead into uncertain legal waters without a ruling from the Office for Civil Rights, weighted down with the baggage of the VMI decision and the threat of imminent litigation. The VMI case and its implications for single-sex education nationwide immediately attracted national attention, while the East Harlem school, provided a focal point around which the broader discussion could center. The school would offer a strong academic curriculum focusing on math, science, and technology initially to two seventh-grade classes, with a grade added in each succeeding year. As soon as the plans became public, the New York Civil Liberties Union fired off a letter to the New York City chancellor of schools charging that the all-girls school violated the federal Constitution and federal statutes including Title IX. Now —specifically the New York chapter— again joined the opposition as it had in Detroit, along with the New York Civil Rights Coalition. The school became a hot topic for the media and the subject of educational discussion nationwide. The three groups subsequently filed a complaint under Title IX with the Office for Civil Rights of the Department of Education.

School districts across the country have watched carefully to see how the New York case would be resolved. New York City officials have stood resolute, refusing to back down as they had in the early 1990s when they abandoned their plans for an all-male Afrocentric school. The school opened in September 1996 with fifty seventh-grade girls selected from among one hundred applicants. In September 1997, the school added approximately fifty new seventh graders and fifty ninth graders to the student body

with fifty new seventh graders again added the following year. School officials plan gradually to expand into a college preparatory school through grade twelve. As of September 1998, almost two years after the complaint had been filed, the matter still remained under OCR investigation.

The federal claims raised by the civil liberties groups are similar to those advanced five years previously in Detroit. However, to strengthen their case they now rely on the VMI decision and several interim Title IX warnings issued by the Office for Civil Rights to other school districts. They speak with certitude, dismissing the core holding of VMI and misreading the language and legislative history of Title IX. But even those skeptical of the educational and social merits of single-sex programs have rejected their position. The National Women's Law Center, which has represented girls and women in many of the major gender discrimination cases over the past two decades, has clearly stated that "neither the Constitution nor Title IX prohibits all public single-sex education, let alone all single-sex education... The law. . . recognizes that there are circumstances in which properly designed and implemented single-sex education can play an important role in combating discrimination and dissipating traditional gender classifications." (49) Even the assistant secretary for civil rights in the Department of Education has publicly taken a moderate stand both on Title IX and on the impact of the VMI case. The statute, she has stated, does not prohibit separate schools by gender so long as the facilities and offerings are "comparable," while the majority of the Supreme Court in VMI "was very clearly speaking to the VMI case. It was silent on any other program around the country." (50)

VMI's route to the Supreme Court was as follows. In the late 1980s, VMI had received inquiries from 347 potential female applicants but responded to none of them. One of these women, a high school student, subsequently filed a complaint with the attorney general of the United States. Based on that complaint, the United States sued the Commonwealth of Virginia and VMI, alleging that the institution's all-male admissions policy violated the equal protection clause of the Fourteenth Amendment. The Supreme Court's 1996 decision in *United States v. Virginia* upheld that claim.(51) VMI is a prestigious military academy and, at the time of the Court's decision, the only remaining single-sex public college in Virginia. While VMI has a long-standing tradition of preparing men for the military, it primarily trains them for leadership roles in the corporate world and in government; only 15 percent of its graduates pursue military careers. In the course of the litigation, the state of Virginia proposed a separate all-female program, the Virginia Women's Institute for Leadership. The institute would be supported with state funds at Mary Baldwin College, a private liberal arts college for women. Both the district and appeals courts found the two programs to be "substantially comparable" and upheld the plan. The Supreme Court reversed and remanded the case.

Civil liberties groups maintain that the VMI decision renders all publicly supported single-sex schools unconstitutional. In VMI, however Justice Ruth Bader Ginsburg, writing for the majority of the Court, stressed the narrowness of the decision and the unique facts of the case. In an artfully yet forcefully crafted majority opinion, Justice Ginsburg, citing several cases that she had argued before the Court on gender equality, restated and applied with a bite the standard used in gender discrimination cases for the past two decades that classifications by sex must be "substantially related" to an "important governmental interest." Adding more teeth to that standard, the majority noted that courts must apply "skeptical scrutiny," taking a "hard look" at "generalizations or tendencies" based on gender and that categorical exclusions from a state-supported institution such as VMI must be backed by an "exceedingly persuasive justification." (52) Drawing On the rationale of *Sweatt v. Painter*, a seminal case in the

racial desegregation of higher education, the Court held that equality must be measured by both tangibles and intangibles.(53) The Court concluded that the state had failed to show "substantial equality"; the separate leadership program for women proposed by the state was but "a pale shadow of VMI" in terms of curricular and extracurricular choices, faculty stature, funding, prestige, library resources, and alumni support and influence.(54)

The state of Virginia offered two justifications for the exclusion of women from VMI: to preserve VMI's unique "adversative" approach and to provide diversity to an otherwise coeducational state system of higher education. The Court roundly dismissed the first, rejecting in particular lower court findings on gender-based developmental differences that pointed to typically male and female "tendencies." On the state's second justification, the justices reaffirmed the "state's prerogative evenhandedly to support diverse educational opportunities." In drawing the diversity line at "evenhandedness," they pointed to the circumstances surrounding VMI. where Virginia had denied to women a unique educational opportunity available solely at the state's "premier military institute." (55) The Court noted the history of pervasive exclusionary policies within higher education until recent decades and suggested that the all-male college is very likely to be a device for "preserving tacit assumptions of male superiority." (56) The majority waned that even "benign" justifications offered in defense of categorical exclusions would not be accepted automatically but must be grounded in a genuine purpose and not a post hoc rationalization. (57)

The justices stopped short of renouncing all gender-based classifications, leaving open the constitutional door to single-sex schools under certain conditions. They tried to chart a middle course between competing visions of women's equality, between the quest for absolute gender equality and the recognition that women should be compensated for socially imposed disabilities. The justices recognized that the "inherent differences" between men and women are "cause for celebration. Gender classifications are permissible where they "advance the full development of the talent and capacities of our nation's people," but not where they are used "to create or perpetuate the legal, social, and economic inferiority of women." (58) The Court more directly responded to arguments advanced by twenty-six private women's colleges and recognized "the mission of some single-sex schools to 'dissipate, rather than perpetuate, traditional gender classifications.'" (59)

The VMI case clearly is more akin factually to the first generation of all-male public institutions that generated litigation dating from the 1970s and 1980s than to the new second-generation models as exemplified by the New York and Detroit initiatives. VMI excluded women from a prestigious program based on stereotypical notions of women's capabilities and, as the Court concluded, perpetuated the "inferiority of women" and the superiority of men. Second-generation single-sex programs have just the opposite intent and projected effect. The new crop of single-sex schools, for both females and minority males, focus not on the "inherent" deficiencies of the categorically excluded sex as was the case with VMI, but on socially and environmentally created deficiencies of the included sex to "advance full development of...[their] talents and capacities."

The recent wave of single-sex initiatives compensate for past discrimination and aim at eliminating arbitrary barriers that historically have impeded the advancement of certain groups in society, particularly women and racial minorities. Unlike most of the single-sex public school programs of the pre—Title IX past (with the exception of a

handful of academically rigorous schools), which prepared girls for a clearly defined narrow role in society, the present-day model is designed to expand students' options, developing in them the knowledge and skills to compete in mainstream society. According to the Court in the VMI case, this type of compensatory program complies with the equality standard of the Fourteenth Amendment. Nevertheless, critics fail to recognize these subtle but significant distinctions, their vision clouded by the memory of hard-fought battles to open the doors of academically prestigious secondary schools, colleges, and universities, both public and private, that historically had excluded women.

A confusing inconsistency exists in oppositionist arguments that single-sex education merely resurrects the "separate but unequal" doctrine struck down by the Court more than four decades ago in *Brown v. Board of Education*. First, students attend single-sex programs on a voluntary basis and not under legal mandate as was the case with racially segregated schools. Second, these schools do not impose a badge of inferiority on students but instead enhance their self-esteem and their educational and economic opportunities. Choice within the context of single-sex schooling is markedly different from southern "freedom-of-choice" plans initiated in the 1960s to circumvent school desegregation mandates. There the intent was pernicious to disempower black children, circumscribe their options, and permanently exclude them from the mainstream. In theory, the child's choice was free. In practice, it depended on black initiative, stamina, and fortitude to circumvent numerous bureaucratic obstacles and to withstand the violence that often erupted when blacks tried to attend white schools.⁽⁶⁰⁾ In the case of single-sex education, choice is freely exercised and the intent is to empower students to develop their own life plans within mainstream society.

Title IX: Caught in a Web of Ambiguities

The concept of compensatory justice is also key to the discussion of Title IX. Enacted as part of the Education Amendments of 1972, the statute provides as follows: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."⁽⁶¹⁾

Title IX is enforced by the Office for Civil Rights of the Department of Education as an agency authorized to award funds for educational purposes. The statute directs OCR to promulgate regulations based on legislative intent and to enforce the law by terminating federal funds from noncomplying institutions and by "any other means authorized by law."⁽⁶²⁾ As Senator Birch Bayh of Indiana, cosponsor of the original legislation, noted, Title IX was designed to be "a strong and comprehensive measure [would] provide women with solid legal protection from the persistent, pernicious discrimination which is serving to perpetuate second-class citizenship for American women."⁽⁶³⁾

With regard to admissions policies, the statute expressly applies "only to institutions of vocational education, professional education, and graduate higher education, and to public institutions of undergraduate higher education."⁽⁶⁴⁾ It explicitly excludes the admissions policies of religious educational institutions whose tenets are inconsistent with the law, military training schools, and undergraduate public institutions of higher education that traditionally and continually from their establishment had a policy of admitting only students of one sex at the time the statute was enacted.⁽⁶⁵⁾ The

statute is silent as to admissions in private undergraduate colleges and elementary and secondary schools, other than vocational schools.

Opponents of public single-sex schools cite the Detroit case where the district court interpreted the explicit and implicit exemptions for admissions policies as “applicable primarily to historically pre-existing single sex-schools and not as an authorization to establish new single- sex schools.” (66) However, neither the language of the law nor its legislative history supports this interpretation. A more reasonable reading is that Title IX implicitly excludes the admissions policies of all institutions not expressly covered.

Remarks by Senator Bayh confirm this interpretation. Despite his stated personal belief that it would be “fairer to require all schools to adopt sex-neutral admissions policies,” he understood that Congress could not justify such a blanket requirement without further study. He therefore proposed that the commissioner of education hold hearings to respond to issues raised by the types of institutions exempted, including the question of requiring single-sex high schools to admit students of both sexes. He expressed amazement that the Office of Education had not maintained statistics on “how many elementary and secondary schools—even public schools—are restricted in admission to one sex.”(67)] Senator Bayh’s reference here to both public and private schools is noteworthy. The Senate sponsor of the legislation himself apparently believed that the initial Title IX legislation would exempt the admissions policies of single-sex elementary and secondary schools, both public and private, pending further congressional action. That action never took place, letting stand the original exemption.

Whether Title IX covers a particular educational practice, however, turns not only on the statute itself but also on regulations adopted in 1975 by what was then the Department of Health, Education and Welfare and now enforced by the Department of Education. The regulations distinguish between sex discrimination in admissions and in access to course offerings. As to the first, the regulations repeat the language of the statute and expressly limit the provisions covering admissions “only to institutions of vocational education, professional education, graduate higher education, and public institutions of undergraduate higher education.” (68) As to course offerings, the regulations seemingly present a broad prohibition, banning institutions from “provid[ing] out any course or otherwise carry[ing] out any of its education program or activity separately on the basis of sex, or requir[ing] or refus[ing] participation therein by any of its students on such basis.”(69)

The regulations, however, recognize gender differences and the importance of maintaining privacy and safety interests. Separate teams for contact sports, grouping students in physical education activities by ability assessed by individual performance, providing separate portions of classes that extensively address human sexuality, and permitting separate musical choral groups based on a particular vocal range or quality all fall within exceptions to the general ban on single-sex programs or activities. (70) The regulations also permit separate programs for pregnant students as long as participation is completely voluntary and the program is comparable to the program offered nonpregnant students. (71)

In recent years, the general prohibition against separation of the sexes in educational programs or activities has formed the basis for arguments challenging single-sex classes within coeducational schools. The exceptions provided in the regulations do not

cover any of the core academic subjects such as math, science, and computers, which currently are the focus of many of these initiatives. However, a convincing counterargument draws from another key provision within the Title IX regulations that permits schools to take “affirmative action” to “overcome the effects of conditions which resulted in limited participation therein by persons of a particular sex” even when no formal findings of discrimination exist.(72) Single-sex classes, and single-sex schools for that matter, are designed to overcome socially and environmentally imposed conditions that have impeded academic advancement among certain student groups. Those conditions have limited academic interest and participation in subjects such as math, science, and computers among young women and limited academic achievement among low-income minority students, both males and females.

An alternative argument raised by opponents of single-sex schools is based on the “comparability” clause of the regulations. Here school districts are prohibited from discriminating on the basis of sex in “any . . . school or educational unit” unless “comparable” courses, services, and facilities are offered to those who are excluded.(73) Civil rights groups give the comparability requirement a strained reading. They go so far as to reject the concept of even a separate school for the excluded group and require that comparable means “identical” and only in a coeducational setting. However, the comparability requirement does not mandate expressly that courses, services, and facilities be provided to the excluded group in another single setting. In other words, a public single-sex school for girls need not trigger a legal obligation to establish a comparable single-sex school for boys (although it is legally questionable whether the opposite holds under the affirmative action rationale) as long as educational opportunities of equal quality are offered even in a coed setting. In the case of the Young Women’s Leadership School in New York, for example, the school district maintains that it already provides numerous “comparable” opportunities for boys within several coeducation schools throughout the district.

School districts that have established single-sex schools and classes, therefore, have available three defenses to OCR charges of noncompliance with Title IX. First, they can argue that OCR is acting ultra vires; that is, that the agency is acting beyond the scope of its power and misinterpreting congressional intent in applying Title IX to the admissions policies of public elementary and secondary schools. Second, school systems can maintain that the comparability requirement is flexible and not limited to offering an identical single-sex program for members of the opposite sex but can include a similar educational program provided in the context of coeducation. Third, in view of research findings on low achievement particularly in math and science and diminished self-esteem among girls, combined with the social and academic problems of minority students caught in a cycle of poverty, single-sex schools and classes can be justified as affirmative action measures for certain populations within the meaning of the Title IX regulations.

Whether framed in the language of “affirmative action” under Title IX or as an “exceedingly persuasive justification” under the equal protection clause of the Fourteenth Amendment, the legal standard provided by federal law places school officials under careful judicial and administrative scrutiny to prove single-sex schools and classes exist within the bounds of the law. The evidence clearly lies in empirical research supported by anecdotal reports documenting both the failure of the predominant system of coeducation to develop fully the talents of all students and the academic, social, and developmental benefits that at least some students derive from single-sex education.

The Research Evidence

Research findings on single-sex education lend themselves to varied and conflicting interpretations. The conclusions drawn depend on a number of factors, including the underlying question, who is posing it, the tested impact or effect, programmatic objectives, pedagogical practices, and the needs of the particular student population. Despite the indeterminacy, lawyers, policymakers, educators, and parents are looking for definitive answers based in empirical evidence that point the way toward either single-sex or coeducation.

Lawyers ask whether the findings are sufficiently persuasive to meet the federal legal standards. As a statutory matter under Title IX are single-sex classes and schools justifiable as “affirmative” steps toward overcoming the effects of conditions that have resulted in limited educational participation by girls in general or by minority boys? Even if permissible under Title IX, single-sex programs must comply with constitutional norms under the Fourteenth Amendment. Is there an adequately tight fit between the means used (separation of the sexes) and the governmental interest to be served (improving academic achievement, developing interest and opening access for women to certain traditionally male-dominated career opportunities, enhancing self-esteem, compensating for prior discrimination, providing diverse educational opportunities)? Policymakers undoubtedly raise legal concerns, but they also weigh the benefits and the costs of establishing single-sex classes and programs on a limited or on a more extensive basis. On one side of the balance are the potential gains in academic achievement and opportunities along with the value of providing students and families with educational options. On the other side are the arguable but avoidable dangers of racial and gender stereotypes, unequal services, racial resegregation, and diversion of public resources from addressing broader systemic and societal problems dealing with gender and race.

Early Research: From Youth Culture to Women’s Colleges

Contemporary challenges to the canon of coeducation find their sociological roots in the publication of James S. Coleman’s 1961 book, *The Adolescent Society*.⁽⁷⁴⁾ Here Coleman examined the value systems of adolescents in ten schools and communities, leading him to conclude that the youth culture in secondary schools exerts a negative effect on intellectual activities. In what he referred to as “the competition for adolescent energies,” adolescent values emphasizing popularity rather than academic achievement resulted at least partially from the coeducational organization of the schools. The “cruel jungle of rating and dating,” he maintained, proved particularly harmful for girls whose primary emphasis was on making themselves into “desirable objects for boys.” He concluded that “coeducation in some high schools may be inimical to both academic and social adjustment.”⁽⁷⁵⁾ Coleman understood that his findings were not applicable to the universe but only to “some” high schools.

Despite the intuitive appeal of Coleman’s findings, his conclusions did not stem the tide of coeducation in the following two decades. Nevertheless, his research has resurfaced in recent years to support single-sex education for girls and minority males, two populations that seem especially vulnerable to the nonacademic values and social pressures that serve as academic distractions to at least some and perhaps many students in the typical coeducational school.

Coleman's work was set aside for several decades while the research focus shifted to higher education. Some of the earliest policy arguments supporting single-sex education relied on data gathered from students and graduates of women's colleges in the 1960s and 1970s. Studies conducted during this period found that, as compared with women attending coeducational institutions, students at single-sex colleges were more satisfied with their overall college experience and more likely to major in nontraditional disciplines and to demonstrate higher levels of self-esteem and leadership skills.(76) Research findings also documented that graduates of women's colleges had achieved greater success in their chosen occupations and greater mental happiness.(77) A survey of nearly five thousand women's college graduates from the classes of 1967 and 1977 found that nearly half had earned advanced degrees and almost half were working in traditionally male-dominated jobs such as lawyer, physician, or manager, while 90 percent stated that their colleges were successful in fostering students' self-confidence.(78)

The population examined in these early studies formed a highly selective group of women, many of them attending elite private colleges at a time when access to prestigious all-male institutions was closed to them. Research conducted after coeducational options for women had been broadly expanded has yielded less consistent findings. Similar results on measures of student satisfaction with the women's college experience, except on the issue of social life, have been reported. Single-sex students also have demonstrated a greater likelihood of obtaining a degree.(79) Contrary to earlier studies, however, more controlled research has yielded less positive results. Controlling for Scholastic Aptitude Test (SAT) scores and socioeconomic status, a broader-based sampling of students, only 10 percent of whom had attended Seven Sister schools and 20 percent high-quality four-year schools, found that graduates of women's colleges were less likely to obtain a graduate degree than graduates of coeducational institutions. However, they were more likely to hold a high- prestige job than their counterparts from coeducational institutions. This difference between educational level completed and job prestige may be a function of the comparative quality of the undergraduate experience; that is, the particular single-sex college degree may have had greater purchasing power in the job market.(80)

Despite the appeal of the early research findings on women's colleges, the obvious differences between the college and secondary school getting and the populations served render this data of limited direct relevance to the current debate over single-sex education. This observation, however, does not suggest that these studies should be dismissed outright. Research on women's colleges, while now outdated, has helped shape contemporary discourse on single-sex schools and has provided insights into the factors that may contribute to the academic advancement of women, including role models, high expectations of students, collaborative teaching and learning techniques, opportunities for student leadership, peer support, and faculty who are committed to women's development and who believe that women are capable learners.(81) These institutional factors also could prove significant to the education of other groups who have been foreclosed historically from full equal opportunity, particularly low-income minority students.

Examining the Evidence: Is the Glass Half-Empty or Half-Full?

Before the mid-1980s, single-sex education was held in such disfavor —particularly in the public sector— that little interest or opportunity existed for researchers to pursue comparative studies. The modern-day retreat from single-sex public schooling in the

wake of Title IX effectively eliminated the field and subjects for meaningful research in the United States. Since the 1980s, however, renewed interest in the concept has generated repeated analysis and discussion of a limited body of social science research in a seemingly fruitless search for conclusive findings. These studies draw largely from three research contexts: studies from abroad schools, studies from the and studies of examining private and government-operated examining private independent schools, and studies of Catholic schools. Each of these settings presents institutional and cultural distinctions that prove problematic when applying the findings to the American public school context. Nevertheless, in the absence of more directly relevant data, the existing research studies have now become critical to the current debate over single-sex schooling.

The bulk of research on single-sex schooling has compared student performance and behavior by gender and school type. Recent studies have focused on the relative cognitive and affective benefits to be gained by black and Hispanic minority students, and particularly males, educated in single-sex settings. The discussion that follows addresses the key issues raised and findings made in each of these contexts.

A number of studies include at least a partial review of the research. Two comprehensive and politically significant overviews, however, demand particular discussion for their distinct perspectives, their differing conclusions, and their potential impact on educational practice. The differences stem, in part, from the particular studies and outcomes selected for sponsoring organization. With that caveat in mind, these both establish a framework for examining the research questions asked and the conclusions drawn before moving on to several major studies that have helped shape the research agenda. The first overview was commissioned by the Office of Educational Research and Improvement (OERI) Bush administration. The second is the report *Separated by Sex*, released in 1998 by the American Association of University Women.

In 1992, OERI convened a group of scholars and practitioners to examine the effects of single-sex education on students from the academic and social/affective dimensions. The meeting resulted in the publication of a two-volume report. The second volume consists of nine papers prepared and presented by researchers and practitioners, including several heads of all-boys and all-girls schools, both independent and Catholic, all supporting the concept of single-sex education.⁽⁸²⁾ The first volume presents an overview of twenty studies on single-sex schooling.⁽⁸³⁾ Many of the studies conducted abroad did not control for student and family background characteristics including socioeconomic status, parents' education, prior achievement scores, and curriculum track.

Among the reported findings from the United States were that girls in single-sex schools experienced significantly greater improvement in science and reading achievement between the second and third years of high school than their coeducational counterparts; that female graduates of all-girls schools subsequently attended more selective colleges, had higher educational aspirations, and were more satisfied with the college environment; and that both white girls and minority students of both sexes outperformed their counterparts in coeducational programs on a variety of academic measures.⁽⁸⁴⁾ Several studies indicated that while girls may benefit from single-sex schooling, coeducation may be more conducive to academic achievement for boys.⁽⁸⁵⁾ Research conducted in Nigeria and Thailand found that boys in coeducational schools demonstrated higher achievement levels and held less stereotypical views of math than did boys attending single-sex schools.⁽⁸⁶⁾ The same

findings were made for girls in single-sex schools. However, several studies examined in the OERI report found little or no differences in outcome measures between the two approaches for either boys or girls.(87)

The report concludes that, despite the inconclusive research findings, sufficient empirical evidence is available to support the proposition that single-sex schools may produce positive outcomes, particularly for young women, and that the countervailing evidence to reject that proposition is not sufficiently convincing. The report recommends future directions for research comparing the effects of single-sex and coeducation, including drawing data from larger samples, examining the effects of single-sex classes, and exploring the differential effects of specific educational practices within single-sex and coeducational schools. The report recommends that researchers agree on the use of specific and more appropriate statistical techniques and control for individual differences. It further suggests that future research efforts both expand the set of outcomes examined to include such measures as dropping out of school and teen parenthood and compare the effects of different models and practices on different racial—ethnic groups. The report sounds a warning that unless current findings are extended and refined, little opportunity will arise to learn from single-sex schools because few of them will survive.(88)

Here was a government report challenging the conventional wisdom of coeducation and supporting single-sex schooling, a position that should have ignited a storm of debate and further research on the topic. Yet it received scarce attention in the educational community or in the press. By the time the report was published in 1993, the Bush administration appointees who had commissioned the study had left the Department of Education. The report disappeared from view, only to resurface as an occasional bibliographic entry in subsequent studies.

Five years later, a similar report examined much of the same research but within an expanded database, including papers presented by several of the same researchers participating in the OERI project. In contrast to the OERI analysis, this report created a firestorm of controversy in the popular press and sent shock waves throughout the educational community.(89) This time, the American Association of University of Women, the same group whose series of reports in the early 1990s had sparked a similar debate over coeducation for girls, was voicing its opinion, and the opinion was that “separating by sex is not the solution to gender inequity in school.”(90) With only a select group of educators and researchers reading the full report, the group’s press release became virtually the sole piece of evidence in the court of popular opinion. The release listed among the report’s findings that “there is no evidence in general that single-sex education works or is better for girls than coeducation”; that “some kinds of single-sex programs produce positive results for some students including a preference for math and science among girls”; and that “there is no significant improvement in girls’ achievement in single-sex classes.”

The media ran with the first and third of these findings but ignored or underplayed the second, which qualifies the other two. In the days following the report’s release, newspaper headlines read: “All-Girl Schools Questioned as a Way to Attain Equity”; “Report Casts Doubt on the Value of Single-Sex Schooling”; and “Separate and Unequal? A Study Finds No Evidence That All-Female Classes Are Better, But Some Girls Are Happy on Their Own.” (91) As William Raspberry rightly noted in the Washington Post, “There’s hardly anything in the AAUW study to support the news reports.” The AAUW had placed an embargo against premature release of the report that suggested significance, according to Raspberry. “Reporters naturally think it their duty to find that significance and not get lost in inconsistencies. But in this case, the

inconsistencies may be the heart of the story.” (92) In the days following publication of the report, AAUW officials under scored those inconsistencies while drawing a definitive conclusion in favor of coeducation. In a commentary published in the Chicago Tribune, Maggie Ford, president of the AAUW Educational Foundation, stated flatly, “Single-sex education does not solve the problem of gender inequality.” (93) Appearing on the Today show, AAUW president Janice Weinman reaffirmed that conclusion. “Separating by sex is not the solution,” she stated. “Good education is. What the study showed was that, in general, you cannot conclude that separating by sex makes the difference.” (94) In an interview with the Houston Chronicle, she elaborated: “Girls cannot be put in situations in which they’re seen as the exception to the rule. They need to be seen as part of the rule:’ For those who remembered the AAUW’s opposition to the proposed Danforth amendment back in 1994, these statements were not surprising but they were nonetheless troubling. The likelihood of negative fallout from the report was obvious. Ellen Goodman of the Boston Globe suggested that the report would “leave anyone skeptical about putting too much of the public hope or education money into P.S. Mars and P.S. Venus.” (95) Newsweek speculated that the AAUW report “could dampen some of the enthusiasm for single-sex schools in the rest of the country.” (96)

The National Coalition of Girls Schools immediately published a counter—press release. The coalition called the AAUW to task for its blanket assertions rejecting single-sex education as “the solution” to gender inequities while the experts the group had convened had concluded that “there is insufficient data to make a definitive judgement”. The NCGS statement continued with a list of quantifiable areas in which all-girl education does work: NCGS students score almost one hundred points above the national mean for the SAT, receiving a 594 verbal and 575 math as compared with scores of 503 and 494, respectively, a girls nationwide taking the test in 1997; 77 percent of NCGS students taking Advanced Placement examinations score a 3 or higher; 7.8 percent of NCGS students were National Merit semifinalists in 1997, while another 13 percent received letters of commendation. (97)

The AAUW report is divided into two main parts. The first is an extensive literature review divided into two sections; attitudinal and environment variables and achievement variables that cover both single-sex classes and single-sex schools. The second part of the report consists of four papers presented in a roundtable discussion among sixteen researchers, A careful reading of the report belies the negative conclusions highlighted in the association’s press release as well as statements made by AAUW officials and subsequent press reports. Of the four round- table presenters only one flatly rejects single-sex education- The other three suggest either that it works for certain populations or that the educational and research communities define more clearly the pedagogical practices that fall within the concept and proceed with caution before investing additional public resources in a concept that begs for further empirical support. The report summarizes suggestions made by various roundtable participants for further research in single-sex education Implicit in the notion of research is further implementation that, judging from press reports and public statements, AAUW spokespersons seemingly would find inadvisable.

In a nutshell, the report speculates that perhaps it is not the single-sex setting itself that yields benefits at least to some students, but certain organizational elements that typically characterize single-sex schools, including smaller classes, a strong academic curriculum, parental involvement, orderly classrooms, and nonsexist teaching practices. Yet the report fails to offer sufficient empirical support for that speculation. The report expressly admits that “researchers do not know for certain whether the benefits derive from factors unique to single-sex programs, or whether these factors also exist or can be reproduced in coeducational settings.” The thrust of the report,

nevertheless, is that the remedy for gender inequity is not to separate girls from boys but to reproduce these elements in the coeducational public school.

Among the report's findings from the existing research are the following:

- Consistent evidence is found from a variety of settings that girls in single-sex schools perceive subjects such as math and science as less “masculine”, suggesting this to be a factor intrinsic to the single-sex environment.
- Contrary to popular belief, no consistent relationship appears between sex stereotyping and type of school; the separation of girls and boys does not decrease the reinforcement of gender roles.
- The relatively few studies on single-sex classrooms yield inconsistent results. While girls perceive single-sex math and science classes to be superior, no evidence is available that this perception or preference is accompanied by achievement gains.
- Research findings on the effects of single-sex schools on student achievement are inconsistent. Some studies have found no differences in achievement attributable to school type but more significant differences resulting from socioeconomic status;. Others have shown positive effects.

Single-Sex Classes: Hard versus Soft Evidence

The AAUW report accurately notes that few research studies have been conducted on single-sex classes, an approach that is gaining increased interest in school districts across the country. Those studies that exist, most of them from abroad, generally report no differences in achievement between students in single-sex and mixed classes. Some studies indicate, however, that students in single-sex math classes develop more positive attitudes toward the subject and higher confidence levels that are statistically associated with achievement and greater rates of persistence in advanced mathematics classes for girls. (98) They also report an overall preference among females for the single-sex classroom environment. (99)

Several underlying questions demand attention before drawing any conclusions from these findings. What are the goals of the program academic, social and behavioral, cultural, or a combination of some or all of these? What outcomes are educators attempting to achieve and are these the same outcomes that researchers are examining? What does it mean to say that a particular pedagogical approach is “better”? Does it mean that it produces higher achievement in the short-term as measured by some objective standard or could it mean that it produces enhanced interest, more positive attitudes, or certain behavioral changes that lead to long-term success and academic pursuit?

Single-sex classes cover a wide range of goals and implementation strategies, thus drawing valid conclusions as to the effectiveness of the single-sex class concept is difficult. In recent years, school districts have used the approach primarily in three contexts. The first model separates students by sex in specific elective subjects, particularly advanced math and science and more recently computers, to address diminished achievement and interest reported among girls as they progress from elementary through middle and high school. The second model separates girls and boys for all or the major part of the school day, which is the model adopted in some of the Afrocentric programs such as those operating in Milwaukee and Baltimore. A third approach is to provide, within a coeducational school, single-sex classes that are an integral part of the regular curriculum beyond math and science. The model that has

gained the most interest in school districts across the country is the all-girl math, science, and computer class.

Some researchers have challenged the basic assumption that school achievement among females is consistently lower than among males. (100) A careful examination of the data tells a far more nuanced story than might have been told a decade or two ago. Recent research findings on boys and specifically minority boys, reveal lower scores on national reading tests, higher dropout rates, and higher referrals to special education as compared with girls. (101) A 1998 AAUW report suggests that social conditioning may skew the educational experience for boys as well as for girls. The report acknowledges that boys also face inequities in schools, with girls predominating in advanced English, foreign language, and arts classes, for example. (102) Females continue to surpass males on standardized tests of reading and writing skills while the math-science gender gap in favor of males has narrowed significantly since the 1980s. National Assessment of Educational Progress (NAEP) data from 1992 to 1994 indicate that, while the percentage of fourth-grade male students performing at the "proficient" level in reading remained at 24 for both years, the percentage of females increased from 30 to 32.' (103) Data on verbal-writing ability gathered from seventy-four tests administered to twelfth graders nationwide indicate similar gender differences in favor of females.' (104)

The emerging interest in "boys studies" has proven useful and necessary in highlighting the unique and serious educational issues surrounding male students. But it has also clouded the unique, although perhaps less compelling, issues surrounding females. A close look at the data over time makes clear that the debate over gender and achievement is too complex to be reduced to simple and fixed formulae. It also clarifies and justifies continued concerns over female achievement in math and science without raising those concerns to overstated crisis proportions and without negating the gains made over the past decade. For example, while female students significantly increase their performance advantage over males in writing and language arts between grades four and eight, males increase their performance advantage over females in math concepts and natural science between grades eight and twelve. (105) And while the percentage of female graduates in 1994 who had earned high school credits in precalculus, trigonometry, statistics, geology, and biology slightly surpassed that of boys as compared with 1992 data, boys still demonstrated higher enrollment rates in calculus, Advanced Placement calculus, and other courses in advanced mathematics as well as Advanced Placement chemistry, physics, and honors physics.' (106)

NAEP data from 1996 reveal that while females and males both demonstrate average scores of 272 in math at grade eight, females continue to lag behind males in grades four and twelve. (107) Females also continue to lag behind males in science, with the gap widening to a statistically significant level by grade twelve. At that point, their respective average scale scores are 148 and 152 as compared with 149 and 152 at grades four and eight. (108) Males continue to outstrip females in math on the Scholastic Aptitude Test; the average math score for females in 1998 was 496 and for males 531.' (109)

The relative differences between eighth-grade math, on the one hand, and twelfth-grade math and senior-year SAT math scores, on the other, could be a function of more males than females taking more advanced level mathematics courses in high school. The observed differences could also be a function of the greater spread in male achievement in general. Above the 90th percentile and below the 10th percentile are approximately four females for every five males. The low end reflects the greater number of males in special education classes. The high end represents a self-selected

group that tends to take high-stakes tests such as the SAT and Advanced Placement examinations. As the analysis moves from national samples to self-selected samples, therefore, the gender differences become greater, indicating that while female students have made significant gains particularly in closing the math gap they still have a distance to go to achieve equal representation at the top ranks in both math and science, which are the key to expanding career opportunities.(110) One can speculate that if students below the 10th percentile, with its greater representation of male students, were eliminated from the calculations, more consistently higher achievement levels across the grades might be observed among males as compared with females.

Advanced Placement exam data confirm a widening gender gap in math and science interest as students progress through the grades. In 1998, girls comprised only 12 percent of students nationwide taking the AB-level (including topics typically covered in an introductory computer science course) and 19 percent taking the A-level (including topics typically covered in a full-year course) computer science exams and only 38 percent of students taking the BC-level math calculus exam (including topics typically covered in an introductory Calculus I college course).(111) Even girls who enroll in Advanced Placement classes may experience self-doubts. In a study of 160 high school girls taking Advanced Placement in mathematics and physics, 40 percent reportedly "played down good grades in mathematics in front of classmates and peers, especially male classmates and peers.(112) These differences carry over into college and career planning. According to 1998 data, only 2.6 percent of female as compared with 15.2 percent of male college freshman plan to major in engineering and 1 percent of females as compared with 3.7 percent of males are planning a technology major.(113)]

Female students do not lack a "math-science gene," but something operating in the social, school, home environment, Of any combination of the three prevents girls from achieving beyond a certain level. Research on occupational choices suggests that women retreat from math and science because gender socialization inhibits their confidence in their abilities and expectations of success while causing them to place less subjective task value on these fields than on other possible options.(114) This premise resonates with the concept of "academic disidentification," which has been advanced with regard to minority students and academic failure.(115)

The data clearly document a math and science gender gap that has narrowed significantly over time but continues to exist at the more advanced levels. The question remains as to how best to eliminate it completely. Empirical research on single-sex classes to date has been far too limited to prove useful in assessing policy options. However, single-sex classes in math, science, and computers have produced a substantial body of anecdotal assessments. These reports, while subjective, nonscientific, and not the sole basis upon which to carve policy and practice into stone, provide useful insights into the learning process and suggest directions for future program design and research. Many of these classes technically are open to both boys and girls to insulate the program from legal attack. However, they actively recruit from among the female population sending the clear message that "Boys need not enroll."

The all-girls algebra class operating in the Presque Isle (Maine) High School since the late 1980s is an example of this approach. Now called College Algebra with Emphasis on Women's Contributions in Mathematics, the course is offered as an elective for both male and female students, yet no male has chosen to take the course. School officials report that girls who have taken the class have tended to take more math and science

courses in high school. are more likely to consider a career involving math, demonstrate enhanced self-confidence, and are more likely to improve their scores on the statewide math test from eighth to eleventh grade.(116) Another example is the Walker School, a private coeducational school in Marietta, Georgia, which started separating boys and girls in eighth-grade algebra in 1993. Many of its middle-level math and science classes are now offered only as single-sex. While school officials acknowledge that girls' achievement has not changed noticeably, the number of girls enrolling in upper-level math and science classes has increased from one-third to approximately 45 to 55 percent. As the head of a private coeducational middle school that has used single-gender math classes for the past four years notes, "What you can't measure in a quantitative way is how these kids feel about themselves. It's enough to know that I have more girls saying, 'I love math.'"(117)

On a related note, educators have become concerned with the relatively low numbers of girls taking elective computer classes, thereby foreclosing them later from career opportunities. Washington Middle School in Olympia, Washington, offers an all-girls class combining technology skills with issues that are particularly interesting to adolescent girls, such as nutrition, eating disorders, career exploration, and women's self-defense. Before the class was instituted, twice as many eighth- and ninth- grade boys as girls enrolled in technology electives. The ratio between boys and girls is now more evenly balanced. As one eighth-grade girl observed, "A lot of girls that are shy around boys will feel more comfortable in a class like this and will not be afraid to ask questions."

Manchester High School in Connecticut offers both single-sex and mixed-gender sections of a course in Technology in the World using the same curriculum for both. Officials report that the program has enhanced the students' self-confidence and their interest in technology careers. It also has increased the number of girls in technology electives from 15 percent to 24 percent of total enrollment. Both the Washington and Connecticut schools technically open all their technology classes to girls and boys, again to meet the comparability requirements of Title IX. However, in Connecticut the course description for the all-girls sections reads, "for female students but open to boys by request;" while the Washington school holds a promotional meeting only for girls when recruiting students for the special class.(118)

From a research perspective, the obvious question that remains unanswered in these reports is whether separating by gender is the only way or even the most effective way to achieve the same ends or whether alternative approaches could prove as effective. Schools might initiate after-school math and science clubs for girls or invite women engaged in math and science to discuss their careers or serve as mentors. A comparison of the effects of such alternatives and of single-sex classes would prove useful. The issue of single-sex classes in all their permutations demands more carefully controlled longitudinal studies. Nevertheless, the reported outcomes from the existing programs, however inconclusive, have expanded the discussion of single-sex education beyond short-term achievement gains to include the initial effects of short-term attitudinal and behavioral changes on long-term career opportunities and choices.

Single-Sex Schools: Gender Race, and Socioeconomic Class

In addition to documenting the lack of conclusive empirical data supporting single-sex classes, the 1998 AAUW report concludes that research on single-sex schools has produced inconsistent findings. Several of these studies have played a critical role in

shaping the current debate on single-sex schools for girls. Beginning in the mid-1980s, Valerie E. Lee, in collaboration with several researchers, and Cornelius Riordan separately reported on a series of research studies examining the effects of single-sex and coeducation on girls' and boys' achievement. Their field of research primarily was Catholic schools, although Lee subsequently extended her research into the private independent sector. Both researchers participated in the 1992 OERJ and 1997 AAUW roundtable discussions.

In two widely cited studies of secondary school students and graduates in the 1980s, the first with Anthony S. Bryk and the second with Helen M. Marks, Lee found positive effects of single-sex schooling for girls but few differences attributable to school type for boys. Both studies used data from High School and Beyond, a national survey sponsored by the National Center for Education Statistics in 1980. They drew data from sophomores in 1980 with a follow-up two years later in senior year. In comparing girls and boys attending single-sex and coeducational Catholic schools, they found that girls in all-girls schools expressed a more positive attitude toward academics and demonstrated higher achievement gains in reading, writing, and science than their coeducational counterparts. Single-sex school boys did not show statistically significant gains between sophomore and senior years but were more likely to enroll in math and science classes and less likely to sign up for vocational classes than their coeducational counterparts.(119)

Lee subsequently found that these positive effects were sustained in college. Both females and males were more likely to attend selective four- year colleges and were more likely to have considered attending graduate school than their coeducational counterparts. The effect on girls from single-sex schools extended to attitudinal and behavioral outcomes, with members of this group holding significantly less stereotypical attitudes about women in the workplace and demonstrating a greater likelihood of being actively involved in politics by the end of college.(120) Lee subsequently examined students attending independent schools for similar differences in achievement and attitudes, collecting data in 1989 and 1990. Finding no consistent pattern of effects for either boys or girls, she expanded the scope of the study and reported findings on why students and families choose a single-sex over a coeducational school. (121) Unable to explain the inconsistencies between Catholic and independent secondary schools by differences in dates of data collection, motives of parents in selecting single-sex education, or historical differences in the status of single-sex versus coeducational schools between the two sectors, Lee shifted the focus of her subsequent research to examine school organization effects on student outcomes.

It is significant that one of the leading researchers on single-sex education now has withdrawn her support for the concept. In 1992, she noted in her closing remarks to the OERI roundtable that "there is something important going on in some single-sex schools for young women" and therefore society should "not allow this option to disappear from the American educational landscape". Five years later, however, she did a complete turnaround in her AAUW roundtable presentation, unequivocally stating that "separating adolescents by gender for secondary schooling is not an appropriate solution to the problem of" gender inequity in educational outcomes, either in the short or in the long run." (122) Riordan has remained steadfast in his support for single-sex schooling, although he has refined his position over the years. His research has received wide attention primarily for examining the effects of single-sex schooling on black and Hispanic male and female students.(123) Similar to Lee, Riordan used the High School and Beyond survey data to compare the performance in sophomore and senior years on cognitive and affective measures of white, black, and Hispanic students

attending single-sex and coeducational Catholic schools. His findings revealed that white girls and black and Hispanic students of both sexes fare better in single-sex schools, while coeducation might prove more beneficial to white boys. When scores were adjusted for initial ability, school variables, and home background, girls and minority boys attending single-sex schools demonstrated higher cognitive achievement, higher self-esteem, higher internal control, and more liberal attitudes toward working women than their counterparts in coeducational institutions. The opposite effect held for white boys in single-sex schools with their coeducational counterparts surpassing them on all cognitive and affective measures used in the study. While the affective differences were not large, the data seemed to reveal that white males attain healthier attitudinal outcomes in coeducational schools. Single-sex schools, meanwhile, provide minority males in particular with an environment and set of school policies that foster the growth of internal control mechanisms through which they believe that they are masters of their own destinies.

How can the marked differential effect of single-sex and coeducation between white and minority males in particular be explained? Riordan suggests that white males in coeducational schools may gain an advantage by comparing themselves as a group to females who may serve as a "negative reference group." In the competitive environment of predominantly white all-male schools, some low-performing males end up serving that function thereby driving overall achievement scores down. Offsetting these forces for minority and white female students in single-sex schools, he maintains, is the "greater receptivity" for school effects among low-status students together with the benefits of role models and what he calls the "adolescent subculture" of athletics, social life, and dating, which he found strongest among boys in single-sex schools. Riordan notes that, for both black and Hispanic boys and girls, about 70 percent of the test score difference between minorities in single-sex and coeducational schools can be explained by adjusting for school variables including curriculum, course work, homework, and the adolescent subculture. These formal and informal school structures apparently have a more significant effect on minorities than on white males. Riordan's findings confirm those of previous studies that the overall effects of school quality are greater among minorities and among the poor.(124)

In his remarks to the AAUW roundtable participants in 1997, Riordan acknowledged findings that appear to contradict the results obtained in his own studies and that of Lee and Bryk dating from the 1980s. Research on Catholic schools in the 1990s indicates that students in single-sex schools do not outperform their coeducation counterparts on various measures of achievement.(125) Riordan maintains that Catholic school students as a group have become more affluent over the past decade and therefore recent findings are completely consistent with those of Lee with regard to private independent schools where no differences in academic achievement were observed between students in single-sex and coeducational programs. He concludes that the effects of single-sex education fall within a hierarchy of low-status characteristics (female, racial minority, low socioeconomic status). The greatest effects are found among black and Hispanic females from low socioeconomic homes, slightly diminished effects among black and Hispanic males from low socioeconomic homes, smaller effects still for white middle-class females, and virtually no differential effects among affluent students regardless of race or gender. While he agrees with Lee that certain organizational features including small school size and a strong academic curriculum explain the greater academic effectiveness of single-sex schools, he argues that they do not totally explain the difference. For him, features that flow out of school type, including role models, leadership opportunities, diminished youth-culture values,

and an affirmative pro-academic parent and student choice are key to the success of single-sex schools particularly for historically disadvantaged student populations.(126)

Based on a cross-national study of four countries (Belgium, Japan, New Zealand, and Thailand), Riordan suggests that as single-sex schools become more common, the achievement differential between them and coeducational institutions may diminish.(127) This may explain the more frequently reported achievement differences found in the United States than abroad. In many of the countries where similar studies have found no differences, a more even balance exists between single-sex and coeducational schools, both private and government-operated. In the United States, in contrast, single-sex schools form a small sector of the country's educational system and seemingly attract different students from those educated in the larger coeducational sector. In view of the strong resistance in the United States to the single-sex model, however, single-sex schools are unlikely to approach the numbers of coeducational institutions, particularly in the public sector, to realize this phenomenon of diminishing differential effects.

In the meantime, the results of studies of minority students indicate that single-sex schooling may hold promise for transforming the lives of inner-city girls and boys caught in the downward spiral of poverty and the destructive forces that flow from it. In cities across the nation, the number of black and Hispanic children living in impoverished neighborhoods has risen to staggering levels, reaching 97 percent for blacks in Washington, D.C., and 86 percent in Detroit.(128)

According to sociologist Claude Steele, at the root of academic failure for black students in particular is public schools' inability to develop and constantly reaffirm what he calls "academic identification"; that is, the belief that school achievement is a promising basis for self-esteem.(129) Achievement levels among minority students lend credibility to this observation. Data from the National Assessment of Educational Progress in reading reveal a persistent gap of at least twenty-five points between the average scores of white students on the one hand and black and Hispanic students on the other at ages nine, thirteen, and seventeen.(130) The racial gap in math scores is equally troubling, ranging from twenty-four points between white and Hispanic students at grade twelve to thirty-nine points between white and black students at grade eight.(131) Only 42 percent of eighth-grade students in urban school districts as compared with 66 percent in nonurban districts scored at basic level or higher.(132)

Another way to examine the achievement gap between white and minority students is to compare statewide data with figures drawn from urban school districts with significant populations of minority students. In Illinois, for example, while nearly three-fourths of the state's third graders in 1996 were rated "proficient" on the state reading test, less than half the students in Chicago met that standard. That same year, the average Connecticut fourth grader was ten times as likely as the average fourth grader in Hartford to achieve proficiency on all three of the state's mastery tests. (133) Add these statistics to the compelling figures on crime, dropout rates, drug abuse, teen-age pregnancy, and homicide for minority youth, and the educational needs of minorities in the inner city reach crisis proportions. If research evidence suggests that single-sex education is most effective within low-income minority student populations, both female and male, then it is certainly worth serious consideration.

Conclusion

Single-sex education is a complex web of unanswered questions and promising leads, all searching for a definitive resolution in the law, in policy alternatives, and in research findings. The three strands join together in an interactive relationship, each sensitive to developments in the other. As is often the case in education, the policy initiatives on single-sex schooling initially took off despite uncertainty in the law and limited evidence in the research.

The legality of single-sex education—from schools, to classes, to dual academies—has been placed on hold, with OCR apparently taking a wait-and-see approach to the various single-sex models now operating throughout the United States. OCR's foot dragging in resolving the Title IX complaint brought by civil liberties groups against the Young Women's Leadership School in New York is clear evidence of this cautionary approach. The agency apparently has waited for the issue to play itself out more fully in the policy and research arenas. Agency officials are struggling to accommodate the law to an educational concept that at least in theory is gaining popularity among parents and legitimacy among educators and politicians. While some may argue that the core issue is educational and not legal, until the legal issues are resolved, single-sex programs remain in a holding pattern at best. The questionable legality of the approach merely serves the purposes of those who dismiss further research and implementation of single-sex programs.

It remains to be seen if the American Association of University Women's 1998 report dampens enthusiasm for single-sex education as some commentators have predicted. The report itself is nonconclusive. However, the negative spin placed on it by the media along with conclusory statements made publicly by AAUW officials, despite their assertions of neutrality, have unjustifiably cast a dark cloud over supportive arguments based in research findings that single-sex education benefits at least some students. The credibility of these findings may prove significant to OCR's ultimate position under Title IX and may play a key role in the judiciary's application of the equal protection clause of the Fourteenth Amendment. Yet even if the agency or the courts were to dismiss research findings as inconclusive at best, documentation as to the achievement gap between white and minority students as well as continuing differences between male and female students in math, science, and computer participation, particularly at the most advanced levels, may prove of sufficient weight to justify gender classifications. Aside from research evidence on academic gains, the Supreme Court in the VMI case suggested that diversity itself may be a sufficiently persuasive justification for single-sex schooling provided the intent and effect are not to promote gender stereotypes.

Research findings also influence the thinking of policymakers and educators, particularly those who are searching for scientific evidence to support their preferences. The AAUW reports of the early 1990s, coming on the heels of the Sadkers' research suggesting that coeducation shortchanges girls, demonstrate how a limited body of controversial research findings can ignite a national debate, turn around the conventional thinking on educational practice, and quickly generate programmatic innovation at the local level. Time will tell whether a narrow set of reportedly inconclusive findings, capitalized upon by the media, will now send those same forces into retreat.

Opponents of single-sex education argue that the approach fails to hold up when put to the test of rigorous empirical research. But that assertion only leads to the question of

whether coeducation or many other pedagogical approaches would fare any better. The continuing debate over whole language versus phonics and the ongoing controversy over bilingual education versus English immersion after more than two decades of research studies—are two examples of how educational practices often take root with insufficient theoretical grounding. Part of the problem is the flawed nature of educational research itself where it is impossible to control the many differential factors that operate across classrooms and schools and to isolate the particular element producing the observed effect. The other part of the problem is that, in the vast world of diverse student needs, practice often outstrips theory in the rush to remedy every newly diagnosed problem in response to popular or political pressure.

Perhaps researchers on single-sex education have been asking the wrong questions. As the anecdotal evidence on single-sex classes demonstrates, the focus on objectively measurable short-term outcomes in achievement score gains, for example, may simply divert attention from the real question of short-term behavioral and attitudinal changes that ultimately produce long-term effects in career choices and greater control over one's life plan. It could be that empowerment, and not higher test scores per se, is at the heart of single-sex education. Unfortunately, the personal benefits that flow from empowerment are not clearly apparent or measurable in the short-term. Stripping away all the rhetoric of "benevolent sexism" and "silver bullets" and focusing on the educational issues reveals a perplexing inconsistency in the equality arguments advanced by the opponents of single-sex schooling. Their position, in fact, turns the equality ideal on its head. Over the past three decades, that ideal has come to mean not just "same is equal" but sometimes "different is equal" and even "more is equal" when applied to various student populations. Since the 1960s, the economically disadvantaged in compensatory programs, linguistic minorities in bilingual education programs, and the disabled assigned to special education services have all received differential treatment, some of it mandated by law. Why should gender differences not be afforded similar recognition? Single-sex education, particularly for women and minorities, is merely an extension of the very concept of equality that these same civil rights groups have pressed before courts, legislatures, and administrative agencies.

Viewed in the context of the larger debate over school reform, single-sex education is another issue in which the principles of individual liberty (in the form of choice) and equality (in the form of equal educational opportunity) are clearly reconcilable and mutually reinforcing despite assertions to the contrary grounded more in ideology and misplaced fears than in sound pedagogy. This argument is particularly salient in the case of minority students for whom inner-city public schools and three decades of compensatory programs have proven such a dismal failure. If equality is truly a fundamental goal of public education, particularly in the inner city, then public schools should afford to the disadvantaged, with potentially greater personal and social returns, the same choice and opportunity that historically have been enjoyed by those attending private schools.

This is not to suggest that school districts mandate separate schooling or that it is appropriate for all students or even for all members of certain groups. Nevertheless, despite inconclusive findings on achievement gains, evidence exists that at least some girls experience a certain comfort level and develop greater self-confidence, interest, and academic identification in single-sex settings. The research also suggests that single-sex programs can prove especially beneficial to low-income black and Hispanic students. More significantly, no research has found that single-sex schools harm students in any palpable way, other than speculations on gender stereotyping and some suggestions as to the negative effects on nonminority boys. Given the general

lack of harm to students, the inconclusive empirical findings on cognitive benefits to girls, the supportive findings as to the benefits to minorities, and the observational reports on affective gains and behavioral changes, it is seriously questionable whether government should mandate, as some opponents argues that all public school students attend a coed school. The seemingly strong presumption now afforded coeducation defies logic. If neither approach has proven more significantly effective in terms of cognitive or affective gains, then why not place both on a level plane of educational acceptability?

The concerns raised by women groups who challenge single-sex education, however, must not be summarily dismissed but addressed directly. Their expressed fears of gender stereotyping as a potential danger are understandable given the battles fought to break down the doors of exclusionary institutions. In view of that all-too-recent history, school districts must watch vigilantly to assure that single-sex programs do not slide back into pre-Title IX stereotypes that limit rather than expand the horizons of young women and certain young men. The faint possibility of backsliding, which is avoidable, however, hardly outweighs the clear potential benefits of the approach for some students. Without further implementation, school districts will never have the chance to test the strength of that potential.

The debate over single-sex education and gender inequities continues to evolve. Researchers are now turning their attention to the developmental and educational needs of boys. Undoubtedly, school districts should focus more attention on identifying and remedying inequities wherever they exist. But the need for systemic change does not preclude more focused incremental reform. Single-sex education is no more costly than coeducation and therefore should not divert resources from systemwide remedial action. Ironically, the legal challenges themselves have brought undue attention to these programs, dissuaded school officials from implementing creative models, and made single-sex schools and classes largely symbolic while at the same time diverting public concern from broadscale change to promote gender equity throughout the system. As a result, both programmatic and systemwide efforts to address gender inequities have suffered.

Neither separating by sex nor any other single approach provides the definitive solution to gender inequities in the schools. But empirical research backed up by anecdotal reports indicates that single-sex education in its various forms may be one of several solutions along with certain organizational supports and teacher training. The assertion that particular features common to single-sex schools, including smallness of scale, equitable teaching practices, and a focused academic curriculum are what makes the definitive difference instead of and not in addition to gender separation is speculative at best and contradicts plausible sociological explanations to the contrary. Whether these features can produce the same academic and attitudinal effects in a coeducational setting demands further investigation.

No conclusive evidence exists that single-sex education is better or worse than coeducation for all students, but it may be better for some. Given that fact, why not offer thoughtfully planned alternatives that generate useful findings for parents and students of all economic means to define for themselves what constitutes a "good education"? The only reasonable conclusion that can be drawn from the current controversy over single-sex education is that school districts across the country should continue to serve as laboratories of opportunity and diversity from which can emerge the most effective approaches to educating future generations of girls and boys,

whether separately or together.

Comment by Cornelius Riordan

Rosemary C. Salomone has written a comprehensive and excellent paper on single-sex schooling that examines the complicated web of policy, research, and the law. She argues that the policy debate over single-sex schools is tied to several independent sources: First, coeducation has become the norm for the organization of schools in America (and through out the Western world); second, a literature emerged in the 1980s leading to the view that males and females may have different learning styles; third, a series of studies by the American Association of University Women (AAUW) and others documented in no uncertain terms that girls were shortchanged in schools and these schools were coeducational schools; fourth, independent girls schools responded to this AAUW defined state of affairs by fainting the National Coalition of Girls Schools (independent boys schools have followed with the International Boys' Schools Coalition); and fifth, minority males and females were failing in these coeducational schools at a more alarming rate than white students. leading to a desperate response from the minority community and minority educators for various remedies including single-sex schooling. (134)

Several other factors at work here include the decline of women's colleges, the response generated by this decline, and the broader idea of national educational reform, which has centered on the study of school effects (that is, the extent to which attendance at one type of school instead of another makes a difference, which has played itself out to a great extent in terms of Catholic versus public schools, charter or alter native versus regular public schools, and schools attended by students with vouchers versus some other condition).

The distinction that Salomone makes between first- and second-generation single-sex schools is critical. Women were first excluded from schools altogether and only later were permitted to have schools of their own; the struggle to overcome this sexist discriminatory practice led to coeducation. This state of affairs is entirely different from an interest in single-sex schooling that emerges from the failure of coeducation to provide equality of educational opportunity. And yet, one can also appreciate the fear on the part of many feminists that single-sex schooling is a risky step backward. To go down the single-sex road, one has to be able to trust that exclusion from schooling is simply no longer the problem for girls and women and will never again be the problem and that females are clearly advantaged in single-sex schools mainly because these schools possess an academic value climate as opposed to the youth culture, anti-academic value climate that dominates coeducational schools.

To make this distinction requires an enormous breadth of perspective and courage and is doomed to failure in the current milieu where values and policy are created and sustained by unsubstantiated press releases, a misinformed and undereducated press, a sound bite, Madison Avenue- controlled electronic media, a culture that values sports and violence far above that of the arts and the sciences, and political constituencies that are unable to face the reality that their previous positions on the issue may have been incorrect. It requires a historical understanding and the capacity to recognize that sex segregation, unlike race segregation, is no longer the challenge for gender equity. Salomone cites three major court decisions establishing in practice though not in legal precedent that single schools and classes are illegal. First in the early 1980s is the

decision regarding Central School in Philadelphia, which held in *Newburg v. Board of Education* that Central School for Boys was required to admit girls. Second was a case in Detroit where an out-of-court agreement was reached in which an effort to establish male academies for African American students was rejected and the schools were required to serve both sexes. And third is the famous 1996 2S2 Brookings Papers on Education Policy: 1999

Virginia Military Institute (VMI) decision (*United States v. Virginia*) that required this former men's military college to admit women. These three decisions have provided the basis for the widely held view that single-sex schools are illegal. Some critics of single-sex schools have pointed to the VMI decision as having declared that all publicly supported single-sex schools are unconstitutional.

However, the legal issues are not at all cut and dry. To understand why this is so, you need to anticipate the next case or set of cases that may appear before the Supreme Court regarding single-sex schooling. One likely case involves the Young Women's Leadership School in New York City and another the state of California, which is now providing single-sex schools for girls and boys along with a coeducational alternative. These cases would be entirely different from the cases cited above in which either boys only were being served or the facilities and the resources were simply not comparable in any sense whatsoever.

In the VMI decision, Justice Ruth Bader Ginsburg emphasized the narrowness of the decision and the unique facts in the case. I signed on to an amicus brief asking the Court to address the broader issue regarding the legality of single-sex schooling where it was provided for both males and females (which is what made VMI unique). In her majority opinion, Justice Ginsburg wrote that the decision applies only to VMI and not to other possible single-gender possibilities in other public schools.(135) In addition, Title IX regulations, now enforced by the Department of Education, have been interpreted to allow single-sex schools, though not single-sex classrooms.(136)

Over the past decade, virtually all efforts by some educators to experiment with single-sex schools or classes have been squelched by the threat of court action as in Philadelphia or Detroit. This is the case, Salomone argues, even though numerous rulings by the Office for Civil Rights and statements by the National Women's Law Center have indicated that "neither the Constitution nor Title IX prohibits all public single-sex education. ... The law ... recognizes that there are circumstances in which properly designed and implemented single-sex education can play an important role in combatting discrimination and dissipating traditional gender classifications."(137)

Unlike single-sex schools of the first generation, single-sex schools of the second generation are designed to expand, not narrow, the education of students and to provide a true option of obtaining an equal education, especially in the case of females and minorities who otherwise will falter in coeducational schools, as forty years of evidence has shown. Salomone notes further that an inconsistency exists in oppositionist arguments that single-sex schooling will resurrect the "separate but equal" doctrine struck down by the *Brown v. Board of Education* decision. Single-sex schooling is entirely voluntary and not mandated, as was the case formerly with racially segregated schools. Furthermore, the schools do not impose an image of inferiority on students but are all about enhancing their self worth and their educational opportunities. In effect, they are based on a manifesto that they provide more rather than less, and all the evidence supports this claim. There is no inconsistency or contradiction of this contention regarding input.

As one of the participants in the 1998 AAUW report that Salomone cites. I agree that using the AAUW press release or the media stories that followed it as a source for what the research says is inappropriate. Salomone makes that point in somewhat less direct terms. One can, however, effectively draw upon the review of research conducted by Mathematica for the Office of Educational Research and Improvement (OERI) 1992 report. This "report concluded that, despite the inconclusive research findings, there is sufficient evidence to support the proposition that single sex schools may produce positive outcomes for young women, and that the countervailing evidence to reject that proposition is not sufficiently convincing." (138)

The research is exceedingly persuasive in demonstrating that single- sex schools are effective in providing both greater equality and greater achievement, especially for white girls and African American and Hispanic American boys and girls. The data are both consistent and persistent when several specifications are made. Note first that I exclude single-sex classes from my contention for exceedingly persuasive positive effects. My argument centers on the notion of an academic culture that is endemic to single-sex schools and cannot be produced in one or two classrooms within an otherwise coeducational school.

Single-gender schools work. They work for girls and boys, women and men, whites and nonwhites, but this effect is limited to disadvantaged students. Research has demonstrated that the effects of single-gender schools are greatest among students who have been disadvantaged historically disadvantaged minorities, low and working class youth, and females (so long as the females are not affluent). Furthermore, these significant effects for at-risk students are small in comparison with the much larger effects of home background and type of curriculum in a given school. (139) All the hollering about types of schools applies only to these students. Over the past two decades, the data consistently and persistently confirm this hard to accept educational fact. Very few studies (and none in the United States) demonstrate that coeducational schools are more effective, either academically or developmentally.

At least a dozen theoretical rationales provide support for the contention that single-sex schools may be more effective academically than mixed- gender schools, especially for minorities and white females. Each of these rationales is less applicable when the schools and the students are mostly from high socioeconomic home backgrounds or if single-gender schools are normative in the society or in a subculture. These rationales are as follows:

1. The diminished strength of youth culture values
2. A greater degree of order and control
3. The provision of more successful role models
4. A reduction of sex differences in curriculum and opportunities
5. A reduction of sex bias in teacher-student interaction
6. A reduction of sexist behavior in peer interaction
7. The provision of a greater number of leadership opportunities
8. Single-gender schools require a pro-academic parent/student choice
9. Smaller school size
10. A core curriculum emphasizing academic subjects taken by all students (organization of the curriculum)
11. Positive relationships among teachers, parents, and students that lead to a shared value community with an emphasis on academics and equity (school social organization)
12. Active and constructivist teaching and learning (organization of instruction)

The last four on this list (9-12) draw on the work of Valerie E. Lee and her associates, who have identified several structural and organizational features of schools that generate increased academic achievement as well as increased equity among the students (a decrease in the gap between racial and social class groups).(140)]

Single-sex schools are places where students go to learn, not to play, not to hassle teachers and other students, and not primarily to meet their friends and have fun. Aside from affluent middle-class communities, private and alternative schools, coeducational schools are not all about academics. This has been noted often and with alarm by respected and distinguished investigators across a variety of disciplines using a variety of methodologies.

The pro-academic choice made by parents and students is the key explanatory variable. This choice sets into motion a set of relationships among teachers, parents, and students that emphasize academics and de-emphasize youth culture values that dominate coeducational schools. It is not about sex and romance nor is it about exclusion; it is about the rejection of anti-academic values that predominate U.S. culture and schools. Moreover, this rejection comes from the bottom up rather than the top down. And it drives all that follows. If you could produce this result without exclusion, that would be preferable but it is not possible in American society or schools at this time.

This academic environment is a function of the choicemaking process that is made by students who attend single-gender schools. In this regard, it is entirely different from a set of structures or programs that are put into place by educators. In single-sex schools, the academic environment is normative in a true sociological sense. It is a set of rules established by the subjective reality (definitions) of participants, which takes on an objective reality as a set of social structural norms. Moreover, these academic definitions of school contradict the nonacademic definitions that students will otherwise bring to school and that come to constitute a youth culture. In effect, single-gender schools mitigate the single largest obstacle that stands in the way of effective and equitable schooling, and it does this by using a fundamental sociological principle of how real social structures are created. Structures that are imposed and that contradict deeply cherished beliefs (regardless of how wrong-headed and problem and they may be) will be rejected out of hand by any group with substantial power in numbers such as students in schools.

By contrast, some alternatives that have been suggested for creating a pro-academic environment in coeducational schools or in schools generally should be considered. Specifically: examine the organizational features of effective schools identified by Lee.(141) In a 1995 study for AAUW, Lee, Xianglei Chan, and Becky A. Smerdon reported several cautionary findings regarding the effect of this set of school climate variables on the gender gap. (142) For example, the same school-level variables emphasizing academics (as in rationales 9—12 above) increased mathematics, science, social studies, and reading achievement, but they often did not reduce the gender gap favoring either males or females in these subject area tests. And, in some cases, the positive school level variables made matters worse greater parental involvement increased the gender gap favoring males in mathematics achievement, and a whole set of positive academic school variables (such as positive student-teacher relations and an academic learning environment) increased the gender gap in social studies. Aside from decreasing the gender gap in school engagement (which favors females), the school variables had either no effect or negative effects on the gender gap. In effect,

Lee, Chan, and Smerdon demonstrate convincingly that a whole range of positive school climate variables will increase student achievement and engagement with school, but these same variables have either null or negative effects on increasing gender equity for these same measures. (143)

How do schools get to be small or how do they develop communal relationships, authentic instruction, or a core academic curriculum? How can schools provide more successful academic role models and reduce the strength of anti-academic youth culture values? In essence, this requires reconstruction of schools. It requires a pro-academic choice on the part of administrators, teachers, parents, and students. Of these, students are the key stakeholders.

I presented my first research results in 1994 showing favorable effects of single-sex schools with great apprehension. I knew then as now that these findings would not sit well with most folks in America (regardless of their political persuasion). Later, when the research was exhausted and polished, I naively thought that the data alone would suffice; that is, that people would be persuaded by the consistency of the data results and the high quality of the research and that a greater receptivity to single-sex schools would emerge. More recently, I have come to see that data alone will not save single-sex schools; nor will data alone be sufficient to change the persistent problems that exist for both girls and boys in coeducational schools. This is not to say that research is not important, but only that ultimately the politics of education dictates the future of single-sex schools.

An instructive exercise is to contrast educational research and educational policy about single-gender schools and the use of uniforms in schools. A substantial degree of empirical research contrasts the relative effects of single- and mixed-gender schooling. Moreover, that knowledge is both theoretical and empirical. And, although not entirely consistent, a preponderance of evidence supports the positive value of single-gender education. Regarding the relative effects of wearing or not wearing uniforms in schools, next to nothing is known. All sorts of anecdotal reports and small sample studies have been made, but little hard data are available (there is some good theory). A educational practice such as requiring uniforms can easily become educational policy without a educational research. On February 24, 1995, President Bill Clinton instructed the U-S. Department of Education to distribute manuals to all school districts advising them how they can legally enforce a policy of uniforms in public schools. With this and several other speeches, the movement toward a national policy of school uniforms is racing ahead full speed, even though no one knows whether this policy will produce any positive educational results, including the reduction of violence in the schools, which is the major claim of its many proponents.

The push for school uniforms echoes what it must have been like when the movement toward coeducation began to take hold about a century ago. Coeducation (as a form of school organization) was institutionalized with little regard for educational research or educational theory or sociological theory. Just as coeducation was (and continues to be) politically correct, so, too, are school uniforms. Thus, political correctness can and often does override educational research and sociological theory in the formation of educational policy. Salomone elsewhere identified this as "the penis of ideology?" (144)

I am not against the use of uniforms or coeducation in schools per se, but I find it discomfoting for the entire educational community that pout that correctness can and

does override educational research in the formation of educational policy. Single-gender schools are politically incorrect and downright politically threatening to many people, and many of these people are educational researchers, policymakers, and special interest groups such as the AAUW Educational Foundation. This issue is not just about which type of school works best, but what most people think is politically expedient. In the long haul, however, educational politics may offer a deceiving foundation for educational policy in the absence of educational research and theory.

Comment by Janice Weinman

The purpose of the 1998 American Association of University Women Education Foundation (AAUWEF) report *Separated By Sex* was to inform the debate on single-sex education, not to take a pro or con position on the issue. Specifically, the goal was to move the public discussion from legal and political concerns to educational results. In other words, does the research support the generalization that students learn better in a single-sex environment?

To address that issue, AAUW research associate Pamela Haag reviewed more than one hundred research studies from 1980 until 1998. That was five times as many studies, for example, as the Office of Educational Research and Improvement looked at with regard to schooling.

Rosemary C. Salomone's statement that the AAUWEF report would reject single-sex education outright is simply not true. The AAUWEF analysis of the whole body of research on single-sex education shows that no evidence exists that single-sex education works or is better for girls in general than coeducation. Furthermore, when conditions and practices of a good education are present, both girls and boys succeed.

Some single-sex-educational programs produce positive results for some students in some settings, particularly regarding attitudes toward math and science for girls in single-sex classes. While school type is often credited with these results, research suggests that properties of a good education are what make the real difference. The conclusion that emerges for educators and policymakers is that the basic conditions of a good education, which include small schools, high standards, highly trained teachers, participatory learning, and a shared code of behavior and discipline, make the real difference in outcomes.

The AAUWEF report also found that no learning environment in single-sex or coed provides a sure escape from sexism, that some single-sex environments schools and classes reflect a traditional view of roles for girls and boys, and that in those environments sexism may be reinforced rather than negated.

Salomone views the questions of legality as the core issue regarding single-sex education and rightly critiques the simplistic standards of equality articulated by some legal defense groups. It is important, however, from the perspective of educators, practitioners, and policymakers and it was critical to the perspective of AAUWEF that the core issue not be the legal one only or primarily, but the educational one. Concerning that issue, the question arises: Does single-sex education or coeducation provide the most equity for educational resources and energies?

Research has found limited benefits. A small magnitude effect is evident for any school type. Even those few studies that ascribe positive achievement outcomes to single-sex schools note that this effect is some times statistically significant but not large. Furthermore, Salomone points to a lack of evidence, but a great deal of research has been done on a whole gamut of schools in the United States and abroad.

If school type had meaningful and independent effects on attitudes or achievement, much more consistency across schools in the research would be expected. Weighing the educational risk potential and given the small and, according to many studies, nonsignificant effects of school type and the contingent nature of its documented successes, why risk the deleterious effects that Salomone cites, to experiment with these schools and classes further? She lists the potential dangers of racial and gender stereotypes, unequal services, racial resegregation and diversion of public resources from addressing broader, systemic, and societal problems dealing with gender and race.

Salomone also raises and addresses the issue of experimentation. The AAUWEF would support experimentation, particularly when accompanied by research. However, the lack of evidence is just as much an argument against investing time into initiatives with small effects in the best circumstances when all sorts of initiatives for the broader student population —focused curricula, intensive classes, intensive instruction, and smaller schools and classes— have a stronger research base supporting them.

Salomone comments that no evidence is available that single-sex schooling hurts students. However, there is, as long as boys are viewed as students. Most studies have found that boys perform better in coeducational environments, and the work of Valerie Lee and Leonie Rennie has suggested that boys develop a more profound and marked sense of sexism and homophobic attitudes when they are in single-sex classrooms. So, some of the potential consequences of what sexism can create in single-sex environments must be examined.

When girls are drawn off from coeducational classes and put into single-sex classes, those girls who remained were a much smaller minority and were in a much more difficult situation in terms of peer support and academic engagement.

Salomone referred extensively to research studies. Regarding the comparative quality of the research, three of the newest studies on single sex education have used the most sophisticated modeling and analysis techniques and have not found statistically meaningful effects from single-sex schools.

Salomone advocates incremental educational reform that does not divert resources from systemwide remedial action. The AAUWEF has always promoted gender equity in coeducation as the long-term solution to ensure that all students receive the best educational approach. That is not to say that AAUWEF does not encourage experimentation of different approaches. However, educational reform cannot rely on easy solutions and silver bullets.

If the issue of gender equity and the creation of a generally neutral environment that supports all students are to be considered, then those conditions that are most pervasive and are most challenging for the educational system must be examined.

NOTES

* Diane Ravitch, (ed.), *Brookings Papers on Education Policy* 1999, Brookings Institution Press Washington. D.C., 1999, pp. 231-297.

* I would like to thank Cindy Schmitt and Margaret McConville, St. John School of Law Class of 1999, for their skilful research assistance in preparing this paper.

1. David Tyack and Elizabeth Hansot, *Learning Together: A History of Coeducation in American Schools* (Yale University Press, 1990), p. 95.
2. U.S. Commissioner of Education Report for 1900-1901, p. 1221, cited in Tyack and Hansot, *Learning Together*, p. 114.
3. *Brown v. Board of Education*, 347 U 484 (1954); and *Kirstein v. University of Virginia*, 309 F. Supp. 184 (ED. Va. 1970).
4. For a discussion of the enactment of the Title IX statute and regulations. see Andrew Fischel and Janice Pottker, *National Politics and Sex Discrimination in Education* (Lexington, Mass.: Lexington Books, 1977); and Anne N. Costain, "Eliminating Sex Discrimination in Education: Lobbying for Implementation of Title ix;" in Marian Lid Palley and Michael B. Preston, eds., *Race, Sex, and Polity Problems* (Lexington, Mass: Lexington Books, 1979).
5. Elisabeth Hansot, "Historical and Contemporary Views of Gender and Education?" in Sari Knopp Biklen and Diane Pollard, eds., *Gender and Education* (University of Chicago Press, 1993), p. 13.
6. Vernon Loeb, "A Mandate for Equal Access in Conflict with Central's All-Male Tradition," *Education Week*, February 2, 1983, p. 12.
7. National Association of Independent Schools, *Background: Single-Sex Independent Schools* (Washington, 1998).
8. Carol Gilligan, *In a Different Voice* (Harvard University Press, 1982, 1993), p. 2.
9. Carol Gilligan, "Preface: Teaching Shakespeare's Sister: Notes from the Underground of Female Adolescence," in Carol Gilligan, Nona P. Lyons, and Trudy J. Hammer, eds., *Making Connections* (Harvard University Press, 1990), p. 10.
10. Gilligan, "Preface," p. 14.
11. Gilligan, "Preface," p. 10.
12. "Opposing All-Male Admission Policy at Virginia Military Institute: Amicus Curiae Brief of Professor Carol Gilligan and the Program on Gender. Science, and the Law," *Women's Law Reporter*; vol. 16 (Fall 1994), pp. 1-16.
13. Myra Sadker and David Sadker, *Failing at Fairness* (New Touchstone, 1994).
14. American Association of University Women (AAUW), *Shortchanging Girls, Shortchanging America* (Washington, January 1991).
15. American Association of University Women Educational Foundation, *How Schools Shortchange Girls* (Washington, February 1992).
16. American Association of University Women Educational Foundation, *Hostile Hallways: The AAUW Survey on Sexual Harassment in America's Schools* (Washington, June 1993).
17. Nan Stein, Nancy L. Marshall, and Linda R. Tropp, *Sexual Harassment in Our Schools* (Wellesley College, Center for Research on Women, March 1993), p. 4.
18. American Association of University Women Educational Foundation, *Girls in the Middle: Working to Succeed in School* (Washington, 1996).
19. "Dreadful Waste of Female Talent," *San Francisco Chronicle*, February 13, 1992, p. A22; and Susan Chira, "Bias against Girls Ts Found Rife in Schools, With Lasting Damage," *New York Times*, February 12, 1992, p. A22.
20. Peter Schmidt. "Idea of 'Gender Gap' in Schools under Attack," *Education Week*, September 18, 1994, pp. 1. 16 (quoting Diane Ravitch, Senator Nancy Landon

- Kassebaum, Albert Shanker, and Jerry M. Wiener, president of the American Psychiatric Association). For a detailed criticism of the AAUW findings, the Sadkers' research, and the Wellesley report on sexual harassment, see Christina Hoff Sommers, *Who Stole Feminism?* (New York: Touchstone, 1994), pp. 157-87.
21. See Peggy Orenstein, *School Girls: Young Women, Self Esteem, and the confidence Gap* (Doubleday, 1994); and Mary Pipher, *Reviving Ophelia: Saving the Selves of Adolescent Girls* (G. P. Putnam's Sons, 1994).
 22. National Coalition of Girls Schools, "Girls' Schools Offer Valuable Lessons for Education Reform," press release, March 22, 1998.
 23. National Association of Independent Schools, *NAIS Statistics 1997* (Washington, 1997), p. 7, table 3.
 24. U.S. Department of Education, *A Profile of the American High School Senior 1992*, cited in Children's Defense Fund, *The State of America's Children: Yearbook 1997* (Washington, 1997), p. 73
 25. "State-Specific Birth Rates for Teenagers United States 1990-1996," *Morbidity and Mortality Weekly Report*, vol. 46, no. 36 (September 12, 1997), p. 838, table 1.
 26. Dirk Johnson, "Milwaukee Creating 2 Schools for Black Boys," *New York Times*, September 30, 1990, p. A1. For a comprehensive discussion of the problems facing black males, see Jewell Taylor Gibbs and others, eds., *Young, Black, and Male in America: An Endangered Species* (Dover, Mass.: Auburn House Publishing Company, 1988).
 27. Amendments of 1972, 20 U.S.C. section 1681 et seq. (Supp. 1997); and implementing regulations, 34 C.F.R. Part 106 (Supp. 1997).
 28. *Vorchheimer v. School District of Philadelphia*, 532 F.2d 880 (3rd Cir. 1976), aff'd by an equally divided court, 430 U.S. 703 (1977).
 29. *Newburg v. Board of Public Education, School District of Philadelphia*, 9 Phil. Cty. Rep. 556 (1983).
 30. 478 A.2d 1352 (Pa. Super. Ct. 1984).
 31. Vernon Loeb, "A Mandate for Equal Access in Conflict with Central's All-Male Tradition," *Education Week*, February 2, 1983. p. 12.
 32. *Garrett v. Board of Education*, 175 F.Supp. 1004 (E.D. Mich. S.D. 1991).
 33. Male Academy Task Force, *Detroit Public Schools, "Male Academy Grades K-8: A Demonstration Program for At-Risk Males,"* unpublished report, March 26, 1991.
 34. Letter from Jesse U High, regional director, Office for Civil Rights, to Dr. Joseph Fernandez, superintendent of schools, Dade County, Florida, August 31, 1988 (noting that the "proposal to assign students on the basis of sex, even though voluntary on the part of the boys who would participate, is not an exception allowed for by [Title IX] and letter from Cathy Lewis, Office for Civil Rights, to the Cultural and Equity Section Wisconsin Department of Public Instruction, May 18, 1990 (stating that under Title IX "it would not be acceptable to separate the students on the basis of sex").
 35. Telephone interview with Dr. Elysa Robinson, assistant director of community and business partnerships, Detroit public schools, April 3, 1998.
 36. *Brown v. Board of Education*.
 37. Tom Dunkel, "Self-Segregated Schools Seek to Build Self-Esteem," *Washington Times*, March 11, 1991, p. E1.
 38. Janet Wilson "Expert Dislikes All-Male Schools, Consultant Says They Harm Black Students," *Detroit Free Press*, February 24, 1992, p. 1B.
 39. NAACP Legal Defense and Educational Fund *Reflections on Proposals for Separate Schools for African-American Male Pupils* (Washington, 1990).
 40. See All African-American Male Schools resolution in NAACP Education Department. *NAACP Resolutions on Education, 1970-1993* (Baltimore, Md 1991).
 41. Ron Russell "NAACP Fund Might Join in Opposing All-Male Schools," *Detroit News*, August 21, 1991, p. 1.

42. U.S. General Accounting Office, Public Education: Issues Involving Single-Gender Schools and Programs, No. B-27125 (May 1996).
43. Mark Walsh, "Ruling's Effect on Single-Sex Classes Mulled," Education Week, July 10, 1996, pp. 1, 31.
44. For a discussion of the Milwaukee African-American Immersion Program, see Marcia L. Narine, Single-Sex, Single-Race Public Schools: A Solution to the Problems Plaguing the Black Community, ERIC Document 348 423, (U.S. Department of Education, Office of Educational Research and Improvement, April 1992). For a general discussion of programs for African American male students, see Carol Ascher, "School Programs for African American Male Students: Trends and Issues No. 15," ERIC Document 334 338, (U.S. Department of Education, Office of Educational Research and Improvement, May 1991).
45. Belle S. Whelan, "Making Public Education Work for Black Males," paper prepared for the 1991 National Conference on Preventing and Treating Alcohol and Other Drug Abuse. HIV Infection, and AIDS in the Black Community. p. 16 (ERIC Document 347 260).
46. Stephanie Gutmann, "Class Conflict?' New Republic, October 7, 1996, pp. 12, 13.
47. Audrey T. McCluskey, "The Historical Context of the Single-Sex Schooling Debate among African Americans," Western Journal of Black Studies vol. 17 no- 4 (1993), pp- 193-201.
48. Congressional Record, daily ed., August 1, 1994, pp. S10163---10174.
49. National Women's Law Center, Single-Sex Education after the VMJ Decision (Washington, October 1996).
50. Walsh, "Ruling's Effect on Single-Sex Classes Mulled," pp. 1, 31 (statement of Norma Cantu, assistant secretary for civil rights. U.S. Department of Education).
51. United States v. Virginia, 116 S.Ct. 2264 (1996).
52. United States v. Virginia, 2280.
53. Sweatt v. Painter 339 U.S. 629 (1950), declaring unconstitutional the separate law school established by the state of Texas for black students based on inequalities in both tangible and intangible features as compared with the state's flagship University of Texas School of Law.
54. United States v. Virginia, 2265.
55. United States v. Virginia, 2276, note 7.
56. United States v. Virginia, 2277. note 8.
57. United States v. Virginia, 2275.
58. United States v. Virginia, 2276.
59. United States v. Virginia, 2276, note 7, citing "Brief for Twenty-Six Private Women's Colleges as Amicus Curiae' p. 5.
60. Rosemary C. Salomone, Equal Education under Law (St. Martin's Press, 1986), p. 46.
61. Education Amendments of 1972, 20 U.S.C. section 1681(a)(Supp. 1998).
62. Education Amendments of 1972, 20 U.S.C. section 1682 (Supp. 1998).
63. Congressional Record, daily ed., February 15, 1972, p. S5803.
64. Education Amendments of 1972, 20 U.S.C. section 1681 (a)(1)(Supp. 1998).
65. Education Amendments of 1972, 20 U.S.C. section 1681 (a)(3-5)(Supp. 1998).
66. Garrett v. Board of Education, 1009.
67. Congressional Record, February 15, 1972, S3935-3997
68. 34 C.F.R. section 106.15(d)(1998).
69. 34 C.F.R. section 106.34(1998).
70. 106 C.F.R. section 106.34(b-f)(1998).
71. 34 C.F.R. section 106.40(a)(3)(1998).
72. 34 C.F.R. section 106.3(b)(1998).
73. 34 C.F.R. section 106.35(1998).

74. James S. Coleman, *The Adolescent Society: The Social Life of the Teenager and Its Impact on Education* (New York: Free Press of Glencoe, 1961).
75. Coleman, *The Adolescent Society*, p. 51.
76. Alexander W. Astin, *What Matters in College? Four Critical Years* (San Francisco: Jossey-Bass, 1977); Alexander W. Astin, *What Matters in College? Four Critical Years Revisited* (San Francisco: Jossey-Bass, 1992); M. Elizabeth Tidball, "Baccalaureate Origins of Natural Science Doctorates," *Journal of Higher Education*, vol. 57 (November/December 1956), pp. 606-20; M. Elizabeth Tidball "Women's Colleges and Women Achievers Revisited," *Signs: Journal of Women in Culture and Society*, vol. 5 (1980), pp. 504-17; and Cornelius Riordan, "Single- and Mixed-Gender Colleges for Women: Educational, Attitudinal, and Occupational Outcomes," *Review of Higher Education*, vol. 15 (1992), pp. 327-46.
77. Riordan, "Single- and Mixed-Gender Colleges for Women."
78. Women's College Coalition, '67/77: A Profile of Recent Women's College Graduates (Washington, February 1985).
79. Daryl K. Smith, "Women's Colleges and Coed Colleges: Is There a Difference for Women?" *Journal of Higher Education*, vol. 61, no. 2 (March/April 1990), pp. 181-97.
80. Cornelius Riordan, *Girls and Boys in School: Together or Separate* (New York: Teachers College Press, 1990), pp. 124-26.
81. Daryl G. Smith, Lisa E. Wolf, and Diane E. Morrison, "Paths to Success: Factors Related to the Impact of Women's Colleges," *Journal of Higher Education*, vol. 66, no. 3 (May/June 1995), pp. 247-48.
82. U.S. Department of Education, *Single-Sex Schooling: Proponents Speak*, vol. 2, special report from the Office of Educational Research and Improvement (December 1993).
83. U.S. Department of Education, *Single-Sex Schooling: Perspectives from Practice and Research*, vol. 1, special report from the Office of Educational Research and Improvement (December 1993).
84. Valerie E. Lee and Anthony S. Bryk, "Effects of Single-Sex Secondary Schools on Student Achievement and Attitudes," *Journal of Educational Psychology*, vol. 78 no. 5 (1986), pp. 381-95; Valerie E. & Helen M. Marks "Sustained Effect of the Single-Sex School Experience on Attitudes Behaviors, and Values in College," *Journal of Educational Psychology*, vol. 83 no. 3 (1990), pp. 578-92; and Riordan, *Girls and Boys in School*.
85. Riordan, *Girls and Boys in School*.
86. Valerie E. Lee and Marlaine E. Lockheed, "The Effects of Single-Sex Schooling on Achievement and Attitudes in Nigeria," *Comparative Education Review*, vol. 34, no. 2 (May 1990), pp. 209-31; and Emmanuel Jimenez and Marlaine E. Lockheed, "Enhancing Girls' Learning through Single-Sex Education: Evidence and Policy Conundrum," *Educational Evaluation and Policy Analysis*, vol. 11, no. 2 (Summer 1989), pp. 117-42.
87. Herbert W. Marsh, "Effects of Attending Single-Sex and Coeducational High Schools on Achievement, Attitudes, Behaviors and Sex Differences" *Journal of Educational Psychology*, vol. 81, no. 1 (1989), pp. 70-85.
88. U.S. Department of Education, *Single-Sex Schooling: Perspectives from Practice and Research*, pp 35-37.
89. American Association of University Women Educational Foundation, *Separated by Sex: A Critical Look at Single-Sex Education for Girls* (Washington, March 1998).
90. American Association of University Women Educational Foundation, "Report Finds Separating by Sex Not the Solution to Gender Inequity in School", press release, March 12, 1998.
91. Tamar Lewin. "All-Girl Schools Questioned as a Way to Attain Equity;" *New York Times*, March 12, 1998, p. A12; Beth Reinhard, "Report Casts Doubt on the Value of

- Single-Sex Schooling," *Education Week*, March 18, 1998, p. 8; and Connie Leslie, "Separate and Unequal," *Newsweek*, March 23, 1998 p. 55.
92. William Raspberry, "Same-Sex Schools Work Sometimes," *Washington Post*, March 16, 1998, p. A21.
 93. Maggie Ford "Report Has Value," *Chicago Tribune*, March 25, 1998, p. 18.
 94. Interview with Janice Weinman, president, American Association of University Women, Today, March 13, 1998 (NBC News transcripts).
 95. Ellen Goodman, "Separating Boys, Girls in School Hasn't Been a Panacea," *Boston Globe*, March 12, 1998, p. A21.
 96. Connie Leslie, "Separate and Unequal?" *Newsweek*, March 23, 1998, p. 55.
 97. National Coalition of Girls Schools, "Girls' Schools Offer Valuable Lessons for Education Reform?" press release, March 11, 1998.
 98. James Macfarlane and Pat Crawford, "The Effect of Sex-Segregated Mathematics Classes on Student Attitudes, Achievement, and Enrollment in Mathematics," evaluation for the North York Board of Education, Willowdale, Ontario September 1985; and Kenneth J. Rowe, "Single Sex and Mixed Sex Classes: The Effects of Class Type on Student Achievement, Confidence, and Participation in Mathematics," *Australian Journal of Education*, vol. 32, no- 2 (1988), pp. 189-202.
 99. Gilah Leder and Helen Forgasz, "Single-Sex Mathematics Classes in a Coeducational Setting: A Case Study," paper presented at the 1994 American Educational Research Association Annual Meeting, New Orleans, La. (ERIC Document 372 946).
 100. Roslyn Arlin Mickelson, "Why Does Jane Read and Write So Well?: The Anomaly of Women's Achievement:" *Sociology of Education*, vol. 62 (1989), pp. 47—63; and Jacquelynne Eccles, "Sex Differences in Achievement Patterns," in Theo B. Sonderegger, ed., *Psychology and Gender: Nebraska Symposium on Motivation 1984*, vol. 32 (University of Nebraska Press, 1984), pp. 97-132; and Judith Kleinfeld, "Student Performance: Males versus Females," *Public interest*, no. 134 (Winter 1998), pp. 3-20. For a general discussion of academic achievement and gender, see Diane S. Pollard, "Gender and Achievement," in Sari Knopp Biklen and Diane Pollard, eds, *Gender and Education*, 92d yearbook of the National Society for the Study of Education, part I (University of Chicago Press, 1993).
 101. Kleinfeld, "Student Performance," pp. 1-20.
 102. American Association of University Women Educational Foundation, *Gender Gaps: Where Schools Still Fail Our Children* (Washington, October 1998).
 103. National Center for Education Statistics, *NAEP 1994 Reading Report Card for the Nation and the States* (Washington, January 1996), p. 137, table C.5A.
 104. Nancy S. Cole, *The ETS Gender Study: How Females and Males Perform in Educational Settings* (Princeton, N.J.: Educational Testing Service, May 1997), p. 12, figure 3.
 105. Cole, *The ETS Gender Study*, p. 15, figure 5.
 106. *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates, Revised* (U.S. Department of Education, Office of Educational Research and Improvement, September 1998), tables 35, 62.
 107. National Center for Education Statistics, *NAEP 1996 Mathematics Report Card for the Nation and the States* (Washington, February 1997), p 31, table 24.
 108. National Center for Education Statistics, *NAEP 1996 Science: Report Card for the Nation and the States* (Washington, May 1997), p. 29, table 23.
 109. *1998 College Bound Seniors: A Profile of SAT Program Test Takers* (New York: College Board, 1998), p. 9, table 6.
 110. Cole, *The ETS Gender Study*, pp. 18-19, figure 7.
 111. *1998 Advanced Placement National Summary Reports* (New York: College Board,

1998), pp. 5, 7.

112. Patricia Lynn Casserly, "Helping Able Young Women Take Math and Science Seriously in School," in Nicholas Colangelo and Ronald T. Zafranri, eds., *New Voices in Counseling the Gifted* (Dubuque, Iowa: Kendall/Hunt, 1979). See also Marlaine E. Lockheed, "Women, Girls, and Computers: A First Look at the Evidence," *Sex Roles*, vol. 13. nos. 3 and 4 (1985), pp. 115-22; Pamela E. Kramer and Sheila Lehman, "Mismeasuring Women: A Critique of Research on Computer Ability and Avoidance," *Signs: Journal of Women in Culture and Society*, vol. 16 no. 1 (Autumn 1990); Joan N. Burstyn, "Who Benefits and Who Suffers': Gender and Education at the Dawn of the Age of Information Technology," in Sari Knopp Biklen and Diane Pollard, eds., *Gender and Education*, 92d yearbook of the National Society for the Study of Education, part I (University of Chicago Press, 1993), pp. 107-25.

113. *Thirty-first Annual Survey of College First-Year Students* (University of California at Los Angeles 1998).

114. Jacquelynne A. Eccles "Understanding Women's Educational and Occupational Choices," *Psychology of Women Quarterly*, vol. 18 (1994), pp. 585.

115. Claude M. Steele, "Race and the Schooling of Black Americans," *Atlantic Monthly* (April 1992), pp. 68-78.

116. Richard A. Durost, "Single Sex Math Classes: What and for Whom? One School's Experiences," *Bulletin* (February 1996), pp. 27-31.

117. Jeff Archer "Private Coed Schools Find Benefits in Single-Sex Classes," *Education Week*, April 8, 1998, p. 6 (statement of Eileen Lambert, head of Middle School, Rippowam Cisca School, Bedford, N.Y.).

118. Mary Ann Zehr, "Computer Classes Aren't Just for Boys Anymore," *Education Week*, January 21 1998, pp. 1, 17.

119. Lee and Bryk, "Effects of Single-Sex Secondary Schools on Student Achievement and Attitudes," pp. 381-93.

120. Valerie E. Lee and Helen M. Marks, "Sustained Effects of the Single-Sex Secondary School Experience on Attitudes, Behaviors, and Values in College," *Journal of Educational Psychology*, vol. 82. no. 3 (1990), pp. 578-92.

121. Valerie E. Lee and Helen M. Marks, "Who Goes Where? Choice of Single-Sex and Coeducational Independent Secondary Schools," *Sociology of Education*, vol. 65 (July 1992), pp. 226-53.

122. Valerie E. Lee, "Is Single-Sex Secondary Schooling a Solution to the Problem of Gender Inequity?" in American Association of University Women Educational Foundation, *Separated by Sex: A Critical Look at Single-Sex Education for Girls* (Washington, March 1998), p. 45.

123. Riordan, *Girls and Boys in School*.

124. James S. Coleman and others, *Equality of Educational Opportunity* (Government Printing Office, 1966); Barbara Heynes, *Summer Learning and the Effects of Schooling* (New York: Academic Press, 1978); Andrew M. Greeley, *Catholic High Schools and Minority Students* (New Brunswick, N.J.: Transaction Books, 1982); and Thomas Hoffer, Andrew M. Greeley, and James Coleman, "Achievement Growth in Public and Catholic Schools," *Sociology of Education*, vol. 58 (April 1985), pp. 74-97.

125. Paul C. LePore and John Robert Warren, "A Comparison of Single-Sex and Coeducational Catholic Secondary Schooling: Evidence from the National Educational Longitudinal Study of 1988," *American Educational Research Journal*, vol. 34 (1997), pp. 485-511.

126. Cornelius Riordan, "The Future of Single-Sex Schools," in American Association of University Women Educational Foundation, *Separated by Sex: A Critical Look at Single-Sex Education for Girls* (Washington. March 1998).

127. David R Baker, Cornelius Riordan, and Maryellen Schaub, "The Effects of Sex-Grouped Schooling on Achievement: The Role of National Context," *Comparative*

- Education Review, vol. 29, no. 4 (1995), pp. 468-82.
128. "Child Poverty and Race in the Nation's cities," *Quality Counts '98: The Urban Challenge*, a special edition of Education Week, January 8, 1998, pp. 62-63.
129. Steele, "Race and the Schooling of Black Americans."
130. National Center for Education Statistics, *NAEP 1996 Trends in Academic Progress* (Washington, 1997), pp. 113-14, figure 5.4.
131. National Center for Education Statistics, *NAEP 1996 Mathematics Report Card for the Nation and the States*, p. 33, table 2.5.
132. National Center for Education Statistics, *NAEP 1996 Mathematics Report Card for the Nation and the States*, p. 55, table 3.5.
133. "The Achievement Gap," *Quality Counts '98: The Urban Challenge*, a special edition of Education Week, January 8, 1998, pp. 10-12.
134. Gilligan, *In a Different Voice*; M. F. Belensky and others, *Women's Way of Knowing* (Basic Books, 1986); and American Association of University Women, *How Schools Shortchange Girls*, commissioned and researched by Susan Bailey (Wellesley College, Center for Research on Women, 1992).
135. For a legal exposition, see Rosemary C. Salomone, "All Girls School for Spanish Harlem," *New York Law Journal*, vol. 5 (August 1996), p. 2; Denise C. Morgan. "Finding a Constitutionally Permissible Path to Sex Equality: The Young Women's Leadership School of East Harlem," *New York Law School Journal of Human Rights*, vol. 14 (1998), pp. 107-38; and Jance L. Streitmatter, *For Girls Only: Making a Case for Single-Sex Schooling* (State University of New York Press, 1999).
136. See U.S. General Accounting Office, *Public Education: Issues Involving Single Gender Schools and Programs*, GAO/HEHS-96-122 (Health, Education, and Human Services Division, 1996); and U.S. Department of Education, *Single Sex Schooling: Perspectives from Practice and Research*, vol. 1 (Office of Educational Research and Improvement, 1992).
137. National Women's Law Center, *Single-Sex Education after the VMI Decision* (Washington, October 1996).
138. U.S. Department of Education, *Single Sex Schooling*, p. 42.
139. For a full review of studies, see Cornelius Riordan, *Equality and Achievement: An Introduction to the Sociology of Education* (Addison Wesley Longman, 1997).
140. Valerie F. Lee, "Gender Equity and the Organization of Schools," in Barbara J. Bank and Peter M. Hall, eds., *Gender, Equity, and Schooling* (New York: Garland Publishing, 1997).
141. Lee, "Gender Equity and the Organization of Schools."
142. Valerie E. Lee, Xianglei Chan, and Becky A. Smerdon, "The Influence of School Climate on Gender Differences in Achievement and Engagement of Young Adolescents," paper commissioned by the American Association of University Women, 1995.
143. Lee, Chan, and Smerdon, "The Influence of School Climate on Gender Differences in Achievement and Engagement of Young Adolescents."
144. Rosemary C. Salomone, "Rich Girls, Poor Girls, and the Perils of Ideology," address prepared for the 1996 Annual Leadership Conference Chapter of the American Association of University Women, Wesleyan University.