

THE INTERSECTION OF GENDER EQUITY  
AND GIFTED ELEMENTARY EDUCATION:  
DOES NUMERICAL PARITY TELL THE WHOLE STORY?

by

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## **Dedication**

To Max and Jacob Grossman, my sons, who started me down this road; Paul S. Levine, my supportive husband and reader; Leila Levi, my highly gifted friend; and, all of my fellow activists who tilt at windmills, trying to make the world a better place for all of our kids.

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### **Abstract**

Gender equity affects the delivery of gifted education services to girls and boys. This is a case study utilizing naturalistic inquiry; inductive, deductive, and thematic analyses were conducted using a mixed methodological triangulation and analytical approach: qualitative (purposefully sampled interviews, classroom observations, and artifact descriptions) and quantitative (databases and student rosters). Four research questions were investigated: What kinds of gender-related interventions are currently in place? How do schools identify and serve gifted students, including those who are twice-exceptional? Does gender play a role in either the selection or treatment of gifted students? Are the current gender-related interventions “effective” in the selection of girls and boys for gifted identification and services; i.e., is there an approximate numerical gender parity between the numbers of girls and boys who are identified as gifted, and are girls and boys treated equally with respect to the provision of the gifted services which they receive? Key gender equity findings were: Title IX and gender equity training for teachers is inconsistent; texts may not have gender-equitable representations, as well as technology and engineering not being covered in science; and, teachers and administrators felt that there were innate gender differences in girls’ and boys’ behavior, e.g., girls tended to be quiet and on task and to jump rope and do crafts on the school yard, while boys tended to be more violent and to be placed in special education and to dominate sports. Key findings on the gifted were: differentiation is insufficient for the highly gifted, even at a school with academic press or optimism; and, in response to stereotype threat, girls are less

likely to be selected for intellectual testing and to be identified through the Raven test as highly gifted. Recommendations include: mandatory testing on Title IX and gender equity for teacher certification; conducting a disparate impact statistical analysis on how the Raven fails to identify girls as highly gifted; reinstatement of gifted credentialing; and, offering early identification, course compacting/acceleration, and specialized school options for the highly gifted. Failure to identify and serve the highly gifted is a loss of our nation-state's intellectual capital and patrimony.



## **Chapter 1**

### **Introduction to the study of gender equity in gifted elementary education**

The disparate treatment of school girls and boys continues to be an ongoing societal issue. While much progress has been made toward gender equity in schools since the passage of Title IX in 1972, much remains to be done. Until the Equal Rights Amendment (ERA) is passed by Congress and ratified by the states, girls and women will continue not to enjoy the same full protections under law as other people in constitutionally protected classifications such as race. Discrimination against girls and women is not only emotionally and psychologically harmful, but also economically damaging.

The same can be said of gifted children. Many gifted children have the ability to achieve at significantly higher levels and to contribute much more to our society, provided that their giftedness is identified and their talents nurtured early on in an appropriate gifted education program. Today there is no federal mandate to provide services for gifted students, unlike students with disabilities. California does not mandate gifted education, but if a school district chooses to offer a program within the state standards framework, it will be funded on a per capita basis. Los Angeles Unified School District (LAUSD), with over 700,000 students, almost nine percent of whom are identified as gifted, offers a variety of gifted programming options, including gifted magnets and centers, and Schools for Advanced Studies

demonstration (SAS) sites, to serve some of the needs of its more than 62,000 students identified as gifted.

This study will examine an SAS gifted program with approximately one-half girls and one-half boys at an elementary school in LAUSD, to determine what gender equity issues may be manifested in the identification and delivery of services to these gifted students. Interviews will be conducted with teachers primarily from the upper grade levels with classes with a large percentage of gifted students, along with observations of artifacts and student-teacher interactions; additional interviews will be conducted with the principal, assistant principal, and the gender equity and gifted coordinators (if different). Examining in depth how a school achieves gender equity in its gifted program will lead to the improvement of educational outcomes, the understanding of children's emotional and cognitive development, the design and delivery of services that promote learning, management of the school environment, and community involvement in education.<sup>1</sup>

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<sup>1</sup> 2007 LAUSD Program Evaluation and Research Branch Guidelines for External Research Review.

## Chapter 2

### Literature review

#### Introduction to the “first wave” of the women’s movement

Women continue to struggle to have their voices heard. Inherent biological differences have been used to make women’s and men’s statuses separate and yet not valued equally. It is society’s treatment of women, in which representations of gender continue to be social constructs, which continues to create the inequities we see today.

A number of key events, including the French and American revolutions of the 18<sup>th</sup> century, which replaced monarchies with democratic rule, and the Industrial Revolution in the mid-19<sup>th</sup> century, gave rise to laws that ended slavery, changed women’s legal status as chattel, and eventually gave women the right to vote. In 1868, after the U.S. Civil War, the 13<sup>th</sup> Amendment to the U.S. Constitution abolished slavery, and emancipated male former slaves were later granted the right to vote under the 14<sup>th</sup> Amendment; women were not granted suffrage until 1920, with the passage of the 19<sup>th</sup> Amendment. Almost 30 years after slavery was abolished, the U.S. Supreme Court held the "separate but equal" doctrine, which had established the legal requirement of equality, but not equity, of accommodations for whites and non-whites, to be legal (*Plessy v. Ferguson*, 163 U.S. 537 (1896)). *Plessy*’s “separate but equal” doctrine was discredited over a half-century later by *Brown v. Board of*

*Education* (347 U.S. 483 (1954)), which served to focus the civil rights struggle of people “of color” on the issue of racial equality in public school.

### **Gender equity laws and policies: Feminism as the “second wave” of the women’s movement**

As the U. S. civil rights movement of the 1960s gained steam, its leaders made a conscious strategic decision to concentrate on the rights of persons “of color” and not of women. It was thus left to the “second wave” of the feminist or women’s movement, for which Betty Friedan's 1963 publication of *The Feminine Mystique* is considered to be a key catalyst, to expand women’s legal protections under the law beyond the right to vote to equalizing women’s rights in the workplace, housing, and education, and to secure reproductive rights.

In 1963, the Equal Pay Act was enacted to forbid racial and gender discrimination in salaries and wages (Stromquist, 1994 & 1997; Tyack & Hansot, 2002). The 1964 Civil Rights Act was passed to further expand protections for individuals, from the workplace to voting, public facilities, and education, protecting not only the rights of people "of color," but also the rights of women in the area of employment. To prevent discrimination in housing, Congress passed the Fair Housing Act of 1968, which included protection on the basis of sex and familial status.

In 1974, the Supreme Court interpreted the “equal pay for equal work” provision of the Equal Pay Act more broadly, ruling that jobs need only be “substantially equal” and not identical in order to satisfy the requirements of the

Equal Pay Act (*Corning Glass Works v. Brennan*, 417 U.S. 188 (1974)). In the intervening years, the Supreme Court has interpreted the meaning of “equal pay” fairly broadly, so that men and women do not have to be paid equally but “closely” to one another. This has facilitated women continuing to be paid less than men for the same occupation, despite having similar qualifications, skills, or responsibilities. Later Supreme Court interpretations have allowed employers to differentiate salaries based on merit and seniority, if considered to be bona fide occupational qualifications, which, de facto, frequently favors males over females (Carelli, 1988; Bailey, 1993; Stromquist, 1994 & 1997; Sandler, 2002).

1976 saw the enactment of the Equal Credit Opportunity Act, which in part prohibits creditors from discriminating against credit applicants on the basis of sex and marital status. The Pregnancy Discrimination Act was passed in 1978 to prohibit employment discrimination against pregnant working women. In 1993, the Family and Medical Leave Act (FMLA) was passed, which added to the protection of working women and men being able to take unpaid leave to care for their newborn children or ill family members. Today, current law protects “equal pay for equal work,” but has not been broadened to include “comparable work” (Stromquist, 1994 & 1997).

The wage gap between women and men continues to persist at 77 cents on the dollar, a fact documented by the recent AAUW *Behind the Pay Gap* report (Dey & Hill, 2007). This has led to the Paycheck Fairness and Fair Pay Acts being

introduced in Congress, the former to enhance the enforcement of the Equal Pay Act, and the latter on the issue of comparable pay for comparable work.

The Title IX Education Amendments of 1972, the regulations for which were not enacted into law until 1975, then later the 1994 Gender Equity in Education Act, have acted as a significant driving force for school reforms in sex or gender equity and sex discrimination, and have given new meaning to protection in education which is federally funded (Sandler, 2002; Tyack & Hansot, 2002); on the other hand, the 1999 Educating America's Girls Act failed to make it out of Congress. Title IX states: "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..." with broad statutory exceptions (20 U.S.C. §§ 1681-1688 (2007)). Title IX prohibits sexual discrimination against students, teachers, and other personnel in school settings, i.e., "all federally aided education programs, including admissions, recruitment, wages, scholarships, housing facilities, access to courses, financial assistance and athletics" (Stromquist, 1997, p. 41). The broader goal of Title IX is to provide students, regardless of gender, with equal opportunities to pursue training and education, and to participate in any activities or occupations leading to any career path, even if this is against societal notions of what traditional female and male occupations should be (Carelli, 1988; Bailey, 1993; Stromquist, 1994 & 1997; Sandler, 2002; Tyack & Hansot, 2002; Jones & Dindia, 2004). Title IX has had the greatest impact in the area of secondary and postsecondary school sports, where

spending levels have become better equalized between female and male sports; in 2005, in an expansion of an individual's legal rights of redress under Title IX, the U.S. Supreme Court, in *Jackson v. Birmingham Bd. of Ed.* (544 U.S. 167 (2005), 309 F.3d 1333), held that when an individual complains of sex discrimination and is retaliated against, the retaliation itself is considered to be an [additional] intentional act of discrimination and damages are recoverable.

While all states have incorporated the federal Title IX legislation into their state laws over the 35 years since its enactment, few states are currently actively involved in expanding substantive legislation promoting gender equity in education. Recent state legislative changes in education have included gender equity protections concerning charter schools (Arkansas, Washington, DC, and Rhode Island), athletic programs (California, Florida, Hawaii, Illinois, Utah, and West Virginia), discipline (Georgia), public school building projects (Connecticut), teaching and administrative services and licensure (New Hampshire and Oregon), and a state university system upward mobility program (California). Broader Title IX gender equity in education legislation has also been passed or modified recently in Florida and Tennessee. California has largely incorporated the sexual equity precepts of Title IX at the elementary, secondary, and postsecondary educational levels, in the prevention of discrimination and harassment, its School Age Families Education Program, and the postsecondary Sex Equity in Education Act (LexisNexis, 2007). Almost a dozen states, including California, have expanded their definition of gender to include sexual orientation. The implementation and impact of educational policies on gender,

particularly with respect to Title IX, continue to be felt wherever federal funding is involved.

Staff within schools can remain largely unaware of gender equity issues or their own unconscious stereotypical behaviors, and are often poorly trained to recognize this. The institutional fabric of the schools, including the structures, programs, personnel hiring guidelines, classroom arrangement, curriculum, standards, and tests, can still be found to be perpetrating these gender biases and inequities. Postsecondary education has frequently failed to respond to the unique needs of females, particularly as the numbers of females increase in traditionally male-dominated occupations, e.g., engineering, medicine, and technology (Smithson, 1990; Bailey, 1993; Stromquist, 1994 & 1997; Tyack & Hansot, 2002; Jones & Dindia, 2004).

Title IX gives schools latitude in interpreting and implementing gender equity policies; with schools having discretion in the interpretation and implementation of the law, and with lax oversight, many changes have been slow or nonexistent at the local level (Stromquist, 1994 & 1997; Tyack & Hansot, 2002). In 1974, the National Organization of Women (NOW) Legal Defense and Education Fund (NOWLEDEF) established the Project on Equal Education Rights (PEER), which, in its 1982 report, concluded that the implementation of Title IX at both the elementary and secondary school level was “dismal,” and that the Office of Civil Rights (OCR) had failed to “clarify disputed points in the regulations, train staff, conduct thorough investigations into non-complying districts, and resolve complaints



within a reasonable period of time” (Tyack & Hansot, 2002, p. 25), despite the fact that “there was no legal necessity for not pursuing complaints of overt bias and discrimination” (Nash, Klein, et al., 2007, p. 67).

After the passage of Title IX, additional laws regarding gender equity in the educational setting have included the Women's Education Equity Act (WEEA) of 1975 and the Vocational Education Act (VEA) of 1976. WEEA provided grants to design, implement, and evaluate educational programs and activities to ensure gender equity in education for all females at all levels, as well as fund “state government research centers and individual researchers to develop, evaluate, and disseminate curricula, textbooks, provide pre- and in-service teacher training, improve career guidance, and promote quality of education for women”; it failed to receive adequate funding after 1999 (Stromquist, 1994, p. 42). Similarly, VEA provided funding for a specialist in every state to review vocational and technical education programs to minimize gender stereotyping and biases, as well as counseling programs to encourage and enhance women’s participation in occupations typically held by men; while VEA still exists, gender-specific components have been weakened, and funding has also been significantly diminished (Stromquist, 1994 & 1997; Tyack & Hansot, 2002).

Despite a statutory patchwork aimed at protecting and benefiting women, women still lack uniform Constitutional protection in the U.S. According to Sager, “conspicuously absent from the Constitution of the United States is any provision for

the equality of women, save only the Nineteenth Amendment” (2002, p. 819), although the 14<sup>th</sup> Amendment states that:

No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Laws impacting individuals who have been classified on the basis of being members of racial minorities or of their national origin are deemed “suspect” and will be subjected to the “strict scrutiny” level of judicial review under the Equal Protection Clause; laws involving gender- or sex-based classifications, on the other hand, are subject to an intermediate standard of review, if the classification is deemed to have a “substantial relationship” to an “important” governmental interest (Nowak & Rotunda, 2004, p. 688, citing *Korematsu v. U. S.*, 323 U.S. 214 (1944)).

The Supreme Court decision of *Roe v. Wade* (410 U.S. 113 (1973)) made abortion legal in the U. S. and significantly furthered the reproductive rights of women. *Roe* has come under attack innumerable times throughout the ensuing three-and-one-half decades, both on religious grounds and on the strict legal constructionist issue of whether or not a right of privacy exists within a literal reading of the four corners of the Constitution. In a narrowing of *Roe*’s protection of a woman’s legal right to choose to have an abortion, the Supreme Court recently upheld the Partial-Birth Abortion Ban Act of 2003. The remaining female Supreme Court Justice, Ruth Bader Ginsburg, wrote:

I dissent from the Court’s disposition. Retreating from prior rulings that abortion restrictions cannot be imposed absent an exception safeguarding a

woman's health, the Court upholds an Act that surely would not survive under the close scrutiny that previously attended state-decreed limitations on a woman's reproductive choices...Women, it is now acknowledged, have the talent, capacity, and right "to participate equally in the economic and social life of the Nation"...Their ability to realize their full potential, the Court recognized, is intimately connected to "their ability to control their reproductive lives"...Thus, legal challenges to undue restrictions on abortion procedures do not seek to vindicate some generalized notion of privacy; rather, they center on a woman's autonomy to determine her life's course, and thus to enjoy equal citizenship stature (*Gonzales v. Carhart* (550 U.S. \_\_\_ (2007)), citing *Planned Parenthood of Southeastern Pa v. Casey* (505 U.S. 833, 856 (1992))).

Commenting on Ginsburg's dissent to *Gonzales*, Sunstein stated that "...Ginsburg has now offered the most powerful understanding of the foundations of the right to choose [sex equality] --- and it is important to remember that today's dissenting opinion often becomes tomorrow's majority" (2007, p. A31). The day after the *Gonzales* decision banning late second-trimester abortion was released, the Freedom of Choice Act (FOCA) to allow women the legal right to choose to have an abortion on demand was reintroduced in Congress; the likelihood of this legislation passing will depend upon the composition of Congress after the 2008 presidential election cycle.

The "first wave" of the women's movement had begun in earnest with the unsuccessful introduction of the Equal Rights Amendment (ERA) in 1923, which was reintroduced and passed by Congress in 1971, and yet by 1982, it had failed to be ratified by a sufficient number of states within the time limit set by Congress.

According to Greenberger,

The landmark Civil Rights Act of 1964 has not been extended to prohibit discrimination on the basis of sex, except in the area of employment; ...the

Constitution has been interpreted to provide women with only “middle tier,” rather than “top tier,” protection from government discrimination on the basis of sex (2007, p. A13).

Today the ERA is being revived: “Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex.”

The “tipping point” regarding the legal status of women being equal to that of men in the U.S. may be about to be reached. This can be seen in the number of countries which are run by female heads of state, in the U. S. having had two female Secretaries of State, having a female who is a serious contender for the office of President as well as being a two-term U.S. Senator who is married to a former two-term President, having a female Speaker of the House, and having the ERA reintroduced. Just as the women’s movement made initial legal strides based upon many of the successful legal arguments used by the civil rights movement on the issue of racial equality under the law, and as the gay rights movement is making inroads toward legal equality with respect to the recognition of same sex civil unions, so might a woman, too, be granted “autonomy to determine her life’s course, and thus to enjoy equal citizenship stature” (Ginsburg in *Gonzales*, 2007).

### **Gender equity laws and policies: The “third wave” of the feminist movement**

While much of the legal agenda of the “second wave” of the women’s movement remains yet to be accomplished largely due to the failure to pass the Equal Rights Amendment, a “third wave” of the feminist movement began in the late 1980s to address not only legal rights in regard to gender equity in the workplace and housing, in public educational funding and programming, and in healthcare, but also

to change societal norms that continue to perpetuate gender inequalities in the media, the 1994 Violence Against Women Act being one such legislative example. The “third wave” is being driven in part by personal objectives and in part by “life-style” issues, rather than by efforts to modify public policy, i.e., attempting to pass the Equal Rights Amendment. In the second edition of the *Handbook for Achieving Gender Equity Through Education*, the authors lay out their strategy for gender equity to be achieved through process and outcome goals, to eliminate gender discrimination and to decrease or reduce gender stereotyping and gender segregation in education and society (Klein, et al., 2007). Feminists do not speak as a unified bloc, and therefore support for some gender equity issues is not universal: women’s ineligibility for the military draft and for active combat service; women’s leadership in religious bodies, e.g., the Roman Catholic and Episcopalian/Anglican churches; affirmative action; the “mommy track”; pornography; sexual harassment; surrogate motherhood; social security benefits for homemakers and family caregivers, etc. As Stromquist has stated:

While feminist theories are far from being unitary, most of them recognize that patriarchal ideologies---those which perpetuate the views that women are weak and inferior to men and therefore should be kept under male control and surveillance---are an important mechanism in the constitution of the social order in all contemporary societies (1995, p. 434).

### **The impact of Title IX on schools as institutions**

As Title IX has come up for reauthorization during the current presidential administration, the U.S. Department of Education has proposed various regulatory changes which might have eroded certain administrative protections for female

athletes with respect to numerical parity with male athletes (Davis, 2002). With over one hundred advocacy groups lobbying against these changes, these protective provisions of Title IX were kept intact. In 2004, the debate over whether or not to amend Title IX was once again brought up, this time focused on the rights of public schools to educate boys and girls in separate settings (Knight, 2004). The American Civil Liberties Union (ACLU) is adamantly opposed to any changes in the provisions of Title IX to exempt single-sex schooling from Title IX, because “it violates the equal protection clause and perpetuates the inequalities associated with gender segregation” (Herr & Arms, 2004, p. 530). In addition to the ACLU, the AAUW and the National Association of Women and the Feminist Majority Foundation (NAWFMF) have argued that amending Title IX would eliminate hard-won equity protections.

### **The underrepresentation of women in school leadership roles**

Management and administrative positions in the educational field are dominated by men, despite the fact that the vast majority of teachers are women. As of 1999-2000, women made up 75 percent of public school teachers but only 44 percent of the principals (Digest of Education Statistics, 2005). The percentage of female administrators in central offices has declined over the decades, with women most likely to be dealing directly with students or participating in special projects, rather than in positions with policymaking responsibilities. The underrepresentation of females in school leadership positions is well-documented (Sadker, Sadker, & Klein, 1991; Montenegro, 1993; Tallerico, 1997). Some attribute this to the lack of

personal qualities or characteristics necessary for being a leader, e.g., confidence, assertiveness, and autonomy, while others suggest that systematic barriers are keeping females from obtaining leadership positions (Lee, Smith, & Cioci, 1993). Enomoto states that “men define what it means to manage and lead schools and school systems. Their assumptions, beliefs, and values constitute what has been held as natural and normative” (2000, p. 375). In an informal observational study of college students regarding moral decision-making in writing, Smithson (1990) found that males appear to be more concerned with professional power, while females appear to be more concerned with individual and group responsibilities; females tend to value connecting with others, while males tend to value autonomy, a quality deemed necessary for positions of leadership. Stereotypes of females not having leadership qualities have been perpetuated throughout society and have resulted in the “glass ceiling” or “escalator” effect, occurring when females are unable to achieve higher job positions due to barriers associated with their femaleness, including: stereotypes associating leadership with maleness, gender discrimination and biases, mixed roles and conflicting expectations (where females are challenged to display their leadership role while maintaining their “femininity”), and the need to choose between pursuing a career or raising a family (Indivik, 2004; Bolman & Deal, 2003).

The absence of females in administrative positions as role models further perpetuates this pattern, since fewer females are being trained or have an interest in becoming leaders. Often the addition of female administrators increases the

proportion of those in the caretaking positions (i.e., the program coordinator, director, or other positions that typically entail a notion of caregiving), but not necessarily in authoritative leadership positions such as principal, superintendent, or dean (Tallerico, 1997). Refocusing research on gender equity issues such as fairness, recruitment, preparation, selection, and on-the-job support and advancement may change these trends. The advancement of women in administration depends upon policy changes to increase equitable participation, structural or organizational changes to reflect women's job priorities, and an administrative and policy agenda that entails gender equity knowledge and skills (Sadker, Sadker, & Klein, 1991).

### **The social construct of gender**

At its most basic level, gender can be thought of “as a social construct, a set of cultural meanings attached to the biological division of the sexes,” which “influences and is a product of communication” (Hansot & Tyack, 1988, p. 742; Mahoney & Knupfer, 1997, n.p.). Connell elaborates, saying that “in gender processes, the everyday conduct of life is organized in relation to a reproductive arena, defined by the bodily structures and processes of human reproduction” (2005, p. 71). Scott defines gender as “a social category imposed on a sexed body .... [,] .... a constitutive element of social relationships based on perceived differences between the sexes, and ... a primary way of signifying relationships of power” (1986, pp. 1056 & 1067). Stromquist adds that gender is “not only ... a set of values that are transmitted - a message across generations and same-age cohorts - but even more so ... a historical-social construction that affects as well as is affected by social



practices and the unconscious” (1997, & 1995, p. 428; Baym, 1990). In *Gender Play*, Thorne offers the point of view of the women’s movement from the 1970s and 1980s, that children “are *socialized* into existing gender arrangements,” and that “at the level of social situations, gender has a fluid quality” (1994, pp. 2 [italics in original] & 159). Ultimately, “‘differentiated gender thinking’ can become gender bias and have detrimental effects on students in classrooms” (Streitmatter, 1994, p. 7; Hilke & Conway-Gerhardt, 1994).

In order to better understand the context of gender equity, one must look at how gender and gender relations have been conceptualized in historical terms “and by patterns of separation, hostility, and discrimination” (Thorne, 1994, p. 82). Stromquist has stated “that the gendered nature of market forces and public policy are attributes that globalization has not been able to alter” (2002, p. 133). Gender has been analyzed and taught with respect to multiple historical frameworks, including Freudian psychoanalytic identity, the mythopoetic movement, Marxism, anthropological social- or sex-roles, patriarchy, gender formation, social-scientific or social constructivism, Holter’s social forms analysis, etc. (Lako, 2004; Connell, 2000 & 1987; Middleton, 1993; Stromquist, 1990; Scott, 1986; Firestone, 1972).

According to Connell, today’s social constructivism is based upon

the feminist analysis of gender as a structure of social relations, especially a structure of power relations; sociological concerns with subcultures and issues of marginalization and resistance; and post-structuralist analyses of the making of identities in discourse, and the interplay of gender with race, sexuality, class and nationality (2000, p. 8).

On the issue of the sociology of masculinity, Connell adds that common themes include “the construction of masculinity in everyday life, the importance of economic and institutional structures, the significance of differences among masculinities and the contradictory and dynamic character of gender” (2005, p. 35).

Policy issues related to gender have had a significant impact on the face of public education over the past two centuries. In the early 19<sup>th</sup> century, as girls began to attend urban schools with classrooms graded by age, public education became coeducational without significant controversy. By the early 20<sup>th</sup> century, after the school term had been lengthened and teacher certification requirements raised, girls began to outnumber boys in high school, and women outnumbered men in the teaching profession; concerns began to be voiced that “boys were falling behind girls educationally,” and that women were neglecting their families (Tyack & Hansot, 1988, p. 36). Following the precepts of “scientific” or “classical management” theory, in homage to the efficient machine culture, schools and school districts were reorganized into hierarchical bureaucracies, which had the effect of creating gendered organizations which favored men’s working styles over women’s (Davies, 2000; Weiler, 1993). The notion of a “gender gap” which must be closed has been raised regarding girls’ participation in “masculine” math, science, and technology classes, as well as boys’ participation in “feminized” liberal arts subjects such as the fine and performing arts (Arnot, David, & Weiner, 1999). Connell adds that “there is little discussion, informed by research on masculinity, about education for boys in

modern mass school systems; let alone about the principles that would include girls as well as boys in an educational process addressing masculinity” (2005, p. 239).

McLeod and Yates (2006) focused on how educational settings can affect students’ attitudes, identity, and aspirations; student participants were asked about their perceptions of their schools, to determine whether the values of the school were internalized by them. They found that gender plays an important role in students’ identities and aspirations. Girls are highly influenced by family and peer interactions and are very well aware of how their behavior is perceived by others. The school environment (i.e., culture of respect and acceptance, or lack thereof) influences the development of student identity and attitudes. Females were found to be more comfortable exploring nontraditional roles and identities than males, while they were not yet comfortable committing to their goals (i.e., attaining a more masculine occupation).

**Sexual harassment and bullying at school: The hostile environment of hallways, lockers, the school yard, the cafeteria, and other unsupervised gathering places**

Despite the passage of Title IX in 1972, a 2001 AAUW report found that nearly two-thirds of female students surveyed have been subjected to unwanted sexual attention, and that well over 10 percent avoided classes taught by faculty with a reputation for sexual harassment (p. 25). Smithson (1990) found that sexual harassment seems to be the most visible gender-based problem at colleges and universities. Sadker found that 20 percent of school-aged girls reported being

physically or sexually abused, and 80 percent reported encountering some form of sexual harassment (1999, p. 24).

Oswald, Safran, and Johnson studied interventions to improve problematic hallway behaviors among middle-school students. Focusing on positive practice, pre-correction, verbal praise, reinforcement, correction of inappropriate behavior, active supervision, discussion of behavior with students, and on-time dismissal, problematic behaviors fell by almost one-half during the five-week intervention period (2005). Readily available and cost-effective techniques could thus be used to make school common areas more safe and orderly.

Unsupervised areas at school can be places of bullying or harassment, as well as of formative, positive social experiences. Bullying and harassment at school typically take place during times when students are changing activities and classes in open areas such as playgrounds, cafeterias, locker rooms, and hallways, without close adult supervision. In order to maintain a [sexual] violence free and safe environment for those students required by law to attend school, schools must institute gender equity and [sexual] harassment policies, as well as provide appropriate levels of adult supervision during “passing periods” (Shakeshaft, 2002; Cohen & Blanc, 1996). On the other hand,

Hallways are more than corridors through which students pass enroute to classes and other activities. This schooling space is a dynamic social site where power struggles occur, hierarchies are established, and identity-informing interactions take place, both when the hallways are bustling with bodies and when they are almost empty (Banks, 2005, p. 187).

### **The physical environment of the classroom**

While the physical layout of classrooms and schools may be important in maximizing the supervision of students, their mobility, and instruction, it can also be a critical factor contributing to gender inequity in the school setting (Jones, 2000; Arends, 1988). Seating arrangements can act to reinforce hierarchical tendencies to the extent to which female students experience a “chilly climate,” making the classroom a less hospitable environment (Kramarae & Treichler, 1990; Hall & Sandler, 1982). Teachers typically place students with negative and aggressive behaviors, frequently associated with male students, in the front of the classroom so that the teachers can keep a closer eye on them. This, in turn, places female students further back in the classroom. Students sitting closest to the teacher, or within the “action zone,” the front or center areas of the classroom, tend to participate in more learning activities than students seated outside of this area; by eliminating the “action zone,” teachers could interact on a more equitable basis with all students, by enhancing learning opportunities without physical barriers (Streitmatter, 1994; Arends, 1988). Thorne found that in environments with minimal supervision and where students can choose their seats, students tend to be separated by gender, which can be attributed to “shared interests or ‘behavioral compatibility’... [, where] boys find it more rewarding to interact and play with boys, and girls to interact and play with girls”; however, she argues that such [dis-]organization of the classroom and activities can also serve to reinforce gender boundaries and maintain a sense of gender separation (1993, p. 57). By assigning students seats and setting strict

classroom rules and guidelines, i.e., “crowd control,” negative gender-based behaviors can be significantly reduced or eliminated altogether (Jones, 2000).

**Schools not meeting gender needs: Gender equity practices in the classroom, teachers’ expectations, and teacher-student interactions**

In the classroom setting where they are in constant contact with their students, teachers find themselves in position of power. Teachers inherently and unconsciously take their learned behaviors, values, and views of society into the classroom, and in their positions, may transfer these opinions onto their students. In 1974, the influential study *Pygmalion in the Classroom: Teacher Expectations and Pupils’ Intellectual Development* documented how students tend to live up to their teachers’ differentiated expectations (Sadker & Sadker, 1995, citing Rosenthal & Jacobson). Math, science, and technology, as well as physical education, have been and continue to be problematic areas of teachers’ unconscious gender-biased expectations: teachers may interact verbally and nonverbally less often with female than with male students; female students may be praised for their efforts, while male students are praised for good performance and given critical feedback and remediation; examples and illustrations in instruction and instructional materials may be gender-biased; teachers’ language may non-inclusive; male students may have greater access to school computers; educational software may appeal more to boys, etc. “Research on gender and schooling shows a persistent replication of gender relations that develop over time as exclusive gender groupings marked by the privileging of male voices and male activity in the classroom, playground, sports

field, and hallway“ (Smith, 2000, p. 1149). According to Rusch (2004), it is important for educators to acknowledge their biases and stereotypes so as to avoid perpetuating certain biases and stereotypes. Sanders also argues that “teachers are almost always unaware of their biased behavior they exhibit through verbal interactions, eye contact, and body language” (1997, p. 2). If teachers are unaware of their biases and thus unable to monitor their behavior to reduce such stereotyping, they could consider having a colleague monitor their classroom interactions in order to assess whether girls are given the same opportunities as boys to participate in classroom discussions. Conversely, Streitmatter has warned of the “danger that the teacher may actually do more harm than good through a skewed interpretation of the extent of gender bias,” where an extreme interpretation of gender bias may result in sexist or reverse-sexist practices (1994, p. 10).

A 1992 AAUW study found that girls were less likely to receive a prompt to clarify their responses when they gave inaccurate answers, and that boys were called on more regularly than girls. In addition, boys were more likely to shout out answers, while girls remained quiet, and, consequently, were discouraged from taking a more active role or participating in classroom discussions. In light of these findings, the report recommended that educators re-evaluate their teaching methods and behaviors (AAUW, 1992). On a similar note, Sadker and Sadker (1994) argued that public schools are failing when it comes to equitable treatment of girls and boys, and that widespread bias and stereotypes against females in co-educational classroom settings remain.

Interestingly, a 1998 AAUW study found that females have made significant gains in previously male-dominated subjects such as science, technology, engineering, and mathematics. Gender inequity in schools places females at a disadvantage in terms of today's more computer-based or technologically-oriented job market. Although the gap in math and science achievement has narrowed significantly, the gender gap in the technological fields continues to widen (AAUW, 1998). Harrell (1998) found that, when compared with females, males were more likely to have coursework or experience in computer programming, use a computer more often during free time or on a daily basis, and have more positive attitudes and experiences with computer usage. Furthermore, males tend to use computers for computation to solve math and science problems or for playing games, while females use computers more for word processing, skill building, and personal communication (AAUW, 1998; Weinman & Hagg, 1999). Both genders perceive computers as primarily in the male domain (Harrell, 1998; Sadker, 1999). This perception not only widens the gender gap regarding computer knowledge and usage, but hinders female students from pursuing computer-related interests.

Schools may play a major role in perpetuating stereotypes by steering females away from technologically oriented education paths and toward those paths that are thought of as being more "feminine". This stereotype continues to pervade the culture, resulting in many girls feeling uncomfortable in the world of high tech. In addition, since most teachers are female and may not be as technologically savvy as their male counterparts, they may not be as interested in incorporating computers



and technology into their classroom instruction. Schools may also be out of step with employment forecasts, and, consequently, teachers may be unaware of the types of high tech-based jobs which might await their students, or may simply be teaching their students from knowledge and skills that they themselves know and are comfortable with (Whyte, 1986).

Boys are as affected by gender inequity, yet their plight seems to have garnered less public policy or programmatic attention (Gill & Adelaide, 2005). Gill (2005) pointed to the importance of addressing the needs of both genders, recommending the use of a “gender equity framework.” Being a male child, particularly at the elementary school level, may be seen to be a disadvantage, due to many boys’ active and aggressive behaviors, in comparison with that of girls (Kindlon & Thompson, 2000). Consequently, boys are more likely to be sent to the principal’s office, to receive disciplinary referrals, and to be suspended or expelled (AAUW, 1998). Boys also face societal pressures to conform to a stereotypical male role and may often be stereotyped into gender roles earlier than girls. Three out of four boys have reporting being a target of sexual harassment or social pressures if their career interests are thought to be more “feminine” (Sadker, 1999, p. 23). Boys also experience higher mortality rates through accidents and violence than girls. The evidence further suggests that many boys are falling short in their education: boys are more likely to drop out of school, less likely to complete their school work, more likely to cheat on their school work, more likely to get lower grades when compared with girls, and less likely to enroll in and complete college (AAUW, 1998; Kimmel,

2000; Sommers, 2000). Boys are more likely to need reading intervention and make up the majority of students in special education classes (AAUW, 1998). Ironically, boys are more likely to be better paid in the work force, due to the fact that it is easier for them to find high paying manual labor jobs without high school diplomas or college degrees; with vocational or hands-on training apprenticeships, male students tend to enter the workforce earlier than females do, giving them an additional financial advantage.

Because students spend much of their lives in classrooms in schools, it is important that teachers and school administrators understand and are conscious of their own expectations and behaviors which they place on their students (Rusch, 2004). As adult role models, their conscious or unconscious discriminatory actions may help to perpetrate societal stereotypes of gender roles, which could then widen the gender equity gap even further.

Sanders, Koch, and Urso state that “small and often subtle behaviors favoring males by teachers and - permitted by teachers - classmates, which include a competitive or aggressive classroom atmosphere, serve to discourage girls” (1997, p. 78). Attribution theory-based strategies for teachers to overcome their unconscious gender biases in the classroom setting and to encourage competence-related beliefs may include self-reflection, consciously avoiding stereotypes, encouraging awareness of gender equity issues, consciously alternating attention between girls and boys, etc. (Davis, 2003; Tiedemann, 2002; Volman & van Eck, 2001; Adams,

1998; Sanders, 1997; Warren-Sams, 1997; Sadker & Sadker, 1994 & 1982; Fennema & Hart, 1994; Grossman & Grossman, 1994; AAUW, 1992; Mark, 1992).

Kramarae and Treichler (1990) found that when teachers established and maintained their power and control in the classroom, students learned that authorization to talk was based on the quality of the product, expertise, disciplinary training, and the ability to engage comfortably in a “professional” discussion.

Bossert (1981) found that teachers often unconsciously asked boys to perform manual tasks, while they asked girls to take care of housekeeping or secretarial tasks. In another study, both male and female teachers gave higher marks to papers deemed as having a more “masculine” (i.e., active) writing voice, compared to ones with a more “feminine” (i.e., passive) voice (Barnes, 1990); interestingly, the tenor of the female students’ writings often mirrored that of the female teachers.

Since teachers are unable to give all students equal attention, it has been found that relatively little instructional time is devoted to mixed-gender groups in elementary schools, while the vast majority of academic time is spent instructing one gender or the other (Lockheed, 1981). As the statement “boys will be boys” suggests, boys are often given license to be more hierarchical, assertive, aggressive, competitive, outspoken, and autonomous in their social relationships both in and out of the classroom, one consequence of which is that more of the teacher’s time and attention may be given to praising, criticizing, and giving feedback to male students (Jones & Dindia, 2004; Streitmatter, 1994, citing Serbin, et al., 1973; Thorne, 1994; AAUW, 1992; Sadker, Sadker, & Klein, 1991; Putnam & Self, 1988; Irvin, 1986;

Sadker & Sadker, 1986 & 1985; Dweck, et al., 1978). Jones and Wheatley (1990) concluded that although teachers praised boys more than they do girls, there were few differences between genders when criticism was offered. Other studies have found that teachers frequently initiate more conversation with boys than girls (Becker, 1981; Sho, 2000). Both female and male teachers have been found to prefer interacting more with boys than girls, including asking more open-ended questions of boys and allowing fewer female students to respond to questions than males (Becker, 1981; Hall & Sandler, 1982; Irvin, 1986; Putnam & Self, 1988). Although Altermatt's, Jovanovic's, and Perry's study showed that teachers ask more questions of boys than of girls (60.7 percent versus 39.3 percent, respectively), they concluded that gender differences were eliminated once the teacher encouraged students to volunteer and participate in classroom discussions and other activities (1998, p. 522). Individual differences in students' behaviors in an elementary school often set the tone for the frequency and type of interactions a teacher has with her or his students (Bank, Biddle, & Good, 1980). Canada's and Pringle's (1995) observational study suggested that a teacher's interaction and attitude toward a specific gender may be attributed to the gender ratio within the classroom.

Research suggests that females tend to perform better with cooperative and collaborative, rather than competitive, learning approaches (Streitmatter, 1994). Traditional classroom environments tend to be more competitive in nature, and thus may contribute to a "gender gap" (Preston, 1987). A collaborative environment can provide the opportunity for students of both genders to learn from each other

(Preston, 1987; Hunter, 2005; Steele, Levin, Blecksmith, & Shahverdian 2005). Steele, et al., found that collaboration helps to diminish psychosocial barriers, including gender, race, and class, by finding commonalities in learning from each other. A more collaborative and cooperative setting is one way to increase the learning modality of female students and gives girls a non-threatening environment to explore male-dominated concepts and subject areas to further build on their knowledge through open discussion (Perez, 2000; Schwartz and Hanson, 1992).

Some studies at the college level have concluded that there were no gender differences in how teachers called on students for responses, and the responses themselves were given equally adequate or inadequate attention from the professor (Brady & Eisler, 1999). This may be attributed to the professor's expectations or perception of the maturity of the students. Similarly, among social work graduate students and faculty, Brooks (1982) found no significant differences in the quantity or quality of interactions between the professors and their students. Studies in the college classroom suggest that the interaction differences may not be solely attributable to gender, but may also be due to personality conflicts, individual achievement history, the gender of the teacher, and both the student's and teacher's race, socio-economic status, upbringing, and other life experiences (Brady & Eisler, 1999; Jones & Dindia, 2004).

### **Curriculum**

Although Title IX guidelines excluded textbooks, early activists in the feminist movement created textbook review committees at the state and school

district levels to screen for stereotyped language and images in textbooks (Stromquist, 1994). Today textbook publishers and reviewers are more conscious of sexist and racist portrayals, and are more aware of the need to positively emphasize the contributions of women and persons “of color” in their books (perhaps to the point of having to counter claims of “political correctness” by some) (AAUW, 1992; Schmurak & Ratliff, 1994; Manzo, 1997; Whyte, 1986). As AAUW has argued, “equitable textbooks do not merely add women into a traditional historical account, but instead explain to students how contributions made by specific groups are central to the overall historical narrative” (1992, p. 69). Gross (1997) found a number of textbooks with females playing traditionally male roles, such as adventurers and rescuers, as well as males performing feminine domestic work (i.e., household chores and having primary responsibility for childcare), in contrast to past representations. Increasingly, school districts are becoming sensitive to the need to have school texts reflect the diversity of their communities and studentbodies, with boards of education voting to make school reading lists more multicultural (Guthrie, 1998).

In contrast to the history of strides made in textbooks regarding equitable portrayals of girls, women, and people “of color,” the rise of multimedia, including the computer and the Internet, has served to perpetuate sexist and racist stereotyping, tending to reduce females to certain stereotypical roles (Knupfer, 1998; Sadker, 1999). Some educational computer software may be based more on stereotypical male interests, such as war, violence, and professional sports. One study found that

the strong and brave central characters in software typically had masculine features, while the female characters were usually meek, defenseless, weak, and often in need of assistance, as well as often depicted with over-emphasized body parts ( chests, hips, bare legs, etc.) and scant clothing (Bradshaw, Clegg, & Trayhurn, 1995).

Regardless of the media of the curricula, students must be taught in a meaningful way to create opportunities for both genders and to construct their own understanding or knowledge through their ideas, thoughts, beliefs, and experiences (Richardson, 1997). University-level women's studies programs initiated projects aimed at developing curricula that incorporated gender sensitivity, the primary purpose of which was to make educators aware of how the traditional pedagogy could restrict and undermine the learning and self-concepts of both female and male students; these "curriculum integration" projects required teachers to examine their beliefs and to teach attitudes and behaviors that enhanced the self-esteem of all students, particularly females (Smithson, 1990). Kramarae and Treichler (1990) found that although the curricula largely excluded the experiences of females, educators could play a more active role in picking materials and books to include a better representation of females and persons "of color"; teachers can play a significant role in policy and program development that best addresses the interests of females in the classroom (Leder, 1992). Fullan (1993) argues that teachers should therefore facilitate curriculum development and make learning more meaningful.

Steele, et al. (2005), have also argued that the best way to instill gender equity values in schools is to change the way educators are taught. As part of their

teacher education training, and through modeling by example, educators should be taught about gender equity issues and how to be aware of their own unconscious and potentially biased attitudes.

### **Science, technology, engineering, and mathematics (STEM)**

All educators should have equal expectations for academic achievement for their male and female students, particularly in traditionally male-dominated subject areas such as science, technology, and math. The perception of certain subjects as being gender-specific may be one of the most important factors in school and career choices (Smithson, 1990; AAUW, 1992). At an early age, boys and girls are taught not only by their teachers, but also by their families and society as a whole, to perceive certain subject matter as being gender-specific. Girls often take technologically-based courses for more application or practical purposes, while boys are interested for other reasons, such as gaming; if given a choice, most of the girls reported that they would not take the course (McGrath, 2005; Preston, 1987). Some researchers have found that women's aspirations tend to become more stereotypical in nature as they grow older, and consequently they are less committed to exploring nontraditional identities and aspirations in the science fields (Farmer, 1995; Arnold, 1993; Putnam & Self, 1988; Irvin, 1986).

Schiebringer (2007) argues that females could break through into male-dominant disciplines through meaningful learning incentives, female role models, mentorship, and equal access to information. Much discussion has been given over to the challenges faced by females in pursuing male-dominated courses such as math,



science, and computers (Goodell & Parker, 2001). In the U.S., the number of females participating in and completing courses in science and mathematics-related topics remains low compared to their male counterparts (Chacon & Soto-Johnson, 2003). Davenport reported that females make up only about 25 percent of those students enrolled in advanced mathematics courses (1998, p. 497). The Project on Equal Education Rights (PEER), surveying high school students in California, Maryland, and Michigan, found that males made up some two-thirds of the students in computer programming classes (1984). Schools often shortchange girls by not encouraging them to take advanced math and science classes, a result of which is that female students frequently stop being successful in math and science later in their educations (Kumar & Morris, 2005; AAUW, 1992; Smithson, 1990). Males tend to achieve and perform at higher levels than females in the male-dominated courses, such as science, technology, engineering, and mathematics, which may be due in part to females' lack of self-confidence or self-efficacy in their abilities, the lack of role models, the undermining of their own abilities or skills, or the lack of prior experience, including inadequate academic preparation in foundational areas such as advanced math (McGrath, 2005; Boaler, 2002; Lev, 2000; Davenport, 1994; Smithson, 1990; Bandura, 1986; Linden, 1985). Women may make conscious decisions to discontinue their studies in more male-dominated subject areas in order to avoid ridicule or social isolation (McGrath, 2005; Chacon & Soto-Johnson, 2003; Becker, 2003; Kramare & Treichler, 1990). In a survey conducted pre- and post-adolescence, females' self-confidence and positive feelings about themselves and

their abilities declined significantly during adolescence, whereas males' self-confidence and beliefs about their abilities did not drop as drastically (Santrock, 2001). At the undergraduate level, where women had higher verbal and math SAT scores, as well as higher GPAs than their male counterparts, women rated themselves and their abilities in the subject areas of math, science, problem-solving, and spatial skills less positively than males did (Linden, 1985).

### **Standardized tests and accountability**

In 2002, the No Child Left Behind Act (NCLB) made accountability and standardized testing integral components of a federal approach to educational reform, setting deadlines for states to develop accountability infrastructures. NCLB provides funding for more innovative interventions, such as single-sex classes and schools, but several observers feel that this may be a regression to a former separation of the sexes (Arms, 2007; Schemo, 2002). Skrla, Scheurich, and Johnson (2001) linked accountability and standardized testing to equity issues, by arguing that the accountability system plays a key role in closing the achievement gap that exists between the performances of students of different genders, as well as different races and socioeconomic statuses. Some have argued that the disaggregating of test data, in fact, is essentially a mandate for schools to deal with existing social inequities, including gender inequity (Herr & Arms, 2004). The standardized testing and accountability are aimed at helping raise performance of schools where students are primarily low income underrepresented minorities, which is what single-sex classrooms are also attempting to do (Riordan, 2002); with accountability and

standardized testing, however, the focus is more on scores rather than on gender equity.

### **Single-sex education versus co-educational classrooms**

Title IX was originally intended as a corrective measure addressing sex discrimination and inequitable resource allocations found in co-educational institutions. An outgrowth of Title IX has been reform efforts such as single-sex schooling, which may ultimately be held to conflict with Title IX and its prohibition against schools receiving federal funds while providing a course or carrying out activities in a sex-segregated manner, solely based on a student's sex (Sax, 2003; Keddie, 2005). Supporters of single-sex education argue that the structure provides a better urban learning environment, not only for girls, but also for at-risk, low income underrepresented minority students, particularly African American males, where students are believed to be more engaged and focused on their learning due to limited distractions from peers (Singh, Vaught, & Mitchell, 1998; Riordan, 1990; Klein, et al., 1994). Riordan (1990) found that minority students in single-sex classrooms exhibited higher scores on standardized tests, as well as improvements in other outcomes such as behavior, completion of school work, heavier course loads, more positive attitudes toward school, and decreased sex-role stereotyping. Sadker and Sadker (1994) found that although some single-sex schools appeared to benefit female students in their academic and social development outcomes, male students tended to perform better in coeducational schools. Spielhagen (2006) found that middle school girls felt safer speaking up in a single-sex classroom without the fear

of boys teasing them. Boys were also found to be more comfortable in single-sex settings where they could compete with other boys. As the students grew older, they became less interested in being a single-sex setting, which seemed to be particularly true for boys because bullying was a greater problem in a boys-only setting.

While girls and boys need not necessarily be treated precisely equally due to their physical, emotional, and social differences, they should be afforded gender equitable opportunities to address their unique needs within the coeducational classroom setting (Kommer, 2006). While examining the 1992 AAUW report's findings, Kommer stated that only a co-educational structure allows each gender to understand and learn from the other, which can lead to a more gender-friendly environment. Moreover, differences within the classroom, including gender, sexual orientation, race, socioeconomic status, religion, disability, etc., can increase the level of acceptance and tolerance among students (Griffiths, 2006). In general, most of the research on single-sex schooling indicates that single-sex classes alone cannot address the structural barriers to gender equity. There are no guarantees that simply separating genders leads to an equitable learning environment or a reduction in stereotypical gender behavior (Zwerling, 2001). Brown and Gilligan (1992), as well as Pollack (1998), argue that there is a need to address the differing needs of both genders, rather than questioning whether or not they receive the exact same education.

**Policy recommendations for remedying gender inequities at the school site**

Research has shown that there are approaches which the school as an institution, including teachers and administrators, can take toward the goal of achieving gender equity. As the front line of the educational institution, teachers and principals can serve as change agents when properly trained and motivated (Fullan, 1993). Toward that end, teacher preparation programs should incorporate the importance of equity (Rusch, 2004). Researchers have found that teacher preparation and leadership training regarding gender equity can increase both awareness and advocacy regarding gender issues (Cambron-McCabe, 2005). Administrators can play an important role in enhancing gender equity and awareness within the school, by monitoring enrollment and achievement outcomes by gender, using gender equity as a criterion for developing curriculum, training and providing resources to staff, observing classrooms and teacher-student interactions, and creating a more collaborative school environment (Tallerico, 1997). Schools and districts can incorporate curriculum integration projects which include gender sensitivity awareness and require teachers and administrators to examine their own attitudes and behaviors (Smithson, 1990).

The school institution and its leadership staff act as a learning organization, which is critical to creating and maintaining a more equitable school environment. Carelli (1998) stated that it is this institutional structure, rather than individuals' actions alone, which promotes biased treatments of groups. Fullan has suggested several key components to change the institution known as "school." Students can

practice good stewardship, be engaged in purposeful and meaningful learning (i.e., analyzing, questioning, and learning to think for themselves), and build effective teacher-student connections, where teaching would go beyond the mere mechanics of teaching. Schools can provide all students with equal access to knowledge.

According to Glickman (1994), schools with low versus high levels of change often differ by their ability to include and involve everyone, to work with the district and the school board to make school-based decisions, to find the time to plan, develop, and revise their efforts through reflection, and to seek assistance.

School leaders must understand that change is a lengthy process which can only occur with shared vision and ownership, working collaboratively with parents and community members, building alliances with businesses, unions, and other significant political partners. In other words, schools must “reculture,” and not merely “restructure” (Fullan, 1993). Teachers are indispensable change agents, who play a key role in change, by influencing, reflecting, and thinking about the change process and its purpose, becoming change agents themselves, and not allowing their personal beliefs, attitudes, and practices to impede student progress (Fullan, 1993; Fredua-Kwarteng, 2005). Gender equity within the classroom setting can be promoted by teachers, by carefully choosing and using unbiased language, by emphasizing cooperation rather than competition in teaching approaches, and by creating a physical organization where classroom seating can be arranged in an equitable manner (Streitmatter, 1990). Research also demonstrates that a more equitable learning atmosphere can be achieved through using multiple types of

textbooks and teaching modalities, connecting concepts and learning to real life situations, eliminating sexist language, and showing fairness in the treatment and expectations of both genders (Belenky, et al., 1986; Engelhard & Monsaas, 1989; AAUW, 1992). Cooperative learning can not only eliminate competition between students, but can also enhance relationship building, build group cohesiveness, encourage cross-gender (and cross-race) friendships, increase academic achievement, and reduce gender stereotyping (AAUW, 1992).

There is some disagreement in the literature regarding the value of single-sex educational environments. Some research indicates that single-sex education, in which the opposite sex is not present in the classroom, may create a more welcoming and fair learning environment. However, Kommer (2006) argues that simply creating a “gender-friendly” classroom without consciousness and reflection on the part of the teacher and students may not, in and of itself, eliminate gender inequities. The treatment of girls and boys should be based upon their individual physical, social, emotional, and educational needs, rather than on gender beliefs and stereotypes.

In addition to teacher training and policies that attempt to ensure gender equity and eliminate sexual harassment, educators in their classroom settings should be knowledgeable on how to help girls and boys deal with the issue of body image that can subconsciously influence their emotional, social, and academic development (Klein, et al., 1994). Several studies demonstrate a strong correlation between sexuality or physical attractiveness and low self-esteem and increased vulnerability,

particularly among girls (Klein, 1988; Thorne, 1993). Klein (1988) and Thorne (1993) advocate that teachers should teach coping strategies to deal with sexual harassment and negative body image, and increase students' awareness regarding their rights and responsibilities.

### **Where gender equity is now and where it needs to be**

It is clear that, despite 35 years of experience under Title IX, much remains to be done in terms of assuring equitable treatment of female and male students, as well as teachers and administrators. Until the ERA is passed, clearly articulating uniform Constitutional protection for females in society as a whole, inequitable treatment and attitudes will continue unabated. Under the protections of Title IX, designed to promote gender equity in schools receiving federal funding, secondary and post secondary sports programs for girls and women have experienced the greatest success. At the elementary level, girls have benefited from an increased awareness of gender discrimination and harassment issues, on the playground and in the classroom.

It would be worth knowing in greater detail how girls are initially selected for identification for eligibility for enrollment in school gifted programs, and how gifted programs in science, technology, advanced mathematics, robotics, etc. are promoted to gifted girls. The literature has shown that gifted girls are eager to learn and to please their teachers at the elementary level, but this diminishes with age and the attendant peer pressures. It will be instructive to examine how a successful gifted program at the elementary level selects gifted female students for non-traditional



subjects such as math and technology, and to see how girls' self-esteem and positive attitudes toward non-traditional subjects endure and flourish throughout their time in elementary school. We have learned that the tenor of the interactions of teachers with their female gifted students is crucial to maintaining their newly emerging senses of self-esteem and pride in displaying their intellects, particularly with respect to sensitively encouraging girls to display their intellectual skills among peers in the classroom setting. This qualitative study can contribute significantly to our understanding of how gender plays out in elementary school gifted programs, having been designed to describe in depth how a single school's gifted program successfully encourages gifted girls to succeed in non-traditional subjects, via observations of gender-sensitive student-teacher interactions in class and noting how artifacts and curricular materials present gender neutral messages in support of gifted girls in non-traditional studies and occupations.

### **How events in the study of giftedness have impacted gifted education in the U. S.: Controversies and the shifting sands of time**

The Industrial Revolution was a time of active research into physical phenomena, attempting to understand how certain traits, including intelligence, are inherited in animals, plants, and humans, through the study of evolution, genetics, heredity, and breeding: Darwin, in 1859, published the *Origin of Species*; Mendel, in 1865, published *Experiments in Plant Hybridization*; and, in 1869, Galton published *Hereditary Genius: An Inquiry into its Laws and Consequences*, and in 1883, coined

the term "eugenics."<sup>2</sup> Binet, Spearman, Simon, and Terman looked at measuring intelligence: in 1904, Spearman mathematically derived "g" to measure general intelligence; in 1908, Binet-Simon published their scale of mental tests; in 1916, Terman published *The Measurement of Intelligence*; in 1917, the Stanford Revision and Extension of the Binet-Simon Scale for Measuring Intelligence was published; and, in 1925, Terman published *The Mental and Physical Traits of a Thousand Gifted Children*. In 1926, Hollingworth published *Gifted Children: Their Nature and Nurture*, and both Hollingworth and Terman conducted long-term studies on highly gifted students with IQ's of 145 or above.<sup>3</sup>

Only with the rise of Hitler in the 1930s, was eugenics pushed from the academic to the genocidal realm. Attempts to identify and educate exceptional students almost ground to a halt over ethical issues, although, in 1950, Guilford developed the Structure of Intellect model of intelligence and creativity, and, in 1952, the Ford Foundation Fund for the Advancement of Education began the Advanced Placement (AP) Program. It was not until the height of the Cold War, however, when the Soviets launched Sputnik in 1957, that the U.S. became seriously interested in identifying and educating a new generation of mathematicians, scientists, and engineers, passing the National Defense Education Act in 1958.

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<sup>2</sup> Selective human mating for hereditary traits (Webster, 1975).

<sup>3</sup> An individual with an IQ of 70 or below is considered to be retarded, 71-99 below average, 100-124 average, 125-144 ["merely"] gifted, 145-159 highly gifted, 160-180+ profoundly or exceptionally gifted (Clark, 2008).

Since Sputnik, national interest in educating students with exceptional talent has ebbed and flowed, depending upon the perceived military or economic threat from abroad. In 1968, the International Baccalaureate Organization Diploma Programme (IB) was developed. Jensen published *How Much Can We Boost I.Q. and Scholastic Achievement?*, in 1969. By 1972, interest in gifted education rose with the publication of the U. S. government's *The Marland Report*, which detailed how U. S. students' education lagged behind other industrialized countries, and Stanley started the Johns Hopkins University Study of Mathematically Precocious Youth (SMPY) talent search. In 1974, the U.S. Department of Education created the Office of the Gifted and Talented, which was subsequently eliminated in 1980. The National Commission on Excellence in Education was created in 1981, yet by 1983, *A Nation at Risk: The Imperative for Educational Reform* again detailed the failure to educate future scientists, mathematicians, and technologists. In 1988, The Jacob Javits Gifted and Talented Students Education Act was passed, yet again by 1993, *National Excellence: A Case for Developing America's Talent* was published, decrying the failure to nurture future talent. Herrnstein and Murray published *The Bell Curve* in 1994. By 2004, *A Nation Deceived: How Schools Hold Back America's Brightest Students* (The Templeton National Report on Acceleration) was published, detailing how failing to accelerate children academically when appropriate has created a culture of bored and underachieving dropouts; in 2006, the Templeton Foundation established the Institute for Research and Policy on Acceleration (IRPA) at University of Iowa's Belin-Blank Center for Gifted Education. And, once again, in

2006, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* was published, outlining how unprepared students were for employment in the international 21<sup>st</sup> century high-tech economy. As Silverman has astutely noted, “[t]he value of the gifted to society often depends on the shifting winds and priorities of their culture” (1997, p. 38).

A second source of interest in the rights and treatment of gifted students arose out of the moral and constitutional consensuses of the civil rights movement (Yudof, 1984). *Brown v. Board of Education* (1954), focused exclusively on racial equality and has laid the foundation for the struggle for the civil rights of women, persons with disabilities, and those individuals identified as gifted. “In the early 1970s, when sex discrimination rose in public consciousness, Congress largely modeled Title IX of the Education Amendments of 1972 after the predecessor civil rights statute, Title VI of the 1964 Act” (Yudof, 1984, p. 167). In 1975, the Individuals with Disabilities Education Act’s (IDEA’s) predecessor statute, the All Handicapped Children’s Act, was designed to protect disabled students’ civil rights and to provide federal assistance to the states. Extreme giftedness is conceptualized by many to be a subset of special needs, which in turn requires special educational services and legal protection, like that offered by the IDEA. As there is no federal legislation to protect the rights of all gifted children in all states, current arguments for a federal mandate for gifted education rest on the principles of fairness and equity imported from *Brown*, i.e., that all children should have equitably funded opportunities for gifted identification and services, regardless of accidents of geography.

Since the time of *Brown*, the gifted education community has been polarized into two diametrically opposed factions: those who believe that giftedness is an elitist upper middleclass white European construct designed to repress the already repressed low income underrepresented non-white minorities, and those who believe that giftedness describes students with different abilities of learning who require special educational services, particularly children who are identified as precocious or profoundly intelligent (Clark, 2008 & 1997; von Karolyi & Winner, 2005; Winner & von Karolyi, 1998). Why focus on the educational needs of gifted children, when so many of our children lack safe access to a basic education? According to Clark,

...we are compelled by our knowledge of human growth to use time and resources to differentially nurture those who give evidence of developing gifts and talents. The consequences of ignoring the needs of the brightest and most promising among us can be devastating. If society is to move forward, find solutions to the overwhelming problems it faces throughout the world, realize its goals for peaceful coexistence of all humankind, and ensure the very continuation of its existence on this planet, we need the ideas our brightest minds can produce, and we will continue to need them far into the future. Such minds do not come fully formed at birth; giftedness must be nurtured (2008, p. 5).

Resnick and Goodman (1994) add that policymakers must address the challenges of finding

ways to make the culture of the society supportive of efforts to develop the talents of the young ... and to encourage the emergence of as varied a developed pool of talent in the society as possible; ... [modifying] the program of the schools so that they can be adequate ... for those who have a curiosity and taste for achievement and individual effort which is not visible in the rest of the age group; ... [and, making] especially able young people the visible pacesetters within their schools so that others can take pride in their achievements and aspire to earn like rewards (p. 117).

K-12 gifted education can take many forms: early entrance to kindergarten or first grade, early and accurate gifted identification, pre-assessing students for mastery, multi-age special day or self-contained class, curriculum compacting, counselors who are trained to counsel gifted students, cluster grouping, continuum of gifted educational services integral to the general education school day, enrichment activities, subject or grade acceleration (skipping)<sup>4</sup>, flexible or part-time grouping, cooperative learning, tracking, differentiated curricula, advanced placement (AP) classes, International Baccalaureate (IB) programs, appropriate administrative and teaching staff development on gifted education, academic talent searches, scholarships and academic competitions, academic summer and weekend programs, secondary residential schools, postsecondary educational opportunities, mentoring, independent study, services for underachievers, dual enrollment, early college entrance, services for linguistically diverse/culturally divergent/and/or economically disadvantaged gifted students, long-distance or on-line charters, etc. (Reis, 2007; Davidson Institute for Talent Development, 2007; CDE, 2006; Clark, 2006; Colangelo & Davis, 2003; Rogers, 2002; NAGC, 2000). Although gifted educational instructional options and strategies are applicable to K-12, realistically, at the senior high school level, while some students may start with honors classes, most gifted students end up taking AP or IB classes, dual enrolling in college, or exiting high school early altogether and enrolling directly into college.

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<sup>4</sup> The concept of acceleration is controversial in some academic circles, depending upon the educator's belief system with respect to the social construct of giftedness: those who see extreme giftedness as a special need support acceleration, while those who see giftedness as elitism favor an enriched or differentiated curriculum in the general education classroom.

The flexibility of the model of individualized education based on a student's academic and emotional needs, which gifted education has pioneered, e.g., the differentiated curriculum, has been adopted successfully for students who are identified as having special needs, as well as those students in general education with asynchronous development. Advocates for a federal gifted statute, including those who support broadening the Individuals with Disabilities Education Act (IDEA) to include giftedness and the NCLB to require showing advanced performance levels for those identified as gifted, note that capacity for curricular flexibility is already built into much of our educational framework; all that is missing is enforcement capability and a national political will.

The federal government enacted The All Handicapped Children's Act in 1975, later changed to the Individuals with Disabilities Education Act in 1992, to provide special education which would serve special needs students with specific disabilities, including hearing and visual impairments, language or speech disorders, severe orthopedic impairments, other health impairments (e.g., AD/HD), autistic-like behaviors<sup>5</sup>, mental retardation, serious emotional disturbance, and specific learning disabilities; giftedness is not a category of eligibility (A Composite of Laws, 2007). Special education guarantees a student a Free Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE), interpreted as a "basic floor of opportunity", not as aiding a student to achieve her or his intellectual potential

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<sup>5</sup> Includes, e.g., autism, autistic spectrum disorders, and Asperger's syndrome.

(*Hendrick Hudson Dist. Bd. of Ed. v. Rowley*, 458 U.S. 176 (1982)). Gifted students may suffer from various emotional problems, including the rage to master,<sup>6</sup> introversion, and low self-esteem; twice-exceptional students,<sup>7</sup> whose giftedness may mask or compensate for an underlying disability, may be found to be ineligible for special education services altogether, if it can be shown that they can access the general education curriculum.<sup>8</sup> When the No Child Left Behind Act (NCLB) was signed into law in 2002, like the IDEA, no specific provisions were made for gifted students: Clarenbach has declared that “while competence is surely a solid goal for most Americans, striving for average sets the bar too low in our schools” (2007, n.p.; White, 2007). This has led to inequitable situations such as students “of color” protected by civil rights laws outside the gifted education arena, yet who are without legal recourse when underrepresented in gifted programs (Zirkel, 2004). Hopefully, the upcoming reauthorization of the NCLB will lend itself to presenting another opportunity to advocate for the rights of gifted students.

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<sup>6</sup> Showing “an intense drive and an obsessive interest in the area in which they are gifted” (Winner & von Karolyi, 1997, p. 49).

<sup>7</sup> “*Twice-exceptional* is a term used to identify students who are gifted and mildly to moderately disabled (LD [learning disabled], communication disordered, and/or behavior disordered)” (Clark, 2008, p. 363). “[T]he incidence of learning disabilities in the gifted population is as least as high as the incidence in the general population (10-15%), and some preliminary investigations suggest that the risk of learning disorders increases as a function of IQ” (Silverman, 2003, p. 533, referring to Silverman, 2002). See also Millman (2007), for a discussion on legal issues.

<sup>8</sup> A petition for a writ of certiorari, on petition for review from the Supreme Court of the State of California, in the case of *Levi v. O’Connell* has been filed with the U.S. Supreme Court on the issue of whether or not the IDEA and the NCLB expressly “exclude extremely gifted children from receiving a publicly funded education tailored to their highly specialized psycho-social needs” (2007, p. i).



The IDEA, which when originally passed in 1975 was to be funded by the federal government at the 40 percent level, reached the 17 percent funding level by 2002 (NSBA, 2007). Today there is no federal mandate for either provision or funding of direct services for students identified as gifted at the federal or state level. The Jacob K. Javits Gifted and Talented Students Education Act of 1988 established the National Research Centers on the Gifted and Talented, e.g., the Belin-Blank International Center for Gifted Education and Talent Development at the University of Iowa, and “provides limited funding without any mandatory right,” in the form of discretionary and competitive grants to support research on academic improvement and teacher quality programs “serving students traditionally underrepresented in gifted and talented programs, particularly economically disadvantaged, limited English proficient (LEP), and disabled students, to help reduce the serious gap in achievement among certain groups of students at the highest levels of achievement” (Jacob K. Javits Gifted and Talented Students Education Program, 2007, n.p.). The level of funding for the 9.1 million children in gifted programs in the U. S. is limited: despite the fact that the America Competes Act was recently passed to fund math and science education initiatives for secondary school students, there continues to be no federal funding for direct services to gifted students, only \$9.6 million in Javits grants was awarded to researchers throughout the entire country in 2006, that level of funding remained unchanged in 2007, and \$0 has been proposed for the 2008 budget (A Child’s Day: 2003, 2007; Jacob K. Javits Gifted and Talented Students Education

Program, 2007; National Association for Gifted Children, 2007; Davidson Institute, 2007).<sup>9</sup>

Not all states offer equal and equitable educational opportunities for gifted students. Approximately eight states have “laws that approach the strength and specificity of the...IDEA,” while an additional four offer procedural or individual substantive rights similar to those found in the IDEA which could potentially “serve as the basis and avenue for litigation” (Zirkel, 2005, n.p.). Six states mandate and fully fund gifted programming, 21 states mandate gifted programming but only partially fund it, four states mandate but do not fund, 11 states do not mandate but will fund gifted programs (including California<sup>10</sup>), and nine states (including the District of Columbia) neither mandate nor fund gifted programming (Davidson Institute for Talent Development, 2007).<sup>11</sup>

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<sup>9</sup> The Javits funding includes a 2004 multi-year grant of \$354,839 to an individual educational researcher at U.S.C.

<sup>10</sup> Cal Ed Code §§ 52200-52212 (2007): § 52200 (b) “It is ...the intent of the Legislature to provide for the identification of gifted and talented pupils by individual school districts...§ 52202. [T]he demonstrated potential abilities that give evidence of high performance capability shall be defined by each school district...§ 52205. The Superintendent of Public Instruction shall: (a) Apportion funds...to each district for which an application to offer programs...has been approved by the State Board of Education... §52206 (b) Each participating governing board [of school districts that elect to provide gifted programs] shall determine the most appropriate curricular components for participating pupils within its district...§ 52211. The Superintendent of Public Instruction shall apportion funds to school districts...[by (a) [d]ivid[ing] the total funding available for gifted and talented education (GATE) by the statewide total units of average daily attendance in kindergarten and grades 1 to 12...for all school districts participating in the GATE program...(b) Multiply the dollar amount computed...by the average daily attendance...(e) [which] shall be increased annually by the percentage inflation adjustment...”

<sup>11</sup> Yet, in the wake of NCLB, the National Association for Gifted Children points out that there are examples of school districts with strong school leaders and communities which demand that their school districts continue to offer services to their gifted students, including, e.g., Cherry Creek (Colorado), Madison County (Kentucky), Rockwood (Missouri), and Kerrville (Texas) (Kenney, 2007).

Because resources for gifted education are disparately distributed from state to state, and even within states from district to district<sup>12</sup>, each state must determine the cost of providing equitable supplemental resources for the gifted to receive an appropriate education. A

resource-cost model approach involves costing out the physical ingredients of the generally accepted set of required resources for providing an appropriate education to a child with a given set of educational needs...The design of differentiated opportunities for highly able or gifted students...is somewhat comparable to the design of opportunities for students with learning disabilities in that the critical element is individualization or adaptation of the student's program (Baker, 2001, p. 230).

Baker and Friedman-Nimz have measured resource adequacy or vertical equity<sup>13</sup> (“the unequal treatment of unequals”) for gifted children, estimated the “expected human resources costs of delivering services to gifted children in elementary schools”(2003, n.p.), and performed ex post evaluations of aid allocations, finding that “program mandates and funding may be effective tools for increasing the

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<sup>12</sup> LAUSD has almost nine percent of its students enrolled in gifted programs, and the county and state each have a little more than eight percent (CDE, 2007). In LAUSD, to be identified as gifted in intellectual ability requires a combination of at least one semester of school staff observation, state standardized math and/or language arts test scores of 78<sup>th</sup> percentile or above, advanced achievement scores, a GPA of 3.5 and above, and “superior cognitive abilities indicated on standardized administration of an intelligence test [Raven Progressive Matrices] given by a LAUSD school psychologist,” with a 99.9<sup>th</sup> percentile score required for participation in the highly gifted program. Although the Schools for Advanced Studies (SAS) program was developed in 1998 as a way to offer more regionally based gifted programs which are geographically accessible for students and their families throughout the 710 square mile area of LAUSD, many LAUSD gifted programs continue to be situated within gifted magnet schools with race-based admissions, leading to the Gifted and Talented Program being located within Student Integration Services, in the Specially Funded Programs Division (LAUSD, 2007); this may change with the recent U. S. Supreme Court decision apparently banning race-based admissions to public schools not under federal court orders to desegregate (*Parents Involved in Community Schools v. Seattle School Dist. No. 1, et al.*).

<sup>13</sup> “Vertical equity, or the idea that students who bring certain educational needs to the classroom require additional resources to address those needs within the educational process, is useful as a way to conceptualize school responsiveness” (Rodriguez, 2004, p. 7).

distribution of opportunities for gifted children” (2004, p. 59); Baker and McIntire (2003) add that the equity and adequacy of resources should be determined from state funding, including ex ante and ex post evaluations of state policies. All that is missing from this discussion about these calculations is a funded federal mandate for gifted education.

### **The social construct of giftedness**

Hollingworth in the 1920s advocated “mental testing” of “superior deviates” (Gustafson, 1927, p. 309). As indicated earlier, researchers and psychometricians over the years have attempted to measure intellect through creating various mathematical models to simulate what would eventually be called “IQ” (intelligence quotient), including, e.g., Terman and the Stanford-Binet, Wechsler’s intellectual or psychological maturity scales (WISC), and Guilford who devised a broader three-dimensional morphological model of intelligence known as the structure of intellect (SOI) (Sternberg & Grigorenko, 2000-2001). Referring to the concept of giftedness as an inherent “differentness” or the reflection of a different ability to learn, Silverman has concluded that

...the construct of giftedness as asynchrony...is not related to potential for success any more than its mirror image---retardation---is related to potential for success. It is a different set of experiences throughout the life span related to atypical development, and it occurs in all cultures (Silverman, 1995), all ethnic groups, and all segments of society...(1997, p. 38).

On the other hand, many have argued that the label “gifted,” rather than referring to a different learning style, is a capricious and arbitrary academic construct devised by the dominant culture. Glassman, in discussing Vygotsky, Luria, and

Dewey, has stated that “educators forget the power and importance of everyday activities and social context at their peril” (2001, p. 13).

Today a person who is identified as profoundly or exceptionally gifted may be referred to as a “genius”; McDermott notes that the Western term “genius” has shifted in meaning from its appearance in the Renaissance to the current concept of “a particular kind of special person with an established position in society,” arguing that “[t]heories of genius are not in our lives to help us explain differential learning; they are part of what must be explained, accounted for, and confronted” (2006, p.299). Putting the notion of “situating genius” as a pejorative and potentially gendered construct, McDermott adds that

Everyone solves problems. There is no difference between what scientists do in laboratories and what housewives [*sic*] do in kitchens. Everyone solves problems defined by others. Anyone lucky enough to notice a breakthrough while reconceiving the heavens or reshaping a meatloaf is simply making one move that counts...Others make equally coherent and interesting moves, but only one makes the last move, and that person, even the wrong person, gets called the genius...(2006, p. 296, referring to White, 1949).

Borland puts a more positive spin upon this notion:

that a construct is socially constructed is to state that it gains its meaning, even its existence, from people’s interactions, especially their discourse. Concepts and constructs that are socially constructed thus acquire their properties and their influence through the give and take of social interaction, not through the slow accretion of empirical facts about a preexisting entity, at least not exclusively (p. 7)...[O]ur primary task is either to construct the most educationally rewarding and equitable concept of giftedness we can or to find a way to move beyond the construct altogether to a vision of human development and learning that embraces the indescribable diversity of human consciousness and activity in a way that places limits on no child (or adult) (1997, p. 18).

### **Current status of gifted children in the U. S.**

The U.S. Census Bureau, in the recently-released *A Child's Day: 2003 (Selected Indicators of Child Well-being)*, found that from 1994 to 2003, 13.4 percent of school-aged children currently enrolled in school who were ages six to 11 years, and 23.5 percent of those ages 12 to 17, a total of approximately 9.1 million children ages 6 to 17 years, were enrolled in gifted classes (2007, p. 17). We know that these percentages of gifted students are underestimated, due to the fact that these are children who were currently enrolled at school, identified as gifted, and enrolled in gifted classes, which would not include children who were not currently enrolled in school (e.g., were home-schooled or were enrolled at post-secondary institutions), were not identified as gifted, or were not enrolled in gifted classes. This data also does not indicate the distinction as to whether or not gifted children currently enrolled in school were “merely” or highly to profoundly gifted,<sup>14</sup> which would dictate the level of services appropriate for their educations.

Statistically it is estimated that [profoundly intelligent] individuals with an IQ of 145+ appear in the population at a ratio of 1 in 1,000 and individuals with an IQ of 160+ appear in the population at a ratio of fewer than 1 in 10,000 and those with an IQ of 180+ appear in the population at a ratio of fewer than 1 in a million. Because the most commonly used IQ tests...have a ceiling of 159, it is difficult to determine how many individuals have IQ's above 160 (Davidson Institute, 2007, n.p.).<sup>15</sup>

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<sup>14</sup> NCLB defines “gifted and talented” as giving “evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities” (Title IX, Pt. A, § 9101 (22), p. 544; NAGC, 2007, n.p.).

<sup>15</sup> Lohman discusses the impact of the Flynn Effect, in which “...norms for both ability and achievement tests change over time. The much-documented rise of scores on ability tests over the past 70 years (Flynn, 1999; Thorndike, 1975) makes it imperative that schools use tests with recent norms.

### **Underachievement and the identification controversy**

Independent of one's beliefs regarding the artificial construct surrounding the label "gifted," many such children may have limited social competence, and if left unchallenged and unaccommodated (particularly at the onset of adolescence) in ability groupings, may become bored with school, depressed, anxious, or suicidal, becoming underachievers, oftentimes dropping out of school early, or worse (Rayneri, Gerber, & Wiley, 2003; Sullivan & Rehorn, 2002; Neihart, 1999; Norman, et al., 1999; Peterson & Colangelo, 1996). Faced with this unsatisfactory alternative, school districts and states which choose to offer gifted programs must adopt a psychometric instrument which, while testing for talent, ability, and achievement appropriately, factors in social inequality, and is inclusive of the broad spectrum of students underserved in urban settings, including students who are low income underrepresented minorities and/or English language learners; the days of Terman and his upper-middle class white students<sup>16</sup> are long gone (Jeltova & Grigorenko, 2005; Robinson, 2003; Rogers, 2003; Olszewski-Kubilius, 2003; Callahan, 2003; Gallagher, 2000). Hoge (1988), among others, has noted that constructs of giftedness have been developed over the years by a number of researchers, including Gardner, Sternberg, "Feldhusen (1986[; 2001]), Gagne (1985), Rabinowitz and Glaser (1985), and Renzulli (1986)" (p. 15). Today, teachers,

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Gains have been particularly large on figural reasoning tests, such as the Raven Matrices. Broader measures, such as the Stanford-Binet and Wechsler scales, have shown smaller, but consistent, gains of about three IQ points per decade" (2005, p. 350; Neisser, 1997).

<sup>16</sup> Terman did break the gender barrier, however, by studying both girls and boys (Kerr, 2000).

functioning as gatekeepers for gifted and talented programs, refer students for gifted identification utilizing their own gifted constructs (Hany, 1995).

In the early 1960s, the Raven Progressive Matrices, an abstract, non-language-based, spatial reasoning test, was introduced as an initial screening device to determine giftedness, with the objective of broadening the types of students identified to include non-native English speakers. Over the years, large urban school districts such as LAUSD, with predominately low income underrepresented minority student populations, have attempted to increase the diversity within their gifted programs by substituting the group-administered Raven for IQ tests such as the Stanford-Binet or the Wechsler, which are administered individually by psychologists. Unfortunately, rather than serving to identify a more diverse population, this has functioned to reduce the number of appropriately identified and served highly gifted students; solutions to this problem will require “a willingness to move beyond one’s current beliefs – especially to discover what might be wrong with them – [which] has always characterized more thoughtful professionals in all domains” (Lohman, 2006, p. 38).

### **The role of gender: Determining outcomes of talent development, labeling, and gifted education**

Fox and Soller (2007) have identified four major issues relevant to gender equity and gifted students:

- The nature and extent of sex/gender differences in abilities, achievements, and interests within gifted populations.



- Bias in the process of identification of gifted children that have [sic] implications for access to programs or resources.
- The differential impact of different program models for equity in educational outcomes.
- Barriers to adult achievements in terms of educational attainment, careers, and recognition for excellence (p. 573).

Those students who learn at an accelerated pace and who would be likely candidates for appropriate gifted services may be selected to receive services through a subjective process, potentially involving gender bias, including utilizing male talent development models as the norm (Kerr, 2000). Renzulli adds that “far too little research has been carried out on creatively productive women; and therefore, we may be in error when we casually apply the same [identification] models to both genders” (1999, p. 134). Research suggests that lack of equity may result in organizational, interpersonal, or personal barriers, which can reflect gender preferences that may hinder female students from achieving equalities of outcomes, including fear of success (Indvik, 2004; Peters, Grager-Loidl, & Supplee, 2000; Meyer, 1989). Barriers to gender equity may begin within the school settings as early as preschool and can culminate in detrimental adolescent female behaviors in senior high school. Girls are identified as gifted in equal numbers to boys in elementary school, but by the middle of senior high school girls tend to drop out of gifted programs at rates greater than boys (Sadker, 1999). Early on, gifted female students may be discouraged *subconsciously* through stereotyping and sexism by parents, teachers, counselors, administrators, and peers from fully participating in math, science, and technology activities and courses which might ultimately impact

occupational choices, and might cause girls and women to lean toward more “comfortable” studies which involve preferred verbally-based subject matter (Hoagies’ Gifted, 2007; Fox & Soller, 2006; Assouline & Lupkowski-Shoplak, 2005; Reis, 2001; Helwig, Anderson, & Tindal, 2001; Rose, 1999; Eccles, 1985).

Differences in math achievement may further be affected by “societal influences, school mathematics curricula, teacher attitudes, student attitudes and achievement-related behavior, and classroom processes” (Reyes & Stanic, 1988, pp. 39-40). Girls’ favorite subjects may be in the liberal arts, such as social studies, yet computers in their classrooms or computer labs may not have software to support their interests, effectively discouraging them from maximizing their utilization of the computer (Hanor, 1998). Lubinski and Benbow have asked: “[w]ould insisting on equal representation in the math-science pipeline impose a ‘modern’ constraint on both genders, motivated by a contemporary ideology that is as psychologically constraining as the earlier unenlightened male-dominated status-quo?” (1992, p. 65). We know that gifted girls suffer from “decreased self-esteem, at risk-behaviors (eating disorders, substance abuse, and unsafe sex), inequity in the classroom, and the culture of romance (obtaining status through relationships with males)” (Kerr & Nicpon, 2003, p. 503; Kerr, 2000). To maintain girls’ senses of self-esteem, it behooves us to identify girls early<sup>17</sup> and to model and teach gender equity in the

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<sup>17</sup> Mathematical precocity can be identified at an early age; “[t]he experiences offered by parents (e.g., for activities involving countable objects vs. social play; Maccoby & Jacklin, 1974), surely interact with whatever biological propensities exist” (Robinson, Abbott, Berninger, & Busse, 1996, p. 350). Lubinski and Benbow caution, however, that “[g]iven the ever-increasing importance of quantitative and scientific reasoning skills in modern cultures, when mathematically gifted individuals choose to

classroom, as well as to offer families support for their girls' giftedness, if we are to maximize girls' potentials and self-concepts, which tend to vary over time, and to "construct alternative paths to career achievement, paths that allow a smoother intertwining of relationships and careers" (Tomlinson-Keasey, 1998, p. 35; Freeman, 2000; Stoyanova, 1995; Colangelo & Assouline, 1995). Reis found in her research that eminent women "were able to combine meaningful work with what they considered to be a content personal life, and most achieved some level of harmony and balance among their talents, their personal lives, and their contributions to society" (2005, p. 241). Only longitudinal studies on the role that gender plays "in determining outcomes of talent development, labeling, and gifted education" (Subotnik, 2006, p. 380) will give us the answers as to what most affects gifted girls and women in making positive long term decisions about their lives (Jayaratne, Thomas, & Trautmann, 2003; Subotnik & Arnold, 2000; Hollinger & Fleming, 1985). It has been noted that gender "differences in math, verbal and spatial skills have been declining over recent years" (Sadker, Sadker, & Klein, 1991, p. 309). Lubinski, Benbow, and Morelock (2000) add that we should therefore not restrict ourselves in our studies about gender-based differences among gifted girls to personal attributes, but rather we should "incorporate measures of spatial and mechanical reasoning into our correlational and experimental designs, in addition to assessing critical vocational interests and values and life-style preferences" (p. 644),

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pursue careers outside engineering and the physical sciences, it should be seen as a contribution to society, not a loss of talent" (2006, p. 316).

especially given the fact that, e.g., “women hold just 25% of all professional IT positions” (Reis & Graham, 2005, p. 15).

## Chapter 3

### Methodology

#### Introduction

As discussed in Chapter 2, gender equity in the treatment of girls and boys continues to be an educational and societal problem. In the context of limited governmental resources, the No Child Left Behind and Individuals with Disabilities Education Acts not expressly protecting the rights of gifted students, and no federal mandate for gifted education, the issue of gender equity becomes particularly critical in light of the fact that gifted education services are delivered only to students who have been identified as gifted.

There is no national legislation mandating the identification, services, and funding for gifted students. The state of California allows school districts the option of establishing gifted programs with state funding, giving districts with gifted programs the discretion to determine how students will be identified and served. In 1998, in response to a lack of geographically accessible seats at magnet schools for highly gifted students, Los Angeles Unified School District (LAUSD) established Schools for Advanced Studies (SAS) Program Demonstration Sites throughout the district; Pacific Elementary School (“Pacific”)<sup>18</sup> is one of these sites. Also, in 2000, the California education codes for K-12 gifted instruction were changed from

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<sup>18</sup> Pseudonym.

requiring gifted programs to offer 200 minutes of gifted instruction each week to gifted students through pull-out or afterschool programming to mandating that differentiated gifted instruction be delivered throughout the instructional day (Cal Ed Code §§ 52200-52212, 2007).

### **Design issues and options**

This will be a case study focusing on gender equity in an elementary school's gifted program, in order to answer the question regarding the assumption that numerical gender parity in a gifted program at an urban public elementary school describes the complete picture of the intersection of gender equity and gifted education. The units of observation will be the students, teachers, and administrators at Pacific.

Pacific was chosen for having the stable leadership of a principal in place since 1999, having an SAS gifted program, and having a racially and socioeconomically diverse student population which includes one of the largest percentages of homeless students in LAUSD,<sup>19</sup> which will allow for a study of ethnically and socioeconomically diverse gifted and talented students. Pacific is a small, high-scoring neighborhood school, located within a mile of the beach, open since 1926, with 450 students in grades kindergarten through five, 23 teachers, and two administrators. Twenty-three percent of Pacific's students are identified as gifted; approximately 10 percent of the students are homeless, many coming from a local homeless shelter within walking distance of the school; twenty-six percent of

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<sup>19</sup> See Appendix A: Principal's letter of permission to conduct research.

its students are eligible for free and reduced price meals; it is a Predominately Hispanic, Black, Asian and Other Non-Anglo (PHBAO) school, with 4 percent American Indian/Alaska Native, 9 percent Asian/Filipino/Pacific Islander, 15 percent African American, 26 percent Hispanic/Latino, and 47 percent white students; 8 percent are English language learners; and, 13 percent are in special education (DataQuest, 2008; conversation with Pacific's principal). Pacific's 2007 Academic Performance Index (API) score for academic performance and growth is 884 out of 1,000, exceeding the state Board of Education's statewide target goal of 800 which had been mandated by the California Public Schools Accountability Act of 1999. Its statewide rank is 9 out of 10, or the 90<sup>th</sup> percentile, and its similar schools rank (compared to schools with some of the "same opportunities and challenges") is 10 out of 10, putting its students' academic performances in the top 10 percent of the state (DataQuest, 2008).

This naturalistic inquiry will utilize both qualitative and quantitative data which will be collected using mixed methods, with qualitative data gathered through purposefully sampled interviews with teachers and administrators, classroom observations, and descriptions of various artifacts. This mixed methodological and analytical approach will be a combination of inductive, deductive, and content or thematic analysis, as well as statistical or data analyses from aggregated data from the California Department of Education databases.

The research questions to be answered by this study are:

1. What kinds of gender-related interventions are currently in place?

2. How do schools identify and serve gifted students, including those who are twice-exceptional?
3. Does gender play a role in either the selection or treatment of gifted students?
4. Are the current gender-related interventions “effective” in the selection of girls and boys for gifted identification and services; i.e., is there an approximate numerical gender parity between the numbers of girls and boys who are identified as gifted, and are girls and boys treated equally with respect to the provision of the gifted services which they receive?

An open-ended interview will be conducted with 10 teachers, the principal, and the assistant principal, in order to determine knowledge of and attitudes toward gifted and talented girls and boys, as well as on the issue of gender equity with respect to the treatment of gifted girls and boys. To obtain 10 information-rich cases in this small elementary school, all third through fifth grade teachers, as well as two of the three second grade teachers will be chosen for interviews and classroom observations, to provide a sufficient number and variety of observations.<sup>20</sup> Fieldwork will be conducted during the 2007/2008 school year, from late September 2007 through the end of January 2008, accomplished by scheduling at least two days at school each week, to observe both math and general education classes. Data analysis will take place from February through April 2008.

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<sup>20</sup> The administration of annual state standardized tests is mandated for grades two through 11 in California, and LAUSD also mandates its administration in grade one; the identification of gifted students in grades kindergarten through grade two begins with a teacher or parent referral, making the number of such identifications limited.



**Observation checklist**

Observations were made of participating students, teachers, and administrators of the gifted program at Pacific, in order to learn how girls and boys who are identified as being gifted are treated. There were four hours of observations per classroom, in each of the 10 classrooms. As a rule, two of the four hours of observations per class were made in the mornings, when gifted students are taught differentially in their general education classrooms, while the other two hours of classroom observations took place in the afternoon, after lunch, when upper grade students move to their ability-grouped math classes. Classroom observations included how teachers treat gifted girls and boys, differentiation of curriculum and instruction for gifted students in the general education classroom, differences in how often gifted girls versus gifted boys are called upon in class, where female and male gifted students are seated, how gifted girls and boys interact with each other, etc. Observations were made of how female and male students and teachers interact on a daily basis when they have specific activities only for students who are identified as gifted, including changing math classes after lunch, attending optional gifted afterschool math enrichment classes, etc.

Artifacts, including posters and curricular materials were observed for gender and gifted sensitivity, etc. Documents which were observed/reviewed included: federal/state/district/school site Title IX gender equity documents/bulletins/posters; gender sensitive classroom curricular materials, including textbooks; state government gifted identification bulletins; school district gifted student

identification, screening, and verification documents/bulletins; school site gifted committee referral and screening documents; gifted budget documents (school site, local regional sub-district, district, and state); appropriately differentiated gifted classroom curricular materials, etc.<sup>21</sup>

### **Interview protocol**

In order to examine variations of teaching strategies, all upper grade teachers and two of three second grade teachers were chosen for qualitative interviews, which were conducted with 10 teachers (in their classrooms), the principal, and the assistant principal. The interviews and observations were conducted from the end of September 2007 to the end of January 2008. Research questions were reviewed prior to administering teacher and administrator interviews. The open-ended interview protocol was pretested prior to its administration, to refine the instrument and to determine the time required for the interviews.<sup>22</sup>

### **Situating the researcher: Ethical issues, validity, reliability, and confidentiality**

Ethical issues regarding degree of objectivity or impartiality could potentially arise for the researcher regarding studying the gifted program at Pacific. As a member of LAUSD's now-defunct voluntary Ad Hoc Gifted Committee for parents of highly gifted students almost a decade earlier, this researcher helped create the prototype for the district-wide gifted program, the Schools for Advanced Studies (SAS), one site of which is located at Pacific. Although the researcher's children

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<sup>21</sup> See Appendix B: Observation checklist.

<sup>22</sup> See Appendix C: Interview protocol.

were permitted out of their local neighborhood school and permitted into equi-distant Pacific from 1994 through 2002, the current principal and one of the fourth grade gifted coordinators are two of the few school staff remaining from that period of time. Since few staff members remain from that time, it would be instructive to see the school and its gifted program from a potentially more impartial vantage point that the passage of time can bring. In evaluating the attributes of Pacific's gifted program on the issue of gender equity, all attempts will be made to look at its adaptation of, and not fidelity to, the district's gifted program's original precepts of gifted and highly gifted students' local geographical access to higher level gifted programs, math acceleration, and teacher training in gifted education. Having self-knowledge of potential sources of bias and acknowledging these to persons involved in the research should help to reduce bias in data collection and analysis.

Every attempt will be made to make objective observations, to draw observer-neutral conclusions, and to make timely field notes, as well as treat information gained by the researcher during the course of this study as confidential.<sup>23</sup> Validity of and confidence in the findings will be addressed through methodological triangulation: data obtained from teachers, administrators, documents, record reviews, observations, and aggregated statistical data from the California Department of Education database.

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<sup>23</sup>Family Educational Rights and Privacy Act (FERPA) guidelines will be followed in the examination of all student-related documents.

The researcher intends to maintain a position of “empathic neutrality” throughout “participant observation, depth interviewing, [and] detailed description” of this case study, all the while being “dedicated to getting as close as possible to what is really going on” (Patton, 2002, pp. 53 & 93, respectively). Since this is a qualitative case study of a single small urban elementary school, data collected and conclusions drawn should not be generalized to a larger scale, which constitutes a definite limitation of this study. The researcher will examine what this study added to the field, including proposing areas for further longitudinal investigation which could be undertaken by future researchers to further elucidate the impact of gender equity on gifted education (and vice versa), so that formulating the next steps to be taken in public gifted education policy can be made with data supported by solid research and not emotion.

### **Data analysis**

The analysis and write-up of fieldwork was conducted from February through April 2008. This was a qualitative study of gender equity practices within a single gifted program in an urban public elementary school. Some 40 hours of observations were made in classrooms about how female and male students are chosen for and given services in a gifted program, including teaching practices. These field notes, including personal reflections, were summarized, looking for patterns of gender equity-related behavior in the treatment of gifted students. Interviews were administered to 12 staff members, including the principal, the assistant principal, and 10 teachers. To give voice to participants in this study, verbatim transcripts of these

interviews were analyzed for trends in gender equity. Categories for analysis included an interviewee's familiarity with Title IX, familiarity with gifted identification procedures, awareness of gender equity issues with respect to gifted students, as well as other categories of analysis which emerged as the data presented themselves. Miscellaneous documents, including classroom and administrative artifacts, textbooks, and student rosters, were analyzed, looking for patterns of gender equity practices reflective of the presence and effectiveness of gender-related interventions. Data from the state's and LAUSD's aggregated student statistical databases were reviewed for gender and gifted population trends, to see if numerical gender parity in the gifted program has remained constant over time. Evidence in the form of school district memos and bulletins on gender equity and gifted issues was compared to state and federal mandates and guidelines, to check for consistency. Informational interviews were conducted with afterschool program providers and LAUSD administrators. Data was informally coded to look for patterns in key areas to be examined and categorized, in a constant comparative method using inductive and deductive approaches. All data and trends were reviewed to see if the current gender-related interventions are "effective" in the selection and treatment of girls and boys for gifted identification and services; i.e., to see if there is both an approximate numerical gender parity between the numbers of girls and boys who are identified as gifted, and equal treatment of girls and boys with respect to the provision of the gifted services they receive. A focus of this study was an appreciative inquiry to understand and illuminate the quality of processes, implementation, and outcomes at

Pacific (Patton, 2002). After analyzing this data and noting trends, these findings were compared with those of the previously cited researchers for consistency, as well as checking for the goodness of fit with this study's hypothesis regarding numerical gender equity and the story it does or doesn't tell. Recommendations for further research to close informational gaps were made, while noting this study's potential weaknesses which may be cured through future studies. Public policy recommendations were proposed.

## **Chapter 4**

### **Study findings**

#### **How the research questions guided the fieldwork**

This chapter examines public elementary education policy implementation, focusing on gender equity and mentally gifted issues. This analysis relied on data gathered through interviews, classroom observations, curricular review, student rosters, handouts from LAUSD meetings over the last 12 years, LAUSD magnet school brochures, emailed data from the Assistant Superintendent of the LAUSD Planning, Assessment and Research Division, and public data from the California Department of Education student database.

I set out to present a detailed picture of how the process of selecting gifted elementary school students impacts gender equity, by observing how closely teachers' practices appeared to match their answers to my interview questions and by examining the LAUSD gifted student database for trends over the past two decades. I wanted to discover what kinds of gender-related interventions were in place in the school district and at school, so I asked about knowledge of gender equity issues and Title IX. I examined the issue of whether gender plays a role in the selection or treatment of gifted students by looking at the process of identifying and serving gifted students, including those who are twice-exceptional, by asking about knowledge of gifted laws and how children are identified and served at the school and district levels, by comparing rosters of children who were proposed for identification with those who were deemed eligible and those who were rejected, as

well as by examining data from the LAUSD gifted student database. I looked at which students attend special after-school programs and interviewed the instructors of those programs on their beliefs of how gender equity impacts gifted students. And, finally, I spoke with both the LAUSD district gifted and talented program coordinator and an Assistant Principal of Student Counseling at a local middle school with an honors Schools for Advanced Studies (SAS) program, to try to understand how the decision was made to change the LAUSD gifted screening testing criteria and to see how those testing changes had affected students' eligibility for admission and services in this and other programs for highly gifted students.

### **The process of teacher selection for the study**

I waited until the end of the first month of the 2007/08 school year to let some of the beginning-of-the-year "dust" die down, emailing the principal regarding a good time to start my field work. When we met at the end of the following week, I brought him a hard copy of my proposal, and he told me that he would meet with 10 teachers in grades two through five who might be interested in working with me on gifted education issues, and that he would get back to me. Within a few days the principal emailed me with a list of teachers who said that they would participate in my study, after having reviewed copies of my interview protocol, which gave me access to all of the third, fourth, and fifth grade teachers, and to two of the three second grade teachers, for a total of 10 teachers. He allowed teachers to do this as part of gifted and talented professional development for their Schools for Advanced Studies (SAS) program, on school time. He advised me to "...begin with 5th grade



and go down as soon as possible," adding that "teachers are fresh now in September and October but as the year wears on..." I conducted my interviews and observations into the second semester of the school, due to the timing of the holidays and the second semester additions of various afterschool programs.

### **Teachers' and administrators' interviews**

Both administrators' and seven of the 10 teachers' interviews were audio-taped and transcribed. Two teachers asked not to have their interviews audio-taped, and one teacher failed to keep two interview appointments we had set, promising to fax me her written responses to my interview protocol (which I never received); she did allow me a less than 10-minute follow-up confirmation interview to attempt to validate her sparsely written responses, when I dropped by her classroom unannounced.

In order to get a broader context for my teacher interviews and classroom observations, I began my interviews with the two school site administrators, the principal and the Assistant Principal (AP), both of whom provided me with supporting memoranda for the school's and school district's gender equity and Title IX policies, as well as those of the gifted and talented and Schools for Advanced Studies (SAS) program. My interview with the principal was wide-ranging and just over two hours, partly due to the fact that we had become friends over the almost nine years we had known one another since my children attended the school; in contrast, my interview with the AP took only 35 minutes.

Being able to interview these elementary school teachers during the school day proved to be somewhat problematic due to their time constraints: recess is 20 minutes, lunch is 35 minutes, and while physical education (PE) with a professional coach takes place once a week for 45 minutes, this time is often reserved for grade level or subject-specific meetings with other teachers. Interviews with nine of the 10 teachers ranged in length from 15 to 60 minutes, with an average length of 38 minutes; interviews with the two gifted coordinators took 40 and 60 minutes each. [The relatively short length of teachers' interviews might be attributable to a lack of time available for their own needs during their short breaks from classroom instruction (time used typically for personal needs, phone calls home to parents, photocopying, yard duty, etc.), their reluctance to engage with me as a former parent who had been active at the school, concern that my study would in fact be a potentially punitive evaluation of their teaching, or due to what I perceived as a dislike for the irrelevant and rarified ivory tower world of academia which is so far removed from the front lines of urban public school classroom teaching.] After formal interviews had taken place and I had begun my classroom observations, most teachers began to speak to me freely and informally to clarify my questions and to loan me copies of textbooks to analyze. Particularly helpful to me were the two male fourth grade gifted coordinators (one of whom had been my child's teacher seven years before) who always had their classrooms open during recess and lunch, with students freely coming and going, as well as two female third and second grade teachers who were very involved in the issue of how the female students they

nominated for eligibility for the gifted program were processed by the LAUSD gifted office.

Over the course of the fall semester, and into the spring term, I observed each of the 10 teachers in their classrooms after I interviewed them, to better understand their teaching philosophies, for two hours of general education and two hours of math instruction; this had to be done in bits and pieces of time due to the fact that, while all teachers teach English Language Arts (ELA) using *Open Court Reading* (OCR) in the mornings, not all ELA and math instruction takes place in each class at the same time, and there were a number of holiday preparation activities taking place all fall semester (Halloween, Thanksgiving, and winter holiday performances and gift creation). I also spoke with the local district's math and reading coaches on site. Administrators, teachers, and classified staff all gave freely of their time, including making copies of documents, loaning me textbooks, and speaking with me regarding what I had observed and was in the process of synthesizing.

The afterschool enrichment classes (violin, dance, math, drama, and digital photography) were phased in over the course of two semesters, so I tried to observe these classes and to meet with the afterschool teachers briefly to ask about their philosophy of gender equity and gifted education. I met with the executive director of the P.S. Arts Foundation which has provided visual arts and music instruction during the school day for all of Pacific's children for over 15 years. I attended two of Pacific's three annual meetings for parents of gifted students, as well as LAUSD's annual gifted conference for parents and teachers at the Los Angeles Convention

Center. I called the Assistant Principal for student counseling at the local middle school with an honors SAS program where many of Pacific's children matriculate (including mine), in order to find out how Pacific's students' gifted identification statuses might impact their ability to access the next level of SAS programming at the middle school. On several occasions I emailed the LAUSD Assistant Superintendent for the Planning, Assessment and Research Division to obtain current student data for my research. And, finally, I spoke with the LAUSD district gifted and talented coordinator to help me try to understand the complexities of gifted identification, including how Pacific's students' gifted identification statuses might impact their future educational options in middle and senior high school in LAUSD, why and when they changed screening tests, and whether they were aware of any adverse impact on students due to these changes.

### **A look at the study's participants**

Pacific's professional staff consists of a total of 21 teachers, including two administrators. Thirteen of its teachers are white, and eight are non-white (Hispanic/Latino, African-American, Asian, and Filipino). The teachers have an average of 10 or more years of educational service and years in LAUSD. The principal and three teachers are male, while the assistant principal and the remainder of the teachers are female; the two teachers who are the gifted coordinators are male.

The 10 teachers and two administrators who participated in this study have worked at Pacific an average of eight years, ranging from one to 19 years. Most of these teachers have taught at the same grade level while at Pacific, although the

upper primary grade teachers may have taught fourth and fifth grades interchangeably over time, some of the lower primary grade teachers may have taught first, second, and third grades over time, and one teacher has taught at multiple grade levels and has also run the afterschool technology classes. The two administrators have taught second through fifth grades, as well as kindergarten, seventh, eighth, and special education in kindergarten through eighth grade.

My 12 interviews were with the male principal, female assistant principal, the three male teachers, and seven female teachers. Seven of the 10 teachers have joined the faculty since the principal arrived in 1999. Both administrators and the 10 teachers are credentialed (including one teacher who has a preliminary credential). One administrator and one teacher have bilingual (English-Spanish) certificates. One administrator is credentialed in special education. One second grade teacher is certified as a generalist/early childhood by the National Board for Professional Teaching Standards (and there is a second teacher on staff with the same certification who teaches in the pre-kindergarten program). One is a mentor teacher who has been a master teacher at Loyola Marymount University and Antioch University.

Of the 12 teachers and administrators I interviewed, eight had earned master's degrees, and two had earned doctorates, all in liberal arts subjects including education, English, Spanish literature, Latin American studies, German, Slavic languages, computer technology, anthropology, psychology, philosophy, and political science. While the principal has an EdD, and one of the two gifted coordinators has a PhD in philosophy, virtually none of the teachers or

administrators has earned any degrees in science, technology, engineering, or math (STEM), with the exception of one female second grade teacher with a master's in computer technology who has taught at Pacific for five years, has spearheaded the afterschool computer classes, has been the gifted coordinator at a previous school, and who will be retiring at the end of this year.

With 11 of the 12 teachers and administrators who participated in this study fully credentialed, one with National Board certification, one with a special education credential, two with bilingual certificates, eight with masters' degrees, and two with doctorates, it would be reasonable to say that the teaching staff is well educated, dedicated to best teaching practices, and is in great part responsible for Pacific's children's trajectory of stellar standardized test results. It is, however, the tireless leadership of Pacific's bilingual (English and Spanish) principal which has created a highly enriched educational environment in which to guide these teachers and their students. Pacific's principal is an ardent supporter of the integration of the arts into the daily curriculum using Paul Cummins as a role model, embodies Fullan's sustainable leadership model of educational excellence, is the consummate grant writer, and through his academically optimistic attitude has achieved the following during his more than nine-year tenure: raised his school's API by 123 points to 884; received the 2008 California Department of Education Distinguished School Award; received the 2007 Los Angeles Music Center Bravo Award; Wonders of Reading (library and technology center, to be dedicated in 2009); received more than three million dollars in various grants; received a US Department of Education

21<sup>st</sup> Century Community Learning Center Safe Harbor Project grant (afterschool); created a successful Schools for Advanced Studies (SAS) demonstration site; formed or enhanced corporate partnerships with Paul Cummins' P.S. Arts [Crossroads] Community Foundation (visual arts and music), Creative Artists Agency (CAA) Foundation (visual arts and music), J. Mark Taper Foundation (music), The Ahmanson Foundation, The Weingart Foundation, American Youth Symphony (violin), Hollywood Rock Academy (music and instruments), Lloyd Taber-Marina del Rey Library, Venice - Abbot Kinney Memorial Branch of the Los Angeles Public Library, Siltan-Turner Foundation, Knowledge Adventure (software field test site since 2001), Renzulli Learning (gifted - technology), Riordan Foundation (Writing to Read Early Literacy Computer Lab), The Bible Tabernacle homeless shelter, School on Wheels (homeless), Open Paths Counseling Center, Jewish Family Services (Peace Patrol), Venice Family Clinic, Anne & Kirk Douglas Foundation (playground equipment), The Sports Club/LA For Kids Only Foundation (PE), Boys & Girls Club of Venice (afterschool), The Carol & James Collins Foundation, Afterschool Alliance and the Entertainment Industry Foundation; Friends of Pacific Booster Club; earned his EdD (USC, 2000) and certificate in School Business Administration (2007); and, co-authored *The Little School That Could!* (2007).

On its gifted and talented website, LAUSD defines differentiation as including:

accelerated or advanced content; more complex understandings of generalizations, principles, theories, and the structure of the content area; abstract concepts and thought processes or skills; level and type of resources

used to obtain information, acquire skills, and develop products; appropriation of longer/shorter time span for learning; generating new information and/or products; transfer of learning to new/different disciplines, situations; development of personal growth and sophistication in attitudes, appreciations, feelings, intuition, and independence of thought and study.

Pacific's Schools for Advanced Studies (SAS) program is one of school-wide differentiation and is not reserved for identified gifted students only. This model was developed by the principal in conjunction with teachers, the district, parents, and community and reflects concerns regarding the perceived elitism of having students identified as gifted being the only recipients of efforts to enrich the curriculum. The principal outlined how the whole school enrichment model for the SAS program at his school integrates the arts into an enriched curriculum with high expectations of all students:

...[We are] egalitarian during the mandated curricular minutes of the ... [school day], and then [we offer] specific programs after school that will target specific students...

...I really can't stress enough what the arts does to a school. It enhances the process of learning. It's not just ... art for arts' sake. It is what ... has helped our school to attain the achievement, the success that we have, and continually move us up academically. The arts enhance the process of learning. The systems that arts nourish, which include our integrated sensory, our attention, as well as our cognitive, emotional, and motor capacities are the driving forces behind all other learning ... Arts provide challenges for students at all levels from delayed to gifted. It's a class where students can all find their own level. Arts ... [help] students learn to become sustained, ... self-directed learners, not a repository of facts from direct instruction for the next high-stakes test ... Students of ... lower socioeconomic status gain just as much or more from arts instruction than those of higher socioeconomic status. This suggests that gifted programs need to expand their target audiences, and as a School for Advanced Studies this is part of the reason for [Pacific's] separate poetry instruction and many of our other programs. Arts give feelings a form and an opportunity to manipulate that form. If we feel bad, we can change the representation of those feelings through art and both metaphorically and physical[ly] change those feelings as they're expressed.



We want to encourage the expression of art because it's the expression of our students, and, to effective teachers, what students have to say is important... Poetry has become fundamental to teaching creative writing and has encouraged a wider range of students to exceed basic expectations, while still inspiring our gifted writers to think differently, creatively, because they may be gifted academically, but they go that extra stretch into creating in creative writing ... It creates incredible creative writers and extends those that are just average or good ... It forces creativity to those that aren't.

The assistant principal added her views of how the school-wide SAS program works for all students, including the issue of "segregation" [clustering] of the gifted, and parents' concerns about "exclusive" opportunities for their children once they have left the nurturing environment of Pacific:

[T]here's no segregating those [gifted] children out ... [T]hese [higher level thinking] activities are available to all children in the class. We just encourage certain ones to do them more than others ... As far as any accelerated program, we have a math club that meets, and it's open ... to all students, but most of the children who choose to take the class are in the gifted program ... I do a writer's club, and again, it's open for all students, but about three-fourths of the ones that sign up are the children who are in the gifted program ... [S]tudents we believe are gifted who aren't formally identified receiv[e] the same opportunities as the gifted students. Most of the time, the parents want them identified so they can go to a [gifted] magnet [in?] middle school ... [Here t]hey don't [need to be identified gifted] because there's no specific program exclusively for [the] gifted. All of the children have the opportunities to participate in [all of our] programs. They don't really get that "exclusivity" until they get to secondary.

One of the gifted coordinators felt that having a school-wide SAS program lets teachers teach to the top and not the middle of the class and also lets students who are not formally identified as gifted benefit from the more complex level of instruction offered to all students:

...[T]his school is ... a School for Advanced Studies, and what we take that to be is that we have ... the mandate to always have the target group for instruction be the highest, the gifted group, the advanced students, so that ...

the instruction goes there first, and then if modifications to the program need to be made because a student's having trouble accessing material, ... you're modifying down. We try to have the ... initial targeting of [instruction] to be just as rigorous as we can ... I say several times a day: ... "Yeah, I'm talking to my [gifted] students right now and anybody else who wants to come along for the ride" ... [S]ometimes the ones who have been going along for the ride, you know they were gifted before they got identified, so they were always there, they were always doing it, and so ... they weren't missing out through time ... [For] students you believe are gifted who aren't formally identified, ... it's really quite an advantage if you're really trying to be rigorous all the time. You don't feel like those kids who ... aren't formally identified ... [are] missing out ... [Here] sometime[s] ... [being identified as gifted] opens up some after school opportunities, ... [and gifted] students get priority. And then from there, a lot of times ... kids that aren't identified, you just know that they have abilities in those areas, and we'll open up [the afterschool programs] to them...

The other gifted coordinator with the afterschool math program differed with his colleague on how being formally identified as gifted may change a student's placement or clustering options in math, English, or in afterschool enrichment classes, where the principal and teachers have input into the selection process:

... [W]e think of [identified gifted students] differently, ... [and] we start grouping them differently. There might be reasons why ... in our math labs [high- and low-ability grouped math instruction for fourth and fifth grade students] they would be in one math lab group, and we decide ... maybe this child should work in another group where there's another cluster of gifted kids ... [Or], some [gifted] kids ... would not be in the high math lab, because that's not ... where their strength is, [because t]heir strength may be in English language arts, and so we would deal with them in the *Open Court Reading* sessions that we have in the morning ... [I]t's an expectation issue ... [W]e don't have an all-gifted class, so we have to continue with our regular classroom curriculum, and then we have to ... think about ... [if] you guys are going to work together because you're reading a book that's ... higher than the other kids ... Then we recommend them for different [after school] programs, ... [and] they would be the first ones ... to be accepted, especially if it's a group like photography, or ... computer[s] ... And ... my own math group after school, [where] I go straight after the high [performing] gifted kids ... [And] a lot of times [the principal] chooses [the gifted children who will participate in particular afterschool activities] because he knows

who they are, he knows the list, and so he will choose those kids, and then the teacher ... also ... makes those decisions...

One of the third grade teachers with over a decade's experience spoke about how school-wide technology in the SAS program at Pacific functions to differentiate instruction for all students:

...[T]echnology is embedded into the curriculum, so ... we do projects ... here, ... [and] kids might be doing research, and then as a product [of] their research, they're doing a report presentation on PowerPoint, so they'll write down their talking points, and they'll use PowerPoint to bring all their concepts together through text and graphics, [with] information they get from the internet, and then use that to present [it] to the class ... [T]hat allows the kids who are ready to work at a more advanced level ... a platform and ability ... [T]here's no boundaries, they can go as high as they need to and delve into the research as in-depth as they're able, and then they can present their findings to the class ... [W]hen other kids are presenting their findings, ... those kids that are gifted or at a higher understanding, they're also speaking to the speaker and adding in what they know, ... so they have a way to talk to their peers both as a presenter and a participant, [and as an] active listener...

### **Knowledge of gender equity issues and Title IX**

The LAUSD Educational Equity Compliance Office has issued a sexual harassment policy and nondiscrimination statement on federal Title IX (discrimination or harassment based on a student's sex), California Title 5 (sexual orientation or gender identity), federal Title VI (ethnic group identification, race, color, ancestry, or national origin), and federal Section 504 (mental or physical disability). All schools must have administrative designees to oversee staff and student Title IX training, as well as having two school site complaint managers to allow students a choice of administrators with whom to discuss their sex discrimination and sexual harassment complaints. Within six months of a violation

of Title IX occurring, complaints can be filed and resolved at the school level, appealed to the local sub-district operations level, to the LAUSD Educational Equity Compliance Office, or to the California Department of Education Gender Equity/Coordinated Compliance Review Coordinator. After a disciplinary or administrative conference, students who are found guilty of discrimination or harassment, if in kindergarten through grade three, may be subject to disciplinary actions, while students in grades four through 12 may be suspended or expelled, as well as referred for school or outside counseling, made subject to an educational or behavioral contract, have their class schedules changed, be assigned detention, or given an “opportunity transfer.”

Teachers’ and administrators’ levels of knowledge regarding gender equity issues and Title IX appeared to be very uneven. Both administrators had taken training in gender equity issues and Title IX. The principal stated:

...[I have] gone to several workshops in gender equity education provided by the LAUSD and also two workshops during my EdD program at USC. One of them ... [was put on by the] ... Los Angeles County Office of Education (LACOE), who gave a six-hour, all-day workshop on gender equity for the district and also a smaller one for my doctoral cohort ... And over the years I ... had ... workshops on Title IX and follow-ups to Title IX ... [including] ... some ... laws regarding salary or wages...

And the assistant principal stated that she ... “had education law, which talks about gender equity, [and]... also had several trainings through the school district, through their operations department; and when [she] worked with new teachers, [they] were trained through the [LAUSD] equity office.”

The 10 teachers' responses to my questions about "training and/or experience" and understanding of gender equity issues ranged from "N/A" (one young, first-year, third-grade teacher with a preliminary teaching credential) or "I don't have training in gender equity" (three eight- to nine-year veterans), to having been exposed to the topic in their university methods courses (two), credentialing programs (two), BTSA (Beginning Teacher Support and Assessment induction program of the California Department of Education and the Commission on Teacher Credentialing to support newly-credentialed and beginning teachers to be able to fulfill the requirements for the California Clear Multiple and Single Subjects Credentials) (one), ongoing LAUSD professional development workshops which are held at Pacific on 20 shortened Tuesdays throughout the school year (three), and experience in the business world (one). One teacher spoke of being influenced by an undergraduate class on women in corporate business, another about "talking [in a methods class] about how to treat students more equally," another spoke about an outside math class discussing "getting girls into the math and science field, [and] they wanted girls to be scientists, and girls to be able to do anything that boys can do," another spoke about doing outside reading, and one referred to her experience in a previous career in software development.

Similar to the responses on gender equity, on the issue of knowledge of Title IX, teachers' responses ran the gamut. Three teachers stated "don't know" (first year teacher), "I'm sorry, remind me what Title IX is" (a veteran of more than 10 years), and "Not much. So I should brush up on that. Obviously an educational terminology,

and I don't know much about it" (a nine-year veteran). Yet another teacher, a male, with over five years' experience stated "... I was actually a little surprised about Title IX in elementary schools. I suppose ...there's issues there, in fact, I sometimes wonder if maybe it might be boys who have more. They might think that they might actually be more limited..." which I interpreted to mean that he felt that Title IX is not an issue at the elementary school level, and that in fact boys are the ones now who are discriminated against. Another teacher with almost a decade of experience added that, while she has heard people make remarks about the different natures of girls versus boys, she tries to treat girls and boys equally in her class:

People have said that boys are more talented or gifted in science and math, while girls are very good at the language parts of the curriculum, like writing and reading. And that just kind of goes with the definition of boys and girls when they're born, and when they're first exploring the world around them, I think. Boys are very curious, girls are curious, too, but boys show that they're curious ... [with] very active, curious outwardly ways. And girls are, they talk, and they share secrets, and they talk; ... that's what I remember about gender, as it relates to kids in school, that boys [are] more in science and math and girls with language ... [C]learly it's very different now that I'm practicing teaching, but it's not always that way. Which is nice.

Five teachers and an administrator said that Title IX refers to gender discrimination not being allowed in regard to school programs or educational funding resources, and that no person may be excluded from activities on the basis of gender in federally funded programs. Showing how even an expanded understanding of the extent of Title IX's reach could still miss the factual mark of the breadth of Title IX's legal enforcement history, one experienced teacher who had just listened to a National Public Radio interview with Diana Nyad, a renowned long distance

swimmer and now a radio and television sports personality, related her own understanding that:

...the actual language of Title IX ... is only 37 words, and it was never really intended to apply as much to sports as it ended up being. Because when you say Title IX, I right away think of ... girls' athletics teams in high school and college, which is where it ended up being enforced.

Another teacher, who had been involved in software development, stated:

...[w]e worked with many cognitive psychologists when we were developing software ... I participated in several studies that actually were related to gender related issues ... to decide how the different genders learn ... [W]e did many interest surveys ... because we were interested in readability and interest ... [I]n software, if it was geared toward [girls], we really made a strong effort to get girls involved because originally software was very much a boy's domain, including the kind of games that were written for boys ... [W]e found out that girls were much more responsive to software that had to do with the real world rather than the [Math] Blasters [a software math game], shoot 'em up, get 'em quick ... kind of software ... It was an integral part of educational design...

Yet another experienced teacher stated that she knew what Title IX is and how it has changed the world for women, which she relates to her students:

...a law that was passed to ensure gender equity, like in sports and the curriculum, harassment issues. We [our class] talked about that, too, when we did American heroes, how a few of the girls did choose women to write about, and they talked about the women that were the first to fly a plane or first to play sports, and how that was frowned upon, and how they were heroes to take risks, to be the first to do, to play sports, even though it wasn't popular and frowned upon.

Teachers' and administrators' answers to separate questions posed on "training and/or experience in gender equity issues" and "understanding of Title IX" indicated that the two topics were interchangeable to them. Some, including seasoned teachers, indicated that they had no training in these subjects, while others

said they had regular trainings or workshops. None commented on the quality of the training they might have received on either topic.

### **Describing the different learning styles of gifted girls compared to gifted boys:**

#### **Gender as a social construct**

Eleven of the 12 teachers and administrators I spoke with had an opinion about the different learning styles of gifted girls versus gifted boys. Only the assistant principal, herself the parent of gifted children, stated that she didn't "see any differences in the learning styles." The principal stated that "girls are more mature in early elementary and many times do better in school, [while b]oys tend to be more kinesthetic learn[ers]." Gifted girls were variously described as being more verbal (three, including "girls want to talk about why the problem worked out the way it did"), "learn in a more social manner," imaginative or creative (three), artistic or musical (two), into reading and writing skills, having a priority on academics or "getting into" their projects right away (two), systematic or organized (three), meticulous, serious, diligent, and good. Gifted boys, on the other hand, were described as being more kinesthetic (two), spatial, scientific, logical, having an affinity for numbers, aggressive in class discussions, scattered, less focused, "into comic books or ... sports and not so much into just straight forward academic things" (one of the gifted coordinators), and "more excited, settle down later, then lose interest" (the fifth grade teacher with gifted children of her own).

A seasoned second grade teacher noted having observed a change over time in her gifted girls' and boys' learning styles, with the differences between girls' and



boys' interests and abilities starting to level out, in particular in math, with a change to a more kinesthetic teaching style:

I used to see girls ... better in writing and boys ... better with logical reasoning problems, like in math, ... [where] it was more evident, and I think that now their differences are starting to diminish, [where] they're reaching this sort of level platform. The boys are starting to be great writers, [where] their topics might be different, but they're still writing similarly to the girls, ... and the girls are really performing as well as the boys are in math ... A large portion of my math lessons are taught through games, so ... maybe it's because it's a different approach, ... not just "[open your] ... notebook and do problems A to Z," [which] I think ... opens it up for girls and boys equally.

### **Accounts of student sensitization to gender equity issues**

On the issue of student sensitization to equity issues and programs or activities on gender equity at school, teachers' and administrators' responses varied greatly from not having enough experience to respond (a new teacher and a teacher returning to teaching after an absence of some years) to stating that this is covered in the LAUSD parent-student handbook; it was generally acknowledged that there are no programs specifically for students dealing directly with gender equity and Title IX, LAUSD bulletins notwithstanding. Most spoke of teaching about gender equity by example and emphasizing equality in direct instruction, of being careful to treat girls the same as boys, of not gender stereotyping on topics such as careers and politics, of making sure that girls' and boys' seats were "mixed up" throughout the classroom, and of not placing students in gender-segregated lines or groups.

Teachers and administrators alike stated that they felt that there were in fact gender differences in behavior, e.g., that girls tended to be quiet and on task and to

jump rope and do crafts on the school yard and to predominate in the afterschool classes in dance and violin, while boys tended to be more violent and to be placed in special education and to dominate handball, basketball, kickball, and drum playing. One of the male gifted coordinators talked about how he felt that the presence of girls in the class has a calming effect on the classroom environment: “Sometimes ... it makes it a quieter, more controllable classroom when you don’t sit all the boys together, when you kind of mix them, and ... if you go boy girl, boy girl, sometimes ... that really helps.”

Second grade teachers noted that second grade seemed to be the start of gender-sensitization of sex-conscious and -segregated behaviors. Teachers who were aware of how girls and boys tend to segregate themselves by sex over time made deliberate and successful efforts to reverse that “natural” course, most notably in PE. Other teachers worked to make sure that images of heroines and heroes were displayed equally around their classrooms. Still others took advantage of “teachable moments” to discuss what great strides girls and women had made in the last 20 to 30 years. The music teacher emphasized repeatedly that boys and girls could both learn music during the school day, when they are less susceptible to social pressures.

The principal stated that his students learn about gender equity “through talking, through classroom discussions, through workshops, [and] through ... anti-bullying sessions in an assembly at school, [including] discipline assemblies, ... [where they] talked about inappropriate touching...” One of the male gifted

coordinators pointed out that he felt that certain stories in the curriculum set positive examples for his students:

...[W]hen [the woman who was the subject of the story] decided to do this, this was not something that was common for someone to do; in fact, people tried to talk her out of it and say that she should do something else instead ... [F]rom there ... you get to have your teaching moments with the class about discrimination, about just the changes that have happened in the last twenty [to] thirty years. I think the story selection actually has been pretty good, indicating publishers are aware of this, ... [that] this is a good place to address such issues ... [W]e really have to be careful about what we use now, [because] some of the old favorite stories, ... they're just not quite on message anymore.

An experienced female teacher consciously struggled to teach her students in a fair way, being aware of how girls' "bad" behaviors may be ignored in a coeducational class and of how she must treat all of her students equitably in order to maintain their respect, in addition to recognizing that historical curricula can have limited female examples, and that she must therefore remedy that in her own classroom:

I don't think that I teach like that to sensitize them, per se, but I'm careful in the class to treat the boys and the girls the same ... [S]ometimes we have girls that are quiet and always very on task, and once in a while I'll need to talk to them because, like everyone else, they'll fool around, and I try to be really fair; ... if I have a system of turning your card for a warning, I won't let the girl slide just because she's never done it before. I'll ask them to turn their card, too, just like I would to a boy who's always having to turn their card because they're not on task or doing something they shouldn't be. So I try to be fair in that way, and when other kids see that I'm fair even with the kids who never have problems, they have more respect for me and know that I'm treating everyone fairly ... Also, I'm just careful when I assign projects, like famous American heroes, that I put as many women personalities up as men because they tend to have more generally known male American heroes than women.

The two second grade teachers with close to two decades' experience

between them indicated that second grade seemed to be a critical point for students' sensitization to gender equity issues. One stated that:

...second grade is a big year for that, for kids noticing, and I don't really know where it comes from. I don't think it's particularly anything at school, it seems to just come at home, all of a sudden boys won't play with girls, starting about second grade. Girls start to have this perception, well the boys play handball, and the girls do jump rope. So I don't know where they get the message, if it's through the media or through their peer group, the older kids. It's always kind of sad when it happens.

And the other second grade teacher stated:

I feel that [with] the majority of the second grade students, I don't think gender plays a role in ... the things that they do in the classroom. Now in sports, perhaps it may, but ... I don't see much of a difference. I do see a difference in ... the after school programs where more of the girls tend to ... move towards the dance classes, the violin classes, and the boys are, it's mostly extra-curricular activities that I see, at least in my second grade classroom ... [For example, T]here was an after school basketball program, and that was mostly boys, with a few girls trickling in. I do remember them being called tomboys, you know, those few girls. Sometimes I do see at recess that if the boys are playing handball, the girls don't want to play, but ... I don't really feel it much in the classroom. Or see it.

Neither teacher indicated whether or not she would actively intervene when observing students' budding sex segregationist behavior.

A couple of teachers said that the music program, taught by a professional musician for the last four years and paid for by grants, in which all students participate during the school day, has the effect of teaching acceptance and giving all students the feeling that they have the ability to succeed, due to the fact that it is mandatory, for girls and boys alike, to participate in singing and playing musical instruments, which might not be considered to be "cool" outside the classroom. This effort to get boys to participate in music classes after school appeared to almost be

derailed when the music teacher initially created a fifth grade girls' chorus afterschool for major performances, had parents and teachers complain that boys weren't welcome, later renamed it the fifth grade chorus and officially opened it to interested boys, then had boys reluctant to join because it was not socially acceptable. The music teacher recently told me that she tried again to make her afterschool music class more inviting to boys by renaming it a drumming class, but that integration lasted until girls became the predominant sex, and it once again was no longer acceptable for boys to participate.

One seasoned teacher told me how she had worked to break girls and boys of the sex-segregated patterns of play she had observed in PE:

PE, we've been particularly attuned to, [so] we do well. Actually I'm working with a father, he was with us last year, too, and we found out that the girls were not participating in PE as much because they were not as good as the boys in kickball, and they weren't as combative as the boys in kickball. So you would basically ... say "We have this area," and you go out to the area, and the girls would be out in the arts and crafts or playing over somewhere else, and they wouldn't be participating in those games because they were, and this is a young-age girl also, but ... we purposely divided, originally the boys and the girls. I gave the girls a lot of instruction, and then we mixed them, and there's much more participation. Co-educational [physical] education, now that we've given the girls a chance to get to know the game, ... [t]hey participate all the time, actually. Many of the girls participate all the time, and many of the boys go into crafts, but before they weren't participating at all.

Consciousness of children's self-segregating behavior could be a signal for teachers and administrators to model new skills for children to practice, in order to overcome a lack of self-confidence which could contribute to withdrawal from a sex-integrated setting, as related in the previous PE anecdote. Teachers and

administrators alike, however, appeared to accept at face value that boys are more rowdy and violent, which appears to indicate that there will be little or no investment in role modeling or consequence-setting efforts to change such ingrained behavior. Gender sensitization thus appears to be taking place in a haphazard fashion, neither complete, nor constant.

### **Knowledge of gifted and talented laws and policies**

LAUSD has had a gifted and talented program since 1951. In the mid-1970s, as part of a judicial settlement regarding school desegregation, LAUSD created magnet schools as voluntary integration devices, placing many gifted and highly gifted programs under the umbrella of integration; around this time, California stopped mandating gifted teaching credentials to be able to teach gifted students. In 1980, California adopted legislation calling for school districts with gifted and talented programs to provide identified gifted students with a minimum of 200 minutes per week of differentiated instruction. By 1997, highly gifted magnets and non-magnet-based centers were overcrowded with long waiting lists of eligible highly gifted students. Over the next year, parents of highly gifted LAUSD students, including myself, met as part of the Ad Hoc Gifted Committee to help create the Schools for Advanced Studies (SAS) program, which was designed to offer programs for clusters of gifted and highly gifted students which would be more geographically accessible than magnet schools and which would mandate teacher training in gifted education and allow for acceleration in math; a decade later, while there are 170 SAS programs throughout the district, they no longer require

professional development in gifted education, and there is little math acceleration. In 2001, California AB2313 mandated that gifted and talented programs offer students differentiated instruction throughout the school day, not just 200 minutes per week. LAUSD holds an annual gifted conference for teachers and parents, where teachers can earn continuing education credits or salary points; a decade ago it was held without charge at one of the middle school gifted magnets, while today teachers and parents must pay \$70 plus \$12 parking to attend the conference at the Los Angeles Convention Center. Pacific's school-wide SAS program is in its ninth year, having begun there when the principal started at Pacific in 1999; LAUSD officially requires that all schools with gifted programs hold meetings for parents at least twice a year, which Pacific does. Pacific subscribes to Renzulli Learning Systems (a screened interest-driven search engine and student interest profiling system developed by the University of Connecticut with federal Javits funds), which is paid for out of local subdistrict gifted funds.

In contrast to the mandatory federal nature of gender equity and Title IX, there is neither a federal nor a state mandate for gifted education, no specialized certification is required to be able to teach gifted children, and each school district with a gifted program can create its own internal identification and services policies and procedures. Pacific, because it has a Schools for Advanced Studies (SAS) program, mandates professional development workshops on gifted and talented education topics for its teachers and administrators, as well as has two to three parent meetings throughout the year.

In answer to my question regarding teachers' and administrators' understanding of the gifted laws in the state of California, only one of the administrators and one teacher stated that they were aware of the California gifted laws having changed in 2001, from a minimum of 200 minutes per week of differentiated instruction to throughout the instructional day. Answers to the question of their understanding of the new law ran the gamut from "none" (the first year teacher); to having to differentiate, enrich, and challenge; that "No Child Left Behind, that there needs to be services provided for gifted children by the school to increase and develop their intellectual, creative, and artistic abilities, or any other ability that they have" (teacher with a decade of experience); "I've learned through my classes that every student has a right to reach their potential. But I don't know if that's enforced or not, or actually written into the law, but that's what I learned in one of my classes. That's why I teach" (another teacher with a decade of experience); and, from one of the gifted coordinators:

Basically that gifted students are a special class of students that need to have instruction targeted directly to them, that the kind of things that are directed toward them are, come in many forms, whether it's acceleration, whether it's ... a novel curriculum that isn't ordinarily offered.

Although the original LAUSD SAS program initially required participating schools to commit their teachers to 32 hours per year of professional development, that requirement has been dropped in the ensuing decade. When the SAS program was started at Pacific, the principal reached out to teachers, parents of gifted students, and community to create a collaborative vision of what the program should



look like, which led to the development of a school-wide SAS enrichment model, where all students are taught at a higher or more novel level, every student has the right to be challenged and to reach her or his potential, and “everybody else comes along.” This was explained to me by a number of teachers and administrators as, rather than teaching to the middle, or trying to bring those children who are “below basic” to basic skills levels, all children at Pacific are expected to be “brought along,” and to achieve at a high or advanced level.

The majority of the teachers and administrators answered that it was important to provide differentiated, expanded, and enriched instructional opportunities for all students within their classrooms. Teachers’ opportunities for professional development in gifted education have been varied, due to the fact that no specific credentials are required to teach gifted children, and that gifted education is not mandatory in California: some teachers have received gifted training in their university methods classes, credentialing (three), BTSA programs (one), have attended Los Angeles County Office of Education workshops (one), have attended professional development on the new hands-on science inquiry based methods textbooks (one), have attended state math conferences with gifted sessions (two), one teacher has been a presenter at a California Association of the Gifted conference, others have attended the annual LAUSD gifted conferences (three), others have taken seminars at local universities (five), and all attend the three to four professional development sessions on gifted topics at Pacific throughout the school year (two).

The two administrators and two teachers who are also the SAS and gifted coordinators with more than half of the students in their classes identified as gifted are quite knowledgeable about gifted students' need for differentiated instruction; the coordinators may attend district "in-services" for up to eight to 10 hours per year (reflective of the fact that there is no mandate to keep up a professional gifted credential). A third of the teachers and administrators whom I interviewed had gifted children and informally shared with me their personal experiences with how gifted education had or had not met their children's needs, some having been more successful than others. The lack of systematic teacher training in gifted programs reflects the disjointed public policy in gifted education in the US today, making running a gifted program a challenging task at best.

**Perceptions of characteristics common to gifted children: Giftedness as a social construct**

The principal summed up what many on staff echoed in their various responses to me, that characteristics common to gifted children are that they are "inquisitive, [with] a thirst for knowledge, ... [and that t]hey can be leaders [and] problem solvers." And the assistant principal noted that not all gifted children will necessarily live up to their potential: "Interesting enough, not always high achievement, [although they] think[] outside the box [and are] creativ[e]."

The two fourth grade gifted coordinators were more expansive in their responses, with one stating that:

[T]heir thinking is often more organized, more systematic, [and they] don't take as many things at face value. They're just more critical [and] judg[mental] ... They grasp concepts very fast, [and] you have to really keep ahead of them ... [T]hey're all so diverse in their interests. And usually ... they're just very, very interested in learning things all the time, [and] they ... just ... seem to have academic priorities.

And the other gifted coordinator who also teaches the afterschool math

enrichment classes offered a more complex view of his gifted students, commenting:

Inquisitive, definitely. They tend to discuss and argue a lot more, which can be both positive and negative. They're more active. They sometimes pick up things very quickly when it's ... something that they like, and other times it may take a while if they're focused on something that they would prefer to do, ... [and] sometimes I have a little difficulty getting them away from certain subjects ... I think they're more reasonable with each other, in that they're more likely to cooperate in groups, especially if the groups are at their level. And ... they like to help; I don't want to say too much, but the girls especially tend to like to help... I ... search ... for kids [to identify as intellectually gifted], ... [including those who are] really different ... Last year, we were all surprised [by] one of the spiciest kids in the room, never does his homework, never does well on tests, but ... he talks to you differently, he talks to you in a deeper way, he answers questions in a way that other kids don't ...

One teacher with almost a decade's experience teaching second grade stated:

"You know they're every part of this spectrum, ... [and] I wouldn't say that there is one characteristic of gifted children," while other teachers were more willing to note specifics. One of the fifth grade teachers spoke of how excited her gifted students are, and how they thrive on projects, investigations, and PowerPoint presentations at the end of their projects, and the other fifth grade teacher referred to his students' abilities to think critically.

The four third grade teachers at Pacific make the bulk of the referrals of students to be tested for the gifted program. One of the third grade teachers, the first

year teacher, referred to her gifted students as “sometimes hav[ing] a mastery orientation to learning,” while another third grade teacher spoke of her gifted students’ sense of justice: “When something isn’t fair, they really ... want to make sure everything is right and fair ... more than others.” The third grade teacher with an undergraduate degree in Latin American studies spoke of how she determined her English language learners to be gifted: “sometimes they’ll have an advanced language ability, and right now I have a student who learned English ... in a few months, and he’s out-performing all my English students, [who are native] English speakers.” And the fourth of the third grade teachers weighed in with her concerns:

Sometimes kids won’t be good test takers. You’ll see it through logical thinking or inquisitive minds that may want to know ... the how and the why behind what we’re learning. Sometimes it will evidence itself through ... exceptional creativity or divergent thinking. And sometimes through kids who are acting up ... because of boredom. Because they’re just not challenged enough.

It is the second grade teachers, however, who gather much of the data required for the third grade teachers to make gifted referrals in October of each school year. One spoke of the gifted not “accept[ing] things at face value ... “Oh that’s the way you do it, okay,” ... they want to know why; [and,] sometimes their giftedness is in the way of arts, and then, it’s how they see things.” Yet another spoke of some gifted children being perfectionists.

And finally the principal spoke of identifying students who are homeless, none of whom is currently identified as gifted:

[Also] ... some of the homeless students that ... have come into [our school] over the years, our 10 percent yearly, and then the transients ... coming out

of the shelter, ... [might be] gifted and homeless at the same time. Because ... they're not mutually exclusive, but most people, when you ask or talk about homeless children, do not connote it with ... any of them being gifted. And, ... I don't know how to put this in "educationese," ... [but] I find that ... most ... homeless child[ren are] on edge [and have] this ... almost ... street sense of giftedness in a way ... [P]eople talk about street [smarts?] ... They kind of know more about life ... than other kids that haven't experienced all of these things that homeless kids have experienced...

### **Experiences teaching children who are "twice exceptional"**

The principal of Pacific stated that they "have had students that have Asperger's [high functioning autism, "on the autistic spectrum"] that have been very highly gifted ... or considered gifted, [and that he thinks that they] have some autistic children that are very, very bright that could potentially be gifted." Yet, three teachers, including one of the gifted coordinators, whose teaching experiences ranged from less than a year to almost two decades, said they had no experience teaching children who were identified as twice exceptional. And there were, in fact, four twice exceptional students at Pacific this year, all in general education classes.

Both a veteran second grade teacher with over a decade's experience and the assistant principal offered that they are mothers of children who are both gifted and had special needs which required having a "504" [an accommodation plan for children who do not meet the criteria for special education and are able to access the curriculum despite their special needs]. The veteran teacher added:

that gave me a really good insight because my [child] was always a few years ahead of the kids I was teaching, and that gave me a real understanding for parents of what the process was, and what their rights were, as far as ... what their child deserved. And I think most of the kids that we see in gifted, [that] there's a lot of them that have that duality, especially a lot of the Asperger's kids. And [that] their giftedness ... tends to be a peak of something...

The second grade teacher who had been a gifted coordinator at another school referred to the problems of identifying and serving the twice-exceptional, which included disagreements with faculty who believed that twice exceptional children should not be “rewarded” by being placed in the gifted program, when she said:

I think that some of the things that characterize gifted children are their level of their questioning, their diversity, [ and] ... thinking outside of the box, [in] the way that they approach things, in innovative ways, in different ways ... [W]hen ... we were identifying gifted children, so many times there would be children that were sent [to us] for other reasons. [Then t]he teachers were ... so shocked that ... [the kids] were[n't] going [to be going] into special education ... [because] they were children that were very different as a group than high achievers. They often are excellent problem solvers. A lot of times they ... have an intense kind of concentration [in] particular areas that they're interested in, ... oftentimes they have very strong interests, ... [and are] sometimes loners ... [And as to] children who hadn't finished their work, ... [other teachers] saw [the gifted program] as something that was a reward [and] rather than to be able to go into an accelerated class, they almost saw it as ... something someone should do after they've done the material that they wanted the student to finish, so a lot of times we had to fight them on that.

One of the fifth grade teachers who is a parent of a twice exceptional child, with a predominance of gifted students in her class, mentioned having students who are intellectually gifted, but can't write. The second gifted coordinator who is the fourth grade teacher also with a predominance of gifted students and conducts the after school math enrichment classes noted:

I had to make lots of concessions for [gifted students with special needs] in the classroom because there were certain things they absolutely cannot do or would not do, ... [so] I had to figure out other ways they could fulfill curricular obligations...

A third grade teacher added:

It was a challenge. Especially those kids we have like Asperger's, or any kind of behavioral AD/HD issues, because you tend to focus on that, versus maybe what they need academically. Not really to subside the AD/HD or to subside the Asperger's, because ... that's who they are, but ... it kind of distracts me as a teacher. I need to remember that they're both, and not just ... the behavior problem, or the kid with Asperger's who has a one-on-one in class ... It's a challenge.

One of the second grade teachers noted that she had students with exceptional abilities, which caused her to conclude that they were twice-exceptionally gifted with special needs and that she needed to accommodate her teaching to better suit their learning styles:

I had two with Asperger's, and they weren't identified gifted, but I knew they were going to be gifted, and they were very different in the fact that one was an auditory learner, and another one was a visual learner. The auditory learner ... provided history lessons to the class, [so] any time [they] studied anything, he would chime in with a background of why and how this came to be ... Both of them had an endless capacity for information, [and] they could retain everything, [having] great memories. The interesting part about the visual learner is that he learned visually, [and] I always had to ... map out what [they] were doing, but he couldn't draw ... Both of them had Asperger's, so they could only focus on an activity for a certain amount of time, so I would modify their homework to meet their needs.

And students who are highly gifted remain an enigma to one seasoned third grade teacher:

I don't know that I've had twice exceptional. For the ... highly gifted, I supplement the curriculum with independent projects [and] give them ... more control over how they'll approach mastering a concept or skill and [an] opportunity to work with the concept in more depth. And also training in leadership skills, [which] I think is a very important skill for kids that are highly gifted. Often they need guidance in that area, [on] how to use their knowledge and their ability to problem solve, to be leaders that someone will want to follow, ... so leadership training, too.

Today at Pacific there are four twice exceptional students in general education classes who are identified as gifted who are also receiving special education services: all four are native English speaking boys who have been identified as intellectually gifted through testing by a school psychologist (presumably using the Raven), three of the four are ethnic minorities (Hispanic/Latino, American Indian, and Asian), and two of the four are diagnosed as having autism and receive services for their behavior; three of the four receive “resource” pull-out services, presumably for learning disabilities in math and/or English language arts [which potentially would cause them to have low CST scores and not qualify for gifted identification in the high ability category through LAUSD’s automatic screening process]. Additionally, two English speaking white male students have recently been identified as highly gifted, including a kindergartner who was just “skipped” into first grade.

**Observations in the classroom: Displays, seating, ability grouping, behaviors, textbooks, and computers**

In the classes that I observed, on average there were 20 students each in second and third grade classes (due to class size reduction), while there were 35 in fourth, and 26 in fifth; each classroom variously had from one to three additional adults, including general and special education aides and parent volunteers. *Open Court Reading* lessons for second through fifth graders take place in the mornings, math is taught before lunch in the second and third grades and after lunch in the fourth and fifth grades, science for grades four and five is taught on a weekly basis,



and science for grades two and three is only taught for a few weeks in the fall and spring.

All classes displayed students' projects around the room, with girls' and boys' projects displayed in equal numbers. There was the egalitarian pantheon of heroines and heroes that the children study and do research projects on for social studies; notable, however, during February's African American month, was the dearth of female role models. Curricular materials scattered throughout the general education classrooms were mostly egalitarian, with the exception of the music bungalow, where only "dead white male" composers' portraits were displayed, with apologies from the female music teacher who had hastily decorated for its recent opening. Lists of who was responsible for classroom tasks, homework charts, behavior charts, numbers of Accelerated Reader books read, color-coded "work-together" group lists, etc. were displayed around the second and third grade rooms. All classrooms had libraries, and many had various plants and pets, depending upon the personal interests of the teachers.

Desks designed for use by two children faced each other for group work, with a carpet for children to be seated at during direct instruction and reading in second and third grade, while in fourth and fifth grade, desks for two were aligned in two or three rows facing front. In second and third grade, students frequently rotated around their rooms' "stations" in ability groups to complete various lessons, which allowed them to spend time in a small group with the teacher. Girls and boys were seated randomly around their classrooms, as most teachers allowed their students to sit

anywhere they liked on the first day of the school year, and then would move students as time went on, depending on behavior and special needs, placing those who required additional attention or supervision in front. Classes had one or two desks segregated at the back or side for students with behavior problems, primarily boys, who were also sometimes asked to stand outside the class after being disruptive; one class had makeshift cardboard partitions on the desks of disruptive or easily distracted boys during tests. While teachers appeared to call on girls and boys equally, many times it appeared that girls worked quietly and raised their hands politely to be called upon, and quite frequently boys were “off task” and blurted out answers, which also carried the risk of having to “turn” a behavior card or being sent outside, a frequent occurrence in the second and third grades.

For differentiating instruction, teachers typically break students into three homogeneous ability grouping levels for OCR reading and writing, as well as second and third grade math, determined by CST results and initial placement and quarterly assessment tests; the fourth and fifth grade math lessons are given in homogeneous upper and lower level “lab” groupings, where students either stay in their home classrooms or change classes after lunch for their math lessons. There were no delineations of gifted students per se, although presumably they formed the top tier of the homogeneously ability-grouped students during subject matter lessons.

It is claimed by some that “incessant” testing and “teaching to the test” has narrowed the curriculum and taken the creativity and flexibility out of the teaching process. Until NCLB mandated science testing in fifth grade this year, it was

elementary school teachers with a personal interest in science who taught the subject to their students consistently, although as discussed previously, none of the teachers or administrators I interviewed at Pacific has an undergraduate degree in any of the STEM subjects. Looking at the second and third grade classes, science was only taught for a short time in the fall and spring, and therefore, without mandated testing, students would continue to have very limited exposure to the subject in those grades. LAUSD adopted a new science textbook (FOSS, Delta Education, Lawrence Hall of Science, University of California at Berkeley) for teaching and testing physical, life, and earth sciences to fourth and fifth graders, but the STEM topics of technology and engineering are not covered, and women make up only approximately one-third of the scientists and inventors featured as role models in the texts.

Similar to the complaints against testing, scripted reading programs have been derided for their lack of spontaneity and creativity, as well as their putative punishment of seasoned elementary school teachers' professionalism. In LAUSD, which has seen a significant increase in the English language arts scores at the elementary school level since adopting *Open Court Reading* in 2000, students spend over two hours each day on OCR lessons which provide standards-based instruction in literacy development through thematic units. In the OCR textbooks, however, in between each of the thematic units is a two-page long break known as "Fine Art," with three to four illustrations for the previous thematic unit, where very few of these illustrations has either been done by a woman or refers to girls or women. When I asked teachers, administrators, and the reading "coach" about this, only one male

fifth grade teacher had even noticed the OCR “Fine Art” thematic illustrations, when he told his fifth grade girls doing a social studies unit to look for illustrations on the role of women pioneers. OCR stories have a subtext of what possibilities life holds for girls and women: they get new coats and hats, are librarians, make quilts and flags, tell stories, have ponies, wait to be rescued, care for the wounded, get married off, milk cows, write diaries from attics while waiting to be killed by the Nazis, etc., while boys and men go on adventures to places like the Antarctic and the moon, are class presidents, play soccer, are astronomers (and get to be constellations) and inventors, are soldiers and spies and cowboys and bullfighters, write the Constitution, are miners, build California and its railroads, win Nobel prizes for medicine, are inventors and famous artists, etc.

All classrooms had banks of computers located either in the back and or the side of the classroom. Girls appeared to go to the computers as frequently as boys. In most classes, students who had finished their classwork early had the option of moving over to the computers for enrichment or differentiation to do Accelerated Reader (with initial reading levels based on CST results, which can be up to twelfth grade) or Reading Blaster or Grammar for the Real World or Microsoft Word Ultimate Writing and Creativity Center (depending on their grade level) for English language arts enrichment, Weekly Reader for social studies, Math Blaster or Math for the Real World or Math Arcade for math, and various software programs such as Renzulli Learning Systems (an individualized screened search engine based upon

each student's interests), Knowledge Adventure (including Books by You), SoftSchools.com, The United States Mint, and Poptropica.

### **Afterschool enrichment programming**

At Pacific, there is a broad array of afterschool arts enrichment offerings, including American Youth Symphony violin (grades three through five), dance (grades one through five; taught by the former PS Arts dance teacher), an ad hoc choir and drums class (fifth grade; taught by the Creative Artists Agency (CAA) foundation teacher who teaches music at Pacific during the school day), and, beginning in the second semester, drama, advanced math club (fourth and fifth grade students with advanced CST math scores), and digital photography (fifth grade; selected through essays). Although gifted girls make up just over eight percent of Pacific's student population, they have a much greater presence in the afterschool classes: drama (11 percent), violin (29 percent), digital photography (40 percent), dance (60 percent; grades four and five only), and the fourth grade math club (64 percent gifted girls, in a class where 72 percent of the total class are girls). While the arts enrichment classes are open to both girls and boys, by far the vast majority of participants are girls. Dance is a traditional art form for girls, drama may offer a way for girls (and boys) to express their emotions, and violin, choir, math, and digital photography support the math-music-art-technology axis of socially acceptable art forms toward which gifted girls might gravitate to satisfy their heightened kinesthetic and cognitive developmental needs.

**The LAUSD gifted identification process**

Prior to the advent of the mandated NCLB testing, LAUSD's gifted identification process was completely subjective, starting with referrals from teachers and parents for individual school psychologist testing as early as kindergarten for those students believed to be highly gifted, or through a standardized testing composite with recommendations for students in third grade and above. With its three-year-old Integrated Student Information System (ISIS) in place, LAUSD students' scores on the annual CST, which are analyzed for the federal NCLB Annual Yearly Progress (AYP) report and the state Standardized Testing and Reporting (STAR) Academic Performance Index (API) report, are posted automatically to each school site.

LAUSD now has a two-tiered screening process for identifying gifted students beginning in third grade, one which can identify students as "high achievement" automatically based on the federally mandated state test scores, and the other which can identify students as "intellectual" or highly gifted, which still requires subjective referrals by teachers and parents for screening and group testing by school psychologists. [Each school's gifted budget, due in mid-October, is based on the number of students identified in the previous school year, at \$70 per identified student; last year, LAUSD received \$6.4 million from the state and appears to have spent \$3.7 million at the classroom level, although the approved indirect cost expenditure rate is three percent.]

The scale scores for the California Standards Test (CST) in English-language arts (ELA) and math range between 150 (far below basic) to 350 (proficient) to 392 and above to 600 (advanced). In order to be identified automatically for the LAUSD gifted program in the high achievement category, students must earn “highly advanced” scores in both English and math for two (2) consecutive years, while a student earning highly advanced scores in either English or math for three (3) consecutive years can be identified as being gifted in a specific academic ability in either English or math. The LAUSD automatic cut scores, as shown in Table 1, have risen by well over 10 percent in the last three years; when I spoke with the LAUSD district gifted coordinator about having raised the minimum cut scores so significantly, she told me that with the new state non-normed criterion-referenced tests, they had had to guess on the original cut scores, and without having raised the cut scores over the last three years, the number of LAUSD students identified as gifted could have been in excess of 100,000, almost double the current population.

**Table 1**  
**LAUSD Minimum CST Scores Required**  
**for Gifted Identification, 2005 - 2007**

| LAUSD Minimum CST Scores Required for Gifted Identification | 2005 | 2006 | 2007 | % Change, 2005-2007 |
|---|------|------|------|---------------------|
| English Language Arts                                       | 380+ | 392+ | 425+ | +11.8               |
| Math  | 395+ | 401+ | 450+ | +13.9               |

Even for a student to be identified “automatically” as gifted in LAUSD using CST scores, however, requires a school site gifted coordinator to print out three years’ worth of the students’ scores from ISIS, review them for the students’ eligibility as either high achievement or specific academic ability in English or math, and in October submit the names of the students on a list to the local LAUSD subdistrict gifted office, which in turn submits them to the central LAUSD gifted office for verification. Students who attend LAUSD schools without proactive school gifted coordinators or activist parents to push for them simply do not get identified gifted and thus do not receive services.

The second, and more subjective, tier of the LAUSD gifted identification process is to identify students in the intellectual ability category, which includes highly gifted; prior to automatic identification, students who were thought to be highly gifted could be tested individually by a school psychologist, usually with the Stanford Binet IQ test, as early as kindergarten, if so requested by a teacher or parent and approved by the school site’s gifted screening committee. The school site gifted coordinator who teaches afterschool math enrichment now typically begins this time-consuming two- to three-month budgeting and identification process in the second month of the fall semester; the afterschool math classes had to be cancelled first semester due to these time pressures. The process of recommendation for assessment for the “intellectual” category requires not only the review of a student’s CST scores, but also at least one semester of teacher observations at the school of current



enrollment, review of the student's cumulative record, a sample of the student's work, supportive descriptions of intellectual behavior by the student's parent(s), teacher recommendations, the principal's approval, and "superior cognitive abilities," as indicated by the standardized administration of an intelligence test (typically scoring in the 95.0 percentile on the group-administered Raven Progressive Matrices) given by an LAUSD school psychologist. To be identified as highly gifted, a student must earn a score in the 99.9 percentile (although students with a score in the 99.5 percentile and above are eligible to attend highly gifted magnets, "if space remains").

When I asked the LAUSD district gifted and talented coordinator why the district had switched from school psychologists administering individual tests to screen for highly gifted students to the group-administered Raven, she indicated that it was a matter of cost. And when I asked her if she were aware of any impact that testing by the Raven might have on gender or race, she answered that she didn't have the technology to look at the issue.

As discussed previously, California law essentially gives school districts carte blanche to develop a gifted identification system. The concerns teachers voiced to me about the Raven's impact on their female students' chances of being identified as intellectually or highly gifted are borne out by the data on the current distribution of identified gifted girls and boys in LAUSD, by identification category, as can be

seen in Table 2:

**Table 2**

**LAUSD Identified Gifted Students, by Category, by Gender**

|       | Total Students     | Total ID G/T      | High Achievement | Specific Academic Ability: Math | Specific Academic Ability: English | Intellectual Ability: Raven 95.0 | Highly Gifted: Raven 99.9 |
|-------|--------------------|-------------------|------------------|---------------------------------|------------------------------------|----------------------------------|---------------------------|
| Girls | 328,899<br>(48.8%) | 25,292<br>(48.8%) | 6,652<br>(52.5%) | 4,055<br>(40.1%)                | 1,562<br>(68.8%)                   | 12,315<br>(47.5%)                | 708<br>(41.9%)            |
| Boys  | 344,601<br>(51.2%) | 27,360<br>(51.2%) | 6,018<br>(47.5%) | 6,053<br>(59.9%)                | 709<br>(31.2%)                     | 13,597<br>(52.5%)                | 983<br>(58.1%)            |
| Total | 673,500            | 52,652<br>(7.8%)  | 12,670           | 10,108                          | 2,271                              | 25,912                           | 1,691*<br>(*1/08)         |

Note that the total percentage of both girls and boys identified as gifted in LAUSD is respectively the same as that in the general LAUSD population, i.e., “numerical parity.” Looking at girls’ representation in various gifted categories, however, girls predominate significantly more than would be expected in the category of specific academic ability: English, while they are significantly underrepresented in both the specific academic ability: math and highly gifted categories. The disparate impact on girls by the use of the Raven shows in the comparison between numbers of students identified in the intellectual ability category with a 95.0 percentile score on the Raven, and those identified as highly gifted with a 99.9 percentile score on the Raven, where girls go from being 47.5 percent of students identified as having intellectual ability to 41.9 percent identified as highly gifted, respectively.

A starker picture for the identification of highly gifted girls in LAUSD is painted over a span of more than decade, in Table 3. Looking at the difference

**Table 3**

**LAUSD Highly Gifted Students, by Gender, 1996 – 2008\***

| Highly Gifted | 1996          | 2008 (*1/08) | % Change, 1996-2008 |
|---------------|---------------|--------------|---------------------|
| Girls         | 2,716 (55.1%) | 708 (41.9%)  | - 13.2              |
| Boys          | 2,213 (44.9%) | 983 (58.1%)  | + 13.2              |
| Total         | 4,929         | 1,691*       | - 65.7              |

between being tested individually by a school psychologist using a language-based IQ test in 1996 to being tested by the group-administered non-verbal, visual-spatial Raven in 2008, we see a dramatically negative impact resulting in a mirror reversal of identification rates of girls as highly gifted, which would be predicted, given females' strength in verbal reasoning versus males' strength in visual-spatial reasoning.

The negative impact of LAUSD using the Raven as the primary highly gifted identification screening device can also be seen with respect to ethnic minority students. In looking at additional data spanning more than a decade, on the percent change in the identification of LAUSD's highly gifted students by ethnicity, it can be seen that the identification of Hispanic students as highly gifted dropped by more

than 10 percent after the Raven was instituted, as seen in Table 4:

**Table 4**  
**LAUSD Highly Gifted Students, by Ethnicity, 1996 – 2008\***

| Highly Gifted                     | 1996          | 2008*         | % Change, 1996-2008 |
|-----------------------------------|---------------|---------------|---------------------|
| White                             | 1,726 (35.0%) | 820 (41.9%)   | + 6.9               |
| Hispanic                          | 1,681 (34.1%) | 439 (22.5%)   | - 11.6              |
| Asian                             | 1,041 (21.1%) | 510 (26.1%)   | + 5.0               |
| Black                             | 305 (6.2%)    | 94 (4.8%)     | - 1.4               |
| Filipino                          | 154 (3.1%)    | 82 (4.2%)     | + 1.1               |
| American Indian/<br>Alaska Native | 14 (0.3%)     | 6 (0.3%)      | 0.0                 |
| Unknown                           | 1 (0.02%)     | [No data]     | N/A                 |
| Total                             | 4,929         | 1,955 (*4/08) | - 60.3              |

If LAUSD administrators are aware of these long-simmering discrepancies, they have not let on. I have heard from a number of parents over the past decade about concerns that the Raven misidentifies students as being highly gifted (or not), which in turn is responsible for the dwindling number of students in LAUSD identified as highly gifted, and has led to the reduction of seats available at the highly gifted magnets. [Parents of the highly gifted, usually being highly gifted themselves, can be challenging, and although their numbers may be small, they are capable of making lots of noise and persisting over long periods of time (myself included).]

#### **Interactions with parents of gifted students**

In exploring the research question of how schools serve gifted students, I looked at the role parents play as advocates for the needs of their children whom they

believe to be gifted. In answer to my question “How would you describe your interactions with the parents of your gifted students?,” I hoped to better understand how faculty perceive the parents of students who may or not be formally identified as gifted: friend or foe? To this end, parents had expressed anxiety to staff about making sure that their children were identified as gifted, as well as whether Pacific’s school-wide enrichment gifted model, and not a clustered grouping model, would in fact appropriately serve the needs of all gifted students. The principal explained to parents how they “make things a little more egalitarian” by differentiating, accelerating in math labs, through the afterschool math program, how poetry is for everyone, and how they “stretch” what children will receive at his school. One of the seasoned third grade teachers spoke about parents’ concerns at back-to-school nights, where “parents didn’t really understand how we may be addressing the needs of their children in the regular classroom, [and] some parents had the idea that only if they go outside of the classroom into a different program might they be getting a differentiated instruction.”

The assistant principal spoke of parents’ anxiety regarding wanting their children identified as gifted so that they could apply to gifted magnets. Another of the third grade teachers spoke about counseling parents of children who don’t get identified as intellectually gifted:

I’ll encourage parents to advocate for their children [who I believe are gifted but who aren’t formally identified] and make sure that they know that they should be comfortable asking the teachers how their children’s needs are being met, if they’re working at a higher level of understanding than other students, and also, especially when they get to junior high, that they watch for

placement of their children in the appropriate classes and make sure that they're in the college track classes and make sure that the parents know that they should be advocating for their children and making sure that their children are getting what they need.

Formally and informally, teachers frequently described parents of children who they believed to be gifted but had not yet been identified, as well as parents of students already identified as gifted, as “demanding.” The new third grade teacher stated that she “interact[ed] more with the parents of [her] gifted students because they tend to be more involved in their children’s education,” while another third grade teacher stated that “sometimes ... parents of gifted children are not subtle, compassionate, and understanding [of the fact] that [she] has 20 other little children...” It appears that teachers are well aware of the fact that parents of gifted children, like the gifted children themselves, will challenge their children’s teachers above and beyond the parents of their children’s more “typical” peers.

### **How the LAUSD gifted identification process affects students at Pacific**

At Pacific’s schoolwide Schools for Advanced Studies (SAS) program, I observed firsthand the positive effects on student achievement of academic optimism or press, consisting of academic emphasis or the school’s press for superior performance, faculty trust in parents and students, and collective efficacy of the school (Smith & Hoy, 2007; Hoy, Tarter, & Hoy, 2006). As the principal explained to me on several occasions, the pre-kindergarten through grade five time span in elementary school is the longest and most important formative cognitive and social developmental period in a child’s life. At Pacific, the vast majority of its children

benefit from the differentiated and enriched curriculum taught at a higher level by a qualified and dedicated staff.

The principal discussed the controversy surrounding acceleration as an option for exceptionally gifted students, just prior to “skipping” a kindergartner into first grade this year:

There was a student several years ago that I skipped a grade, and that was the third time I’ve ever done that in my career ... I was just reading the article on [Are We Failing Our Geniuses?] from *Time* magazine, and sometimes a lot of educators feel that skipping a grade creates problems on its own, especially if socially children aren’t ready for it ... [T]he article brings out very clearly some of the biases and some of the isolation and some of the characteristics or things that students develop if they’re not skipped, ... [or] if they don’t have the opportunity to participate with children who are like them, and they many times become ostracized if they’re not given opportunities ... I have seen that ... before in this school...

Changing from a gifted cluster SAS model with math acceleration to a school-wide gifted enrichment SAS model has caused those students who require subject matter compacting or acceleration for their special needs to lose academic and social-emotional opportunities, which can also adversely affect the development of gifted girls’ math talents. According to Preckel, et al.,

early identification of abilities as well as early intervention is crucial to reduce the likelihood that girls develop disadvantageous self-perceptions and negative attitudes toward mathematics. Interventions should not only focus on the girl herself but should also address environmental factors such as parents, teachers, peer groups, and administrative planning (2008, p. 156; Freeman, 2004).

We cannot promote girls going into the STEM professions when they haven’t been identified early, or at all, or who have been incorrectly identified as gifted in the

high achievement category and not as intellectually or highly gifted, due to automatic (and easy) identification based on their state test scores. One of the second grade teachers with a twice exceptional child told me how she feels responsible for looking for children with intellectual ability:

...[M]y basic philosophy is ... [that] they should test everyone. I don't want anyone to be denied the chance just because I didn't see it, [like?] the child who is very quiet or shy, they might not notice, ... if they're not willing to verbalize what they're thinking.

One of the two gifted coordinators at Pacific spoke of the difficulty of identifying students as intellectual or highly gifted who may not meet the standard criteria, including scoring high on the state standardized tests or the Raven:

...[A]re they perhaps the kind of student where we should take a chance and have them just tested by a [school] psychologist [to] ... see if they're an intellectual, if they qualify ... under that heading? ... [Then later in the semester] ... we ... start to look at the numbers again for some of the students who didn't [automatically] qualify as high achieving ... [Or] sometimes we try through the [school] psychologist because there may be a third grader, they don't have enough test scores to go by the state criteria, and yet the teacher's pretty sure that this is a gifted student ... [S]ometimes they just don't pass that [Raven test?]. Some students that we recommended, I'm sure they're just so bright, but there must be something about [the test] that just [doesn't work for the student], but thank goodness usually there's some other way ... we can get them identified...

But one of the third grade teachers noted the difficulty of having a student retested for the gifted program:

... "[U]sually we wait until third grade to refer students ... because it's something that, if you test and they don't qualify, it takes them a long time to qualify again. So at a second or third grade level I really want them to have a great deal of ... a good problem solving ability, because the tests have a lot to do with that...



Yet another third grade teacher questioned whether the Raven negatively impacted the identification of girls as gifted:

...[A] lot of boys tend to have more ... experience with spatial and logical activities because they grow up doing LEGOs and blocks and puzzles, maybe more than girls. If girls are gifted more in a language capacity, if that is bias, ... that's ... not advantageous for them to take that type of formatted test. I've just noticed ... from the girls that I refer that most of the boys come back showing that they're passing, but the girls not at such a high rate ... I'm only talking about ... the intellectually gifted, because if they go in through high achievement, it's the [CST] test scores ... Because girls can tend to be good test takers like boys ... I'm noticing the difference in the intellectual tests because that's when they give the Raven, they don't give it for the high achievement...

Pacific's teachers' concerns about the Raven's accuracy in identifying its students in the intellectual ability category have apparently turned out to be well-founded, with a chilling effect on teachers', administrators', and parents' efforts to identify girls in the intellectual category, as noted in Table 5. In both 2006 and 2007,

**Table 5**

**Pacific Intellectual Ability Pass Rates, by Gender, 2006 - 2007**

|       | Proposed<br>(2006) | Passed<br>(2006) | Proposed<br>(2007) | Passed<br>(2007) | %<br>Change<br>Students<br>Proposed | %<br>Change<br>Students<br>Passed |
|-------|--------------------|------------------|--------------------|------------------|-------------------------------------|-----------------------------------|
| Girls | 17<br>(51.5%)      | 7<br>(41.2%)     | 3                  | 1<br>(33.3%)     | -82.4                               | - 7.9                             |
| Boys  | 16<br>(48.5%)      | 12<br>(75.0%)    | 17                 | 10<br>(58.8%)    | + 6.3                               | -16.2                             |
| Total | 33                 | 19<br>(57.6%)    | 20                 | 11<br>(55.0%)    | -39.4                               | -2.6                              |

girls "passed" the Raven at almost one-half the rate as boys. More significantly, however, in the next school year, the percent of girls proposed for psychological

assessment by the Raven in the intellectual ability category dropped by over 82 percent, while the percent of boys proposed for testing increased by over six percent. After the spring 2007 CST test results came in, two girls from the list of students who did not pass the Raven intellectual testing were automatically identified as high achievement based on their CST scores, as well as one boy was identified as gifted in the category of specific achievement in math; given the district's stated disinterest in re-testing, these students will probably not be retested for reclassification into the intellectual ability category. While looking at the results of testing a small population in a small school over a short time may only represent a snapshot which might not be generalizable over an extended period of time, i.e., the school may have a particular composition of girls and boys peculiar to this year, what is happening at Pacific in the short run is reflected in LAUSD's figures over a lengthy period of time during which LAUSD substituted the use of the group-administered figurative Raven for individual testing by a school psychologist.

Today almost half of all of Pacific's gifted students are girls, yet they are overrepresented in the high achievement category (their testing strength) by a ratio of almost two to one, underrepresented in the intellectual ability category (their testing weakness) by well over two to one, and absent from the highly gifted category altogether. This is despite the fact that overall the percentage of all gifted girls reflects their percentage in LAUSD, and as well the percentage of all gifted boys

reflects their percentage in LAUSD, i.e., numerical parity, as seen in Table 6:

**Table 6**

**Pacific Identified Gifted Students, by Category, by Gender**

|       | Total Students | Total Gifted (*2/08) | High Achievement | Specific Academic Ability: Math | Specific Academic Ability: English | Intellectual Ability (Raven 95.0) | Highly Gifted (Raven 99.9) |
|-------|----------------|----------------------|------------------|---------------------------------|------------------------------------|-----------------------------------|----------------------------|
| Girls | 216<br>(51.2%) | 36<br>(45%)          | 20<br>(60.6%)    | 3<br>(37.5%)                    | 3<br>(100%)                        | 10<br>(29.4%)                     | 0<br>(0%)                  |
| Boys  | 206<br>(48.8%) | 44<br>(55%)          | 13<br>(39.4%)    | 5<br>(62.5%)                    | 0<br>(0%)                          | 24<br>(70.6%)                     | 2<br>(100%)                |
| Total | 422            | 80<br>(19%*)         | 33               | 8                               | 3                                  | 34                                | 2                          |

Being identified in the high achievement category through being a good criterion-referenced test taker, as girls are, gives students access to the “merely” gifted magnets and SAS programs in LAUSD. Being identified as highly gifted by passing the Raven, a visuo-spatial test in which boys have an edge, gives students access to the more intellectually challenging and academically demanding highly gifted magnets and honors SAS programs in LAUSD. When I spoke to the assistant principal in charge of counseling at the local middle school with an honors SAS program for the highly gifted, where many of Pacific’s children matriculate (including mine), she indicated that students identified as highly gifted have first priority to attend their single self-contained classroom three-year honors SAS program, and students identified as intellectual with the highest CST scores have the second priority, which puts Pacific’s gifted girls, primarily identified in the high

achievement category, at a distinct long-term academic disadvantage in secondary education.

Students who are identified as highly gifted are also eligible to apply for the LAUSD highly gifted magnets, located primarily in the northeast quadrant of the more than 700 square mile district. As can be seen in Table 7, over more than two

**Table 7**  
**LAUSD Highly Gifted Students & Magnet Seats,**  
**1985 – 2008\***

|                                       | 1985                                  | 1997<br>(% Change,<br>1985-1997)              | 2008<br>(% Change,<br>1985-<br>01/08*)            |
|---------------------------------------|---------------------------------------|---|---|
| Total Students                        | 590,287                               | 667,624<br>(+13.1)                            | 673,500<br>(+14.1)                                |
| Total Gifted                          | 32,165                                | 45,641<br>(+41.9)                             | 52,652<br>(+63.7)                                 |
| Total Highly Gifted                   | 3,041<br>[0.52%<br>Total<br>Students] | 4,936<br>[0.74% Total<br>Students]<br>(+62.3) | 1,691*<br>[0.25%<br>Total<br>Students]<br>(-44.4) |
| Highly Gifted Magnet Program Capacity | [Data Not Available]                  | 883<br>[N/A]                                  | 638<br>(-27.8)                                    |

decades, the district enrollment increased by over 14 percent, and the percentage of identified gifted students increased by almost two-thirds, yet the percentage of identified highly gifted students dropped by almost one-half, and the number of highly gifted magnet seats dropped by almost one-third. Note also that in 1985, there were 0.52 percent students identified as highly gifted, by 1997 (before the institution

of the Raven) that percentage had risen to 0.74 percent, and by 2008 (after the Raven) the percentage of students identified as highly gifted had dropped to 0.25 percent. The institution of the Raven has been a significant intervening variable in the precipitous drop in the numbers of identified highly gifted students and the services to accommodate their needs. This makes receiving a correct identification as highly gifted that much more imperative, particularly for girls and students “of color.”

## **Chapter 5**

### **Research and policy implications of study findings**

My fieldwork at Pacific examined public elementary education policy implementation, focusing on gender equity and mentally gifted issues, from an insider's perspective on talent development, that of a parent of highly gifted children (Coleman, Guo, & Dabbs, 2007). My concerns, which had begun over a decade ago regarding the geographical location of educational services for my highly gifted sons attending school in the Los Angeles Unified School District (LAUSD), evolved over time into this doctoral dissertation on LAUSD's process of identifying gifted students and its impact on gifted girls, i.e., the impact of gender equity on gifted public elementary education.

Information regarding the gender-related interventions envisioned by the drafters and enforcers of Title IX is not consistent at Pacific, despite LAUSD's bulletins to the contrary. Formal training by LAUSD in either Title IX or gender equity may be given in a perfunctory manner and thus may not be taken seriously by either teachers or administrators, the common theme being: "what does Title IX have to do with elementary school?" If most girls' negative experiences which impact their gender equity opportunities begin in the institution of primary school, then it is incumbent upon teachers, school administrators, students, and parents to have a consistent base of accurate information with which to raise their awareness and consciousness. If gender equity in primary and secondary education were an educational public policy priority, one way to assure a uniformity of subject matter

understanding and transmission by teachers and administrators of such an important policy would be to require post-secondary university-level coursework and to make gender equity and Title IX mandatory examination topics for teachers to become fully credentialed, such as with the California Clear Crosscultural, Language and Academic Development Certificate (CCCLADC).

Gender and differing abilities play a role in LAUSD's subjective selection process for screening students for intellectual ability and highly giftedness. Teachers and administrators at Pacific noted that there are students who may not behave in what is perceived to be a "typically gifted" manner, whom they would therefore not nominate to be tested for the gifted program, e.g., students who do not participate in class or who refuse to do any homework or whose social and emotional behavior is their most outstanding feature (the "twice-exceptional"). And students who do not appear to be in need of gifted services will be passed over in the identification process by teachers and administrators.

Gender also plays a role in determining the eligibility of students for highly gifted services, by virtue of LAUSD's use of the non-verbal Raven as the almost exclusive screening test for intellectual ability and highly giftedness. Abad et al. (2003) found the visuo-spatial Raven to be biased against girls, while Lohman (2005, 2006, & 2007) found the Raven to be an inaccurate predictor of academically talented students. On a purely practical note, then, it would not be disingenuous for girls to "game" their scores on the Raven through test preparation, by studying geometric mathematical concepts such as slides, flips, turns, rotational symmetry,

and spatial reasoning in greater depth, e.g., in the Scott Foresman math textbook series used in LAUSD, although these concepts are now studied only briefly at the end of the school year, when they are least likely to be emphasized and least likely to be useful to potentially gifted girls about to take the high stakes Raven.

From a social and emotional point of view, gifted girls' self-esteem and academic self-concept can suffer from the failure to be identified as gifted due to the inappropriate use of the Raven as the primary gatekeeping screening device for identification in the intellectual highly gifted category (Hoge & Renzulli, 1993). Gifted girls experience a stereotype threat twice over, of having their performance on the Raven depressed due to negative cultural stereotypes about gifted girls' ability to succeed on this figural test: the first time when teachers do not refer them for the testing process for fear of failure and LAUSD's disinterest in retesting, and the second time when the girls themselves are cautioned by their teachers and parents not to be disappointed if they don't "pass" the test and therefore must not really be gifted (Reed, Fox, et al., 2007; Jordan & Lovett, 2006; Steele, 1997). Not passing the Raven may be the first step down that slippery slope which Sadker and Sadker described as girls' "test dive":

From middle school to medical school, girls and women face a testing gender gap that denies them the best educational programs and prizes. Lower test scores block females in disproportionate numbers from the finest colleges and the most prestigious graduate schools and professions. This gender gap is especially startling because of the early advantage girls hold, but about middle school their scores begin a steady decline. