GIRLS IN EDUCATION: A GLIMPSE INTO COEDUCATIONAL AND SINGLE-SEX SCHOOLS IN AMERICA

by

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(Under the Direction of Mark Faust)

ABSTRACT

This paper explores the impact of coeducational and single-sex schools on girls and the subsequent affectation. Young women deal with a constant barrage of societal constraints that are often mimicked or enhanced in school settings. Single-sex schools have recently been receiving attention for both their academics and their capacity to help girls to reanalyze the stereotypical role of females in American society. This paper explores the ways that girls are currently treated in American society in both coeducational and single-sex schools. In addition, there will be an exploration of the methods in which academic performance and self esteem of females are addressed in both types of schools.

INDEX WORDS: Single-Sex Education, Female Education, Self-Esteem, Coeducation

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CHAPTER I

INTRODUCTION

The silence of girls in education is astounding and widespread. According to the book, *Failing at Fairness: How Our Schools Cheat Girls* by David and Myra Sadker (1994), girls are seen as "second-class educational citizens" (p. 1). They explain that in all stages of education, "female students are more likely to be invisible members of classrooms" (p. 1). In addition, Elizabeth A. Flynn (1988) explains that "silent women have little awareness of their intellectual capacities. They live--selfless and voiceless--at the behest of those around them" (p. 427). Whether intentional or unintentional, the voices of women in American culture are silenced the older they get. Sadker & Sadker (1994) found that "in coeducational classes, college women are even less likely to participate in discussions than elementary and secondary school girls" and that "in the typical college classroom, 45 percent of students do not speak; the majority of these voiceless students are women" (p.10). Peggy Orenstein (1994) explains that "girls who are white and middle- or upper-middle-class, are those most likely to receive the conflicting messages of silence and assertiveness at home, at school, from boys" (pgs. 92-93). The domination of girls begins at a young age and can continue for a lifetime if unaddressed.

These glaring statistics make one question why certain segments of the population are silenced and other populations are privileged. bell hooks (1989) explains that "within patriarchal society, silence has been for women a gesture of submission and complicity… silence is evoked as a signifier, a marker of exploitation, oppression, dehumanization" (p. 128). She views silence as the "condition of one who has been dominated" and feels that the only way to be freed from

domination is through talk (p.128-29). Such talk can and should take place within schools. If parents and educators make a concerted effort to recognize and address the gendering of children, perhaps a more democratic classroom will emerge. By understanding the current miseducation of girls in many facets of schooling, perhaps educators and parents can begin to help females actualize their potential.

Research indicates that many coeducational schools create and perpetuate the social construction of gender. One common thread in these schools seems to be issues of the silencing of girls. Teachers generally give more attention to male students. According to *How Schools Shortchange Girls* (1992), in preschool classes "boys receive more instructional time, more hugs, and more teacher attention" than girls (p.118). The authors explain that this pattern continues throughout schooling. This silence causes girls to be ignored or exploited; instead of girls becoming more confident through education, they are learning to further give away their power and independence to their male classmates.

Although there is disagreement about the overall impact and effectiveness of single-sex education, many of its tenets have proven positive for females and may, in fact, be adapted to a coeducational environment. According to the study *Separated by Sex: A Critical Look at Single-Sex Education for Girls* (1998), there is a "need to explore whether what has been learned about education in a single-sex environment can be applied to improve coeducation" (p. 9). For these reasons, it is prudent to examine what is happening to girls in coeducational institutions, what is happening to girls in single-sex environments, and how the educational experience of females can change by awareness of the disparities between the education of male and female students. The purpose of this study is to review the literature available on the treatment of girls in American society, in coeducational schools, and in single-sex schools. By creating an awareness

of what happens to girls in various arenas, parents and teachers can begin to help those girls who are being underserved on an academic level, a personal level, or both.

CHAPTER TWO

THE FEMALE EXPERIENCE IN AMERICA

Unfortunately, a plethora of American women are subjected to the loss of self-esteem through media influence and cultural stereotypes. Women rarely make the same amount of money as men for the same work. In fact, women rarely venture into careers that have been traditionally viewed as a male oriented line of work. Sexual harassment is not uncommon and violence toward women occurs on a daily basis. Although changing the treatment of females in schools will not fix the ills toward women in the larger society, perhaps the introduction and discussion of these topics by both males and females in schools can help create a greater awareness of such matters. By drawing attention to how females are treated in the larger society, perhaps students can learn how to recognize gender inequities.

The decline of self-esteem in females seems to begin in the middle school years. According to *How Schools Shortchange Girls* (1992), "on average 69 percent of elementary school boys and 60 percents of elementary school girls reported that they were 'happy the way I am'; among high school students the percentages were 46 percent for boys and only 29 percent for girls" (p. 19). The reasons given for such a sharp decline in self-esteem include negative body issues and depression. These findings are reiterated by Pamela Haag (1999) who conducted an AAUW study of about 2,100 girls. When she asked the girls to identify the most important issues or struggles facing them today, 104 of the participants expressed worry about "image and appearance." In addition, 54 cited low self-esteem as a concern and 42 mentioned that weight and staying thin was important (p. 9). In addition, according to studies mentioned in a 1992 report by the American Association of University Women (AAUW), the ambitions of

first grade boys and girls are comparable; however, by high school graduation, girls have disproportionately less confidence in their academic ability than do boys. Yet, females perform at a higher level than boys do. Something happens to many females in middle or high school that causes them to become less confident. The self-esteem of women continues to drop as more barriers arise through a plethora of mediums such as media influence or the stress of breaking into traditionally male-dominated careers.

It should come as no surprise that popular culture has influence in the lives of Americans. However as Naomi Wolf (1991) describes, advertisers influence American women so greatly that the females feel "bad enough about their faces and bodies to spend more money on worthless or pain-inducing products than they would if they felt innately beautiful" (p. 84). Americans are inundated with images in magazines, television, and Internet of what a women is supposed to look like and how she is supposed to act. Girls have constant examples in magazines and on TV of how to act and dress to attain popularity. Walker & Mehr (1992) stress that if an adolescent girl begins to dilute her achievements in order to gain popularity; she is insulting her self-esteem on a daily basis and practicing self-betrayal. They argue that the moment a gifted girl gives up her authentic feelings, her ability to achieve is blocked. Julianne Jacob Ryan (1999) extends the concept of authentic feelings to a concept of true self. By the time the adolescent reaches adulthood, she has successfully obliterated her true self by wishing to fit in with the crowd. This lack of true self can lead to depression, lowered self-worth, feelings of hopelessness, and a feeling of loss.

According Wolf's (1991) book *The Beauty Myth: How Images are Used Against Women,* as more job options and other opportunities for women have become more open, the female population becomes a perceived threat "to destabilize…institutions on which a male-dominated

culture has depended" (p. 17). Therefore, Wolf concludes that many of the accomplishments of feminism (such as teaching women to place a higher value on themselves), are being undermined by making women feel "impoverished, out of control, foolish, and sexually insecure" in their bodies (p. 197). Domination of females exists, in part, by the creation of the paradigm of either the intelligent woman or the beautiful woman. In our culture, many females often make a choice to either be beautiful and to not have their minds taken seriously or to be smart and to not be considered attractive. So how can a female escape being placed in a category? Or can she? Many women therefore try to be everything to everyone, a superwoman of sorts. Not only are women supposed to compete like men, but they are also expected to remain feminine. Women are taught that they should want to be beautiful, to be good mothers, to be good wives, and to be smart and charming. Many females are told that they can be whatever they want in life as long as they are quiet and well-mannered at the same time. Unfortunately, many girls often learn at an early age that they are judged by their appearance and not their mental capacity.

As females complete their formal schooling and enter the workforce, they may feel that a world of opportunity is open to them. However, these women might find that certain doors may be closed to them. Another American Association of University Women report, *Signposts: A Guide to Creating Gender-Fair School*, indicates that women are clustered in only 20 of the more than 400 job categories identified by the United States Department of Labor. Most of these job categories consistently pay less than those jobs that are considered to be "men's jobs" (p.18). In addition, the report indicates that "women high school graduates working year-round full-time still earn less than men with no high school diploma" (p.18). In fact, households that are headed by women are among America's most poor (Sadker & Sadker, 1994). Even women who have gone beyond a high school diploma find their earning power trailing far behind men. Wolf

(1991) cites a 1987 U.S. Chamber of Commerce report that found that corporate women, vice presidents and above, earn 42 percent less than male peers. However, according to *How Schools Shortchange Girls* (1992), the data show that wage differentials favoring men are substantially less for women in their early thirties who have earned eight or more mathematics credits in college.

Women earn one-third of all science doctorates and are still severely underrepresented in their fields (Ripley, 2005). It is encouraging that more women are entering mathematic and science-based careers, but attitudes are often slower to change. According to an article in *Time Magazine*, Harvard University President Larry Summers made a statement in January 2005 that explained his ideas as to why a gender gap exists among top tiered science professors (Ripley, 2005). He explained the reason for fewer tenured female science professors than male professors as follows:

1) *women are just not so interested as men in making the sacrifices required by high-powered jobs*
2) *men may have more intrinsic aptitude for high-level sciences and*
3) *women may be victims of old-fashioned discrimination (p.51).*

To add more insult to injury, Summers' continued his diatribe by saying that "In my own view, their importance probably ranks in exactly the order that I just described" (Ripley, 2005, p. 51). He makes sure to insult the desire, motivation, and intelligence of women before considering that perhaps women are simply overlooked for tenure due to discrimination. Fortunately, Summers' insensitive comments have created some positive consequences. CNN.com (2005) reports that although Harvard was aware that women received just four of 32 tenure offers last year, Summers' comments created a massive demand for changes in gender inequities at Harvard

University. Not only has Summers' increased public awareness of fewer tenured science professors, but Harvard University recently pledged to spend $50 million over the next decade to gender initiatives (CNN.com, 2005). It is unfortunate that it took such negative comments about women to promote needed changes. Summers' explained the main reason for spending the $50 million to change the "gender culture" on campus because "universities like Harvard were designed a long time ago, in many respects, by men and for men" (OnlineAthens.com, 2005). This comment explains many of the problems with coeducation; many schools were created a long time ago, by men and for males. Girls are expected to compete like boys in school, but they should do so quietly. Girls are praised for their silence and "good behavior." The messages are confusing and become more confusing as the girl gets older.

This brief glimpse of some of the issues that affect women in America helps to explain what is happening in schools. Although some educational institutions ignore what is happening in the broader culture, it seems prudent to recognize that the two environments do not exist in isolation from each other. By understanding what happens in different educational settings, educators and parents may begin to assist female students who have to deal with difficult situations both at school and in their personal lives. Educators who care about the well-being of all students can have a positive impact.

CHAPTER THREE

FEMALES IN COEDUCATIONAL SCHOOLS

How are girls faring in coeducational schools?

Some argue that females are treated fairly in coeducational schools and that there is little reason to change the way girls are taught. It is true that girls make better grades, have higher educational and career expectations, and have higher reading and writing test scores (Riordan, 1998). On the surface, it would appear that girls are faring well in coeducational school. However, the older females get, the lower their self-esteem becomes. Patricia O'Reilly (2001) explains that "girls reach puberty before boys, and the changes in their bodies are often problematic for them if parents and teachers do not provide support to help them adjust to this change process" (p. 16). Grades and test scores especially begin to drop around the middle school years. O'Reilly (2001) further explains that "schools reinforce societal stereotypes of gender behavior" so girls learn very early to be submissive and silent (p. 18). Girls receive less attention from teachers than boys throughout their educational career. Boys receive more direct feedback from teachers and are found to be praised and criticized more by teachers than are girls (Kloosterman & Suranna, 2003). Therefore, males realize their strengths and weaknesses and receive guidance throughout their schooling and are given advice on how to reach their goals.

Girls begin to feel less important than their male peers by way of the media, at school, and often at home. It should come as no surprise that young girls become less assertive than their male peers. Why would a female's demeanor suddenly change when she enters high school, college, or the workforce?

When girls begin school, they are ahead of or equal to boys "on almost every standardized measure of achievement and psychological well-being" (Sadker & Sadker, 1994,

p.13). However, by the time that women graduate from high school or college, men have moved ahead and surpassed females with most test scores, self-esteem, and career expectations. Many coeducational schools are mirroring societal stereotypes and are preparing females for a life of domination by a patriarchal society.

The treatment of females in American society is often reproduced in school environments. Little is done to teach students how to address or even identify issues or problems that deal with gender or sexuality. By not teaching students about gender constraints and possible roadblocks to success, some girls leave school ignorant to such societal problems. It seems that something is happening inside schools that give males an ultimate edge. What happens (or does not happen) in schools that causes a loss of self-esteem in girls? Why do more males have successful careers than women with the same credentials? How can educators teach students to have greater confidence and self-esteem?

One major concern in coeducational schools is sexual harassment. According to a study conducted by Pamela Haag (1999), "fully four out of five 8th to 11th graders surveyed (81 percent) report that they have been the target of sexual harassment" (p.23). The numbers include 85 percent of girls and 76 percent of boys saying that they have experienced sexual harassment. A shocking "two-thirds (66 percent) of all boys and more than half (52 percent) of all girls admit that they have sexually harassed someone" (Haag, 1999, p. 23). Sexual harassment can take many forms, from name-calling to inappropriate touching. Sexual harassment can cause a loss of self-esteem in students and makes study difficult. It is hard to concentrate on school and classes when a student has to worry about the sexual harassment that is taking place and especially if such harassment is being ignored by educators and administrators.

The feelings of invisibility of females can lead to serious consequences. According to *Signposts: A Guide to Creating Gender-Fair Schools* (1998), boys are more likely to repeat grades and drop out of school than are girls. However, the girls who do drop out of school are less likely than boys to return to complete school. The report stresses further concern for Hispanic girls. Research found that "30 percent of Hispanic females age 16-24 had dropped out of school and not yet passed a high school equivalency test" (*Signposts*, 1998, p.14). One of the contributing factors of the high drop out rate of Hispanic females is the rate of teen pregnancy. The Department of Human Resources reports that although the overall teen pregnancy rates in the state of Georgia have dropped by 41 percent among 15- to 17- year olds between 1994 and 2003, the pregnancy rate of Hispanic teenagers rose by nearly 62 percent (WXIA-TV, 2005). Drops in the pregnancy rates in Georgia are attributed to the "abstinence only" educational programs. However, *Signposts* (1998) argues that "most pregnancy prevention programs do not address the specific needs or build on the cultural strengths of Hispanic teens" (p. 14).

It seems logical that parents and educators would all wish for female students to succeed academically and to have a high self-esteem; girls somehow lose this self-confidence and do not regain it until mid-life. Sadker & Sadker (1994) explain that male students control classroom conversation and receive more praise for their ideas. Boys ask more questions and answer more questions than do girls. Boys receive more constructive criticism. A major area where girls receive more attention than boys is the acknowledgement of appearance. As a consequence, girls place great value on their appearance and learn to discount other traits such as intelligence or creativity. Girls learn to attribute their success to hard work, while boys attribute their success to ability (Sadker & Sadker, 1994; Walker & Mehr, 1992).

Deborah Stipek, Dean of Education at Stanford University, conducted research which indicates that "children have formed hard and fast beliefs about the subjects at which they excel and those in which they fail" by the age of twelve (Rawe, 2005, p.60). Haag (1999) cites research from Harvard that found positive stereotypes, such as "Asians are talented in math and science," boost academic performance, while negative stereotypes can hinder the performance of "stigmatized groups, such as women and African- and Hispanic-Americans" (p. 53). By middle school, a young girl may already believe that she is incapable of being a good mathematics or science student. It is rare for students to be familiar with female role models in the fields of mathematics or science. Without such models, female students have a hard time seeing themselves in such roles. Sadker & Sadker (1994) explain that even though girls are taking more math classes, "it is often a matter of endurance without enjoyment" (p.122). Sadker & Sadker (1994) think that the lack of confidence many girls have about their math ability is because they have trouble making the subject of mathematics relevant to their lives. Often, the math problems presented in classrooms deal with more traditionally male-oriented areas, such as sports. Young girls may also decide to opt out of the science classes that lead to relatively high paying jobs. Half as many girls as boys chose to take advanced placement tests in physics (Rawe 2005). Such classes are seen as subjects for male students.

John Allen Paulos (2005), a professor of mathematics at Temple University, explains that social conditions play an important role in the classes that female students choose to take and the subsequent career paths of women. He explains that biological factors may be a minute reason why females are underrepresented in mathematics and science fields, but the main factor is because women are socialized to think that they should have no interest in mathematics and science. Paulos (2005) further states that "there is some evidence that the abstraction of

mathematics poses more of a social challenge for women than it does a cognitive challenge" (p. 2). He feels that sex discrimination (both subtle and overt) is a serious problem that should be addressed. Paulos (2005) says that much more can be done to spark female interest much to study mathematics by making "pedagogy and applications more palatable and stress the beauty and utility of the subject as well as its algorithms and calculations" (p 3.).

Existing research causes one to further question the assertion by Harvard President Lawrence Summers that women have less intrinsic aptitude for science related careers. Ripley (2005) states that plenty of evidence exists that indicates that young women do excel in science when they are motivated and encouraged. She cites evidence from the 1800s when "physics, astronomy, chemistry and botany were considered gender-appropriate subjects for middle- and upper-class girls" (p. 59). In the mid 1800s, girls in top schools in Boston outperformed boys in physics. Currently high schools, girls take as many science classes as boys do and have roughly the same scores (*Under the Microscope*, 2004). By college, women are earning more than half of the bachelor's degrees in biological sciences. However, they earn only about 21 percent of all bachelor's degrees in physics (*Under the Microscope*, 2004). Perhaps girls feel that physics is a male subject, while the biological sciences are appropriate for females.

The academic performances of girls in other countries may help to prove that American culture has a greater impact on performance in mathematics than do genetics. Girls in Iceland significantly outscore boys in math. Walt (2005) explains that girls have a national advantage of 15 points. In some small fishing villages the advantage was closer to 30 points (Walt 2005). However, the teachers in one such fishing town, Sandgerdi, say the math scores have nothing to do with talent but are a case of simple motivation. The educators feel that "boys suffer through school until they begin fishing careers; girls find that careers in math are their tickets out of

town" (Walt, 2005, p. 57). Some of the same attitudes exist in Iceland that exist in America: girls do not have innate mathematical talent. If a female succeeds, she is merely working harder than her male counterparts. Throughout the literature, researchers continually say that the success of girls is attributed to their hard work, while boys have natural aptitude (Sadker & Sadker, 1994; Walker & Mehr, 1992).

More talk has recently emerged by researchers who are interested in how schools shortchange boys. The experience of boys in coeducational schools should not be discounted, but neither should the experiences of girls. The American Association of University Women do agree that boys also have "unmet educational needs and that sex stereotyping of males can constrain boys' futures" (*Signposts*, 1998, p. 20). Boys are harassed about sexual identity and are given stereotyped career information. The goal of those trying to enhance the educational experiences of girls do not wish to do so at the expense of boys. Generally females receive better grades from kindergarten to college, but do not often reap the levels of success attained by men in careers.

CHAPTER FOUR

THE (MIS)EDUCATION OF SPECIAL POPULATIONS OF FEMALES

Special Education

Girls are less likely than boys to receive special education services. Even though studies show girls may need special education services as badly as boys do, girls seem to go unnoticed (Bauer, 2001; Sadker & Sadker, 1994). Sadker & Sadker (1994) cite a study in which "researchers analyzed standardized test scores in a large sample of students and found only slightly more boys than girls with reading problems" (p. 118). However, when it came time to choose the samples from the study that would receive special reading instruction, boys were chosen two to four times more often than girls. Unfortunately, many boys are being referred to special education because they are seen as behavior problems that interrupt the flow of the regular classroom. Many of the quiet boys and girls who actually do need special education services are ignored even if they might be functioning at a lower level than the males who are referred for special education services.

Michael Gurian & Patricia Henley (2001) seem to see a problem with the way boys are taught in special education classes. Instead of seeing a problem with having "five girls enrolled [in special education] and over fifty boys," they recommend that "along with other innovations, special education must now focus on questions of masculinity…in order to fully progress to the next level of assisting young people" (p.248). Gurian & Henley (2001) do not think that the disproportionate number of males in special education is a problem; they merely want to enhance the experience for the male students in these classes.

When females are actually identified as needed special education services, they still might not be receiving the needed services. According to Anne M. Bauer (2001), "special

educators do not seem as successful in fostering independence in girls with disabilities as boys" (p. 31). She explains that many of the special education programs emphasizing self-determination are geared more toward helping males than helping females. Female students in the special education classroom are largely ignored and become invisible members in school and society (Bauer, 2001).

Gifted Education

Sadker & Sadker (1994) state that smart boys flourish in school. The students who are the least likely to be recognized are smart girls. Traditionally, females have tended to get higher grades in school; however a recent study at the University of Illinois at Urbana-Champaign shows that girls (in fourth through sixth grade) experience more inner turmoil than do boys of the same age. Girls often worry, feel anxious, and have depression despite their academic success (Barlow 2002). In addition, stereotypes of femininity often conflict with the vocal, assertive, and intelligent female; gifted females in middle and high school just want to be normal and often hide their gifts (Kerr, 1994; Nelson & Smith, 2001; Reis, 1998; Ryan, 1999). Although such stereotypes may be a fault of society, schools have valuable opportunities to address such faults and to help students question the broader society.

Another major concern for gifted females is not their abilities but in their educational experience and subsequent outcomes. The disparity between the potential for success and actualizing goals seems to be a common thread in the lives of many gifted women. In Lewis Terman's longitudinal study of gifted children, he found that females equaled or excelled men in academics from the first grade through college. However in later life, females failed to live up to the researchers' expectations; in their jobs, the males attained a level of achievement consistent with their abilities. Terman explained this discrepancy in 1925 by saying that the missing

excellence in women was because of a "lack of motivation and opportunity" (Walker & Mehr, 1992). Instead of pursuing a professional career, the occupation of these gifted women was often raising a family. Although this study was conducted in 1925 when women had fewer career options, females often have to make choices about career versus family.

Generally, gifted girls (up to about 10 years of age) seem to have interests more like gifted boys than average females. However, these girls often maintain the behavior of average girls so that they are not seen as being different. Terman's study found that young, gifted girls prove to have more leadership ability than average girls. However Kerr (1994) found that *highly* gifted girls tend to be loners, have little need for recognition, and do not seem as well-adjusted as other categories of gifted girls. The gifted girl is generally a people pleaser, however, the brighter the girl the less likely she is to attempt to please (Kerr, 1994).

Gifted girls often begin talking, reading, and counting earlier than do boys. Kloosterman & Suranna (2003) explain that between the ages of 3 and 5, girls are "more likely than boys to demonstrate literacy and small-motor skill such as writing their names or holding a pencil" (p. 100). They explain that male and female gifted and talented students in elementary school are found in equal numbers. Until approximately the 5th grade, young girls actually have better grades and have higher standardized test scores than boys do. However, by the 5th grade, boys begin to outperform girls in math and science (Kloosterman & Suranna, 2003).

The adolescent years are when the gifted female may experience a sharp decline in self-esteem. In *Shortchanging Girls, Shortchanging America* (1991), researchers found that as girls get older their self-esteem drops dramatically. In elementary school, 60% of girls said that they were happy with themselves; in middle school, 37% were still happy; only 29% of female high school students were happy with themselves. As a result of the lack of self esteem, many gifted

adolescents have difficulty believing in their high intelligence and abilities. Throughout the literature, adolescent gifted girls and gifted women seem to fail to recognize their intelligence (Kerr, 1994; Kloosterman & Suranna, 2003; Walker & Mehr, 1992). Furthermore, societal pressures and stereotypes are thought to create internal barriers in gifted girls. Gifted females begin to lose their self-confidence in elementary school and continue to do so as they progress in their education.

As they get older, gifted women feel that they were gifted when they were younger and somehow lost their gifts or that they were misidentified for gifted programs. Many older gifted women have regrets about marrying too young and not going to college despite having high potential (Reis, 1998). In the group of "intellectually superior" women that Betty A. Walker and Marilyn Mehr (1992) studied, almost every woman claimed that she was not *that* smart and was basically average. "Intellectually superior" means that these women had IQs that ranked them in the top 2 percent of the population. However, these women convinced themselves that they were in no way special. Most gifted women are 50 years old before they come to an understanding of self and a belief in their ability to accomplish their goals (Reis, 2003). Although these women finally attain confidence, over half of their lives are spent in disbelief of their abilities. Perhaps society creates the loss of self-esteem, but parents and teachers can assist girls in having a greater self-efficacy.

Some gifted women neglect to achieve their goals due to what is called the "Cinderella Complex" (Reis, 1998). The complex is created when a young woman defers her hopes and dreams when she falls in love with her "Prince Charming." Often, gifted women who have a fear of success, combined with a desire to be taken care of, create a psychological dependency. She supports her partner's dreams instead of her own. An important predictor of achievement in

gifted women is the age at time of marriage. Those who marry at a younger age are less likely to achieve their goals (Kerr, 1994; Reis, 1998). Girls who are equipped with such knowledge may decide to delay relationships to attain further schooling or to advance a career.

Although some gifted and adolescent girls are competitive and want to lead successful lives, the gifted girl oftentimes seems to value her personal achievements less as she grows older. Sally Morgan Reis (1998) says that gifted girls often have a negative perception of being identified as bright or talented. Gifted girls think that being gifted is a social disadvantage because of the negative reactions of peers; they fear being perceived as the unattractive smart girl, so they try to hide their intelligence by silencing themselves by not speaking in class. Females often display what is known as the "Horner effect" when they are competing with a male (Kerr, 1994; Reis, 1998). Matina Horner saw a trend in the behavior of women when they competed with men in simple activities such as memorization. She found that these women underachieved. Even though the women were highly gifted, they would perform below their skill level and were unable to explain why (Kerr 1994). Were the women simply "playing dumb" or were they subconsciously perpetuating the favorable stereotypes of society?

Gifted females often strive for perfection and not necessarily in a healthy manner. Gifted adolescents become frightened that they might not live up to idealized expectations and withdraw from tasks that might expose imperfections (Walker & Mehr, 1992). Girls, more often than boys, try to please their parents. The gifted female subsequently internalizes a fear of failure and has a tendency to avoid the harder classes, particularly mathematics and science. There are exceptions to this tendency; Asian American females score higher than Asian American males on math tests and African American females do not have a fear of success in regard to mathematics (Reis, 1998). However, gifted females as a whole are still

overrepresented in education and literature-associated occupations and underrepresented in the science, mathematics, and engineering realms (Nelson & Smith, 2001). Culturally, math and science are seen as masculine endeavors by some educators, parents, and students. As a result, gifted boys attain higher scores on achievement tests in the area of math, science, and social studies (Kerr, 1994). As of 1993, women constituted 22% of the science and engineering labor force in America and were 20% of doctoral engineers and scientists in the United States (Reis, 1998).

Leslie S. Rebhorn and Dorothy D. Miles (1999) found that gifted middle school females scored approximately 30 points lower than gifted boys on the mathematics section of the Scholastic Assessment Test (SAT-M) in 1999. They explain that the SAT-M is often used to identify gifted children for high-level mathematics and science programs that produce student outcomes such as increasing self esteem, providing better educational preparation, and offering network experience with professors. If the SAT-M is the only factor for admission to such programs, boys will continue to dominate the math and science fields. Although there is a difference in scores in gifted males and gifted females, research does not indicate that biological differences cause the disparity in scores; it appears that gifted girls internalize the stereotype that boys are better in math. Because girls are taught to believe that they are not up to par in mathematics, gifted high school females generally choose less challenging courses. Science classes seem to follow the same pattern; a study by Tobin and Garnett in 1997 found that boys conducted 79% of the science classroom demonstrations (Reis, 2001).

CHAPTER FIVE

SINGLE-SEX EDUCATION

What does research say about single-sex education?

Much like coeducational schools, some single-sex schools are more effective than others. However, studies conducted in Westernized societies have found that single-sex education has a positive impact on girls and decrease sex role stereotyping (Mensinger, 2001). Researcher Baroness Pauline Perry (2000) concludes that "women and girls do perform more confidently when they work in single sex environments" (p. 6). Perry believes that this confidence allows females to "be successful in subjects which can all too easily be considered male territory" (p. 6).

Some researchers debate the extent of the effectiveness and the need for single-sex education (*Separated by Sex*, 1998). Some feel that male and female students need to learn to work together in educational environments and that separate schools will eliminate such exposure. Although the effectiveness is debated, one point that seems to be agreed upon is that more in depth investigation of single-sex education is needed. It seems that most researchers do see positive aspects of single-sex education for the female population of students, but they are unsure about the widespread or long-term impact for all students. Currently, little is known about the long-term effects of single-sex education and more data are needed. Unfortunately, many scholars argue that there have not been enough studies that look into the long-term effects of the impact of single-sex education (*Separated by Sex*, 1998).

According to one American Association of University Women publication, few single-sex programs exist in public schools in America, which "means researchers have a narrower set of data to draw from in trying to determine whether single-sex education 'works' in the United States and for whom" (*Separated by Sex*, 1998, p.3). It appears that many of the studies that

discount single-sex education end up comparing test scores and classroom grades for girls in coeducational and single-sex settings and focus little on the confidence levels of the students (Campbell & Wahl, 1998). Oftentimes, measures of confidence levels and self-esteem in girls are ignored or overlooked. The researchers who are only interested in grades and test scores show that they misunderstand a good portion of the single-sex debate; the concern is that many girls are not achieving to the level of their abilities. Instead of being a debate just about grades and test scores, researchers should become more invested in the female experience in school.

Gaell Hildebrand (1996), who conducted research in Australian schools, is one researcher who is skeptical of single-sex initiatives and fears that such measures merely give the appearance that schools are attempting to do something about gender equality "without [changing] any of the…ways that gender is socially constructed in schools" (Haag, 1998, p.17). Hildebrand makes a valid point, but researchers can still learn valuable information from single-sex schools and how girls are treated differently (and effectively) without actually implementing single-sex classrooms into coeducational schools. What is happening in single-sex schools that often creates higher levels of self-esteem and self-efficacy? Perhaps the key to increasing the concept that a girl has about herself is found in what female single-sex schools are doing to promote a greater self-worth in its students.

Those who praise single-sex education seem to be more interested in the impact such schools have on self-esteem and confidence (Kerr, 1994; Riordan, 1998; Sadker & Sadker, 1994). Haag (1998) explains that girls "perceive single-sex classrooms to be superior" and that such perceptions may also "register gains in confidence" (p.22). However, she further states that "these benefits have not translated into measured improvements in achievement" (Haag, 1998, p.22). However, to ensure that females receive an equitable and encouraging education, Kerr

(1994) urges parents to consider placing their daughter(s) in all-female schooling for high school and college. Although the enrollment for women's colleges has "declined dramatically" in recent years, these institutions produce more female scholars and leaders than do coeducational schools (Kerr, 1994; Sadker & Sadker, 1994).

Gains in self-confidence might not immediately translate into improvements in academic achievement, but academic achievement is not always *the* predominant issue affecting the school lives of girls. Girls generally get better grades in school than do boys (*How Schools Shortchange Girls*, 1992; Riordan, 1998; Sadker & Sadker, 1994). However, as mentioned above, girls do not enjoy the same treatment or levels of success in careers that males do. Perhaps researchers should rethink their questions about what makes a school "good." Instead of measuring the academic performance of girls, perhaps the focus should be on both the academic process for all students and the subsequent outcomes of schooling. Instead of focusing only on the grades of female students, it makes more sense to also conduct long-term studies that look at ultimate outcomes. It may be quite helpful to learn which girls lack confidence and why the fear of failure in female students often continues well into adulthood. Why do some girls lack self-efficacy, while others do not? The lack of confidence in trying new things keeps many females from reaching the same level of success as their male peers.

Females need encouragement and need to know that the lack of their voice is detrimental to their success in the classroom environment. Jan Stretmatter, a researcher with the University of Alabama, recorded that females in single-sex classes had produced a "safe environment" in which the girls were willing to take risks that they were unwilling to take in classes where boys were present (*Separated by Sex*, 1998). In addition, Lee (1998) explains that Catholic girls' school students rated the quality of instruction in their schools higher than did girls in

coeducational schools. In field work conducted by Lee and her colleagues, they "observed more incidents of gender equity in independent girls' school classrooms (particularly by male teachers) than in either coed or boys' independent schools" (Lee, 1998, p.49). Research also shows that girls in single-sex programs with a feminist orientation appear to perform better in their careers than females in similar programs that never overtly discuss questions of women's and men's relative status in society (*Separated by Sex*, 1998).

Haag (1998) explains that many studies that look at the subject preferences of students have concluded that girls' attitudes toward math and science are positive in single-sex environments. Such environments foster an attitude that "fields such as physics… [are] less masculine" (Haag, 1998, 18). Thus, girls in single-sex schooling are more likely to prefer science than females in coeducational schools. An astounding 80% of females in single-sex high schools take math classes for all four years. The national average is two years of math classes for girls in high school (Reis, 1998). According to *How Schools Shortchange Girls* (1992), researchers Elizabeth Fennema and Julie Sherman found a strong connection between math and science accomplishment and confidence. They found that during middle-school, a drop in girls' confidence in math skills comes before a decline in math achievement. Such information may be valuable for a parent or educator to know; students who show a decline in math confidence need extra encouragement.

The difference in the schools is often the treatment and value placed on girls. If a female is taught that her mind is valued and that she can learn, her outlook on the world has the possibility to change for the better. In research conducted by Haag in 1999, she found that the female participants in her study wanted the climates of coeducational schools to change. The girls wanted "teachers and counselors to do more to foster girls' identities as students and

successful learners--or help them navigate social currents in school" (Haag, 1999, p.57). Coeducational schools are not inherently bad for girls, but become that way when a female is ignored or is taught that it is okay to be coy and remain silent. Some of the female respondents in Haag's 1999 study feel that schools do not do what is necessary to address social issues, especially those involving gender roles. Her participants feel that coeducational schools and society in general attempt to confine gender roles. They see such views as stifling and "detrimental to their well-being in school as well as to the learning environment overall" (Haag, 1999, p.62). Some girls (4 percent) in the study suggest that single-sex classes might be a solution to confining gender roles. Some girls said that they feel that coeducational schools neglect *girls* specifically (Haag, 1999).

Riordan (1998) created a list of reasons for the effectiveness of single-sex schools and how they work for students. He explains that rationales about the effectiveness of single-sex education are "less applicable when the schools and the students are mostly from high socioeconomic backgrounds, and/or if single-sex schools are normative in the society of subculture" (p. 55-56). Basically, Riordan found that the more at risk the student, the greater the impact of single-sex education. Some of the most pertinent reasons listed as to the effectiveness of single-sex education for girls are as follows:

> *the provision of more successful role models; a reduction of gender differences in curriculum; a reduction of gender bias in teacher-student interaction; a reduction of gender stereotypes in peer interaction; and the provision of a greater number of leadership opportunities (p. 55-56).*

In hopes to help girls feel less neglected and to have greater academic success, some coeducational schools have created single-sex classrooms. Most of the single-sex classrooms

established in coeducational schools are mathematics, computer, and science courses. According to D.S. Pollard (1998), a researcher for the AAUW, single-sex classrooms in coeducational institutions were established as a vehicle to "enhance the academic achievement of girls" (p. 76). Pollard further explains that the establishment of such classrooms "was in large part a reaction to the realization that access to educational experiences via mixed-sex classes did not necessarily result in equity of educational opportunity" (p. 76).

Although it is unclear whether or not single-sex classrooms in coeducational schools are an overall positive move for all students, Pollard (1998) explains that some possible positive effects for girls seem to be taking place. First, research has shown that single-sex classrooms establish "comfortable places to learn and explore the world" (p. 82). Next, such classes allow females to think about issues such as "gender identity and the varieties of roles girls and women can consider in today's and tomorrow's society" (p. 82). Finally, Pollard (1998) explains that research indicates that girls in early adolescence may be greatly helped by single-sex classes. Girls seem to have a difficult time in the middle school years and single-sex education may give girls the attention that they need at this stage of development. However, the plethora of research conducted in regard to single-sex classrooms has been conducted in middle school settings. A need exists for more studies to be conducted in secondary and elementary settings.

Some proponents of single-sex education are focused on the differences between the brains of males and females. Ripley (2005) cites a 1999 study by Virginia Tech researcher Harriet Hanlon. Hanlon found that some areas of the brain mature faster in boys and that other areas mature faster in girls. Boys mature four to eight years earlier than girls in some of the regions involved in mechanical reasoning, visual targeting and spatial reasoning. Girls matured faster several years earlier in the parts of the brain that handle verbal fluency, handwriting and

recognizing faces. The differences may be due to connections between the two brain hemispheres. Women seem to have more connections and in certain regions, the brain is "more densely packed with neurons" (Ripley, 2005, p. 53). These differences seem to cause women to use *more parts* of their brain to accomplish certain tasks, while men use *more focused regions* of the brain (Ripley, 2005).

Leonard Sax, a physician and psychologist wrote the book *Why Gender Matters*, is a strong proponent of single-sex education. He thinks that coeducation schools are quite harmful because they teach males and females "as if their brains mature at the same time" (Ripley, 2005). Sax feels that if a child is forced to complete tasks before he/she is developmentally ready, that child will fail and have a life-long aversion to that particular subject (Ripley, 2005). He notes that there are gender differences in learning and that girls and boys better learn certain subjects at different developmental stages.

CHAPTER SIX

COEDUCATION AND SINGLE-SEX MESH

What can be learned from single-sex institutions?

Many of the stereotypes and societal views of women have the potential to be overwhelming for female students. However, many of those problems can be lessened or eliminated by methods implemented in many single-sex schools. As previously stated, single-sex education is not a quick fix for the problems found in some coeducational schools. In fact, single-sex education has its own troubles for females, such as high levels of stress and competition. However, in her research, Karen Stabiner (2002) investigated all-girl schools and had an initial response that girls in single-sex schools "seemed almost arrogant at first" (p. 2). Stabiner soon realized that the girls were not exhibiting arrogance, but confidence. She, like many of us, was so used to seeing girls who lack self-confidence, that it seemed strange to see young females who were comfortable with themselves. She was struck that the girls in these single-sex environments "felt no need to defer or compromise their opinions in the name of getting along" (Stabiner, 2002, p. 2).

Kloosterman & Suranna (2003) feel that "teachers at all levels must be discerning consumers of curriculum material that is often biased in language, content, or illustrations" (p. 107). Just as a teacher asks his/her students to be aware, the teacher must also be constantly aware of what is being taught and why. Klooserman & Suranna (2003) ask that teachers constantly engage in reflection on their teaching. Teachers need to understand "the biases they bring to the classroom…[and] the language and material they use" (p. 107). Often, the students' views of the world begin or are perpetuated by that which is taught [or not taught] in the classroom.

Some of the gifted and talented women who made great strides are lauded by researchers of gifted females (Kerr 1994; Reis, 1998; Stabiner, 2002). By examining these women who excelled in their fields, researchers have documented patterns of behavior that helped the women to succeed. Some of the more familiar eminent women listed by the authors include Marie Curie, Eleanor Roosevelt, Georgia O'Keefe, Margaret Mead, Gertrude Stein, Katherine Hepburn, and Maya Angelou. Sadker & Sadker (1994) found that when children read about people in nontraditional gender roles, they are less likely to limit themselves to stereotypes. When children read about women and minorities in history, they are more likely to feel these groups have made important contributions to the country.

During the analysis process of eminent women, Kerr (1994) found ways in which women could increase their chances of being successful despite barriers to their success. If young girls are aware of what these barriers are and how other women have overcome them, it is more likely that these students will be able to hurdle barriers. She says that virtually all of the eminent women she studied ignored the "limitations of traditional sex roles" and refused to "acknowledge that a problem existed for them simply because of their gender" (Kerr, 1994, p.82). In addition, some of the eminent women had various characteristics that added to their success. These characteristics include: having time alone, engrossing themselves in reading, feeling different or special, receiving individualized instruction, having instruction in same-sex environments, having a difficult adolescence, holding off on relationships/marriage until goals are met, having mentors, having a strong sense of personal identity, taking responsibility for oneself, being able to integrate various roles (mothers, wives, companions), and having the ability to fall in love with an idea. Kerr (1994) cited the ability to fall in love with an idea as the single most important characteristic in eminent women. She defines "falling in love with an idea" as "a

lasting, often intense, absorbing, life-long interest that ultimately leads to an expansion of that idea or subject (Kerr, 1994, p.90). Educators and counselors should help guide girls throughout school and help females in their quest to fall in love with an idea.

With these successful women in mind, researchers hope to be able to help females attain their goals. However, many changes must be made by parents and educators in the way that they treat females. Many parents and elementary teachers often equate boys' performances to ability and girls' performances to effort. In other words, boys are inherently intelligent and girls work hard to do well in school (Kloosterman & Suranna, 2003). Also, the concept of failure is constructed differently by males and females. When a male fails, he generally looks at the people and circumstances around him and attaches blame on these external sources; when a woman fails, she generally blames herself (Walker & Mehr, 1992). Parents can create this problem, Reis (1998) says, when they stress traditional feminine qualities on their daughters. Some parents place an emphasis on their daughters to be quiet and mannerly, to dress attractively, and to refrain from speaking too often in public situations. Reis (2001) indicated that gifted girls often became frustrated because their parents would not buy them chemistry sets or construction sets as toys. Their parents felt that dolls were more appropriate for a girl. Researchers have argued that gender stereotyping in toys contributes to lower math and science scores for adolescent girls on achievement tests (Reis, 2001). In *How Schools Shortchange Girls*, researchers explained that the females that pursue scientific fields after high school say that they were greatly encouraged by their teachers. One study found that "girls who went on to study engineering felt that teachers encouraged them; unfortunately they also felt that counselors discouraged them" (*How Schools Shortchange Girls*, 45).

Walker & Mehr (1992) think that the repercussions for inadequate education in females does not manifest itself until adulthood. They think that the propensity for leadership skills and potential success lies in the childhood years; girls need help to be able to embrace their "own talents and abilities." Their recommendation is for young females to have someone in their life "who encourages them to take risks, to begin, even as children, to aim high, strive for honors and awards, and learn the skills of leadership" (Walker & Mehr, 1992, p.172). Walker & Mehr (1992) describe that there are life-long consequences for girls who do not see themselves in roles of leadership. Women are blocked from the top because they do not see themselves in leadership roles. Females are often ambivalent about jockeying for positions of power, which locks them out of the top jobs (Walker & Mehr, 1992).

Perhaps if issues of gender are more seriously considered by parents and educators, girls will have a more equitable educational experience. Males and females alike can benefit from lessons that take a serious look at gender and gender bias. The purpose of making the educational experiences of females better should not be at the expense of boys. However, boys often do not even realize that they have an advantage. Orenstein (1994) gives an example of a teacher who read the findings of *Shortchanging Girls, Shortchanging America* and consequently made a conscious effort to call equally on girls and boys. This teacher, Liz Muney, even used her attendance roster in class to ensure that she was doing so. The boys immediately started complaining that Ms. Muney was calling on girls more often than boys. She then told the young men that she was using a class roster to ensure equity; the boys still felt that they were suffering a huge loss (p. 27).

CHAPTER SEVEN

CONCLUSION

The educational system needs to make positive changes when it comes to the instruction and treatment of girls. As explained above, studies have shown that many girls suffer from the maladies of low self-esteem, disbelief in their abilities, fear of failure, little confidence in math and science skills, sexism, and negative gender stereotypes. Educators and parents must address these issues if they wish to eliminate unnecessary barriers to girls' futures. The task is a daunting one; Americans are constantly bombarded with the images of the "ideal" woman who is not often praised for her intelligence.

Currently, many females face difficult situations. Some are told that their effort (not their ability) gives them the opportunity to have a bright future. Others go through school believing that if they work hard, they can accomplish anything--the sky is the limit. Ryan (1999) explains that many girls are taught to be feminine, cute, and submissive, while at the same time being told that they are capable of anything that a man is. In adolescence, some females hide gifts to make themselves more attractive to males. They suffer from a loss of self esteem and a fear of failure. With marriage, expectations often arise that the women will be the providers of childcare, the cooks, and the maids. Years go by women put their dreams on hold, only to realize at midlife that they could have "done something" with their lives.

However, this pessimistic scenario does not have to *be* reality. Although many females are often mistreated in schools and in the larger society, there are ways to teach girls how to recognize inequities and how to avoid succumbing to stereotypical roles. Many researchers have provided parents, educators, and students with guides to help ensure the success of females. Parents and educators may choose to take this advice in directing the female to an understanding

of self, her capabilities, and the barriers to her success. Reis (1998) explains that single-sex schools have several benefits for females "including the opportunity for positive role models, the promotion of sex-role development, equal access to the curriculum, and order and control" (p. 147). Females in single-sex schools have been found to exhibit greater confidence. Graduates of all-female colleges do "better than female graduates of coed colleges in terms of test scores, graduate school admissions, number of earned doctorates, salaries, and personal satisfaction" (Reis, 1998, p.292-93).

The hope is that coeducational schools will make a greater effort to use some of the positive methods used in single-sex schools to help the female population. The authors of *How Schools Shortchange Girls* (1992) recommend that schools provide a structure in which "all students answer questions, pose questions, and receive answers, rather than one that emphasizes target students or those who call out answers loudest (p. 53). They explain that girls respond better to more relaxed atmospheres where they work cooperatively. They explain that such environments "significantly increase the number of math and science courses girls take" (*How Schools Shortchange Girls*, 1992, p.53).

Parents and educators can learn from the positive aspects of single-sex schools. Although research findings are usually used to either support or oppose single-sex education, the positive aspects found in existing research may be used in coeducational school settings. Girls in single-sex schools have greater confidence than girls in coeducational schools. They are often encouraged more and have greater exposure to female role models. If more investigation of single-sex schools and their link to increased confidence continues, teachers and parents may learn how to reduce gender stereotyping in all school environments. Karen Stabiner (2002) astutely sums up the goal that parents, educators, and students should have in the educational

process of girls: "A quality education is about much more than test scores and transcripts: It ought to open doors and keep them open for as long as possible" (p. 3).

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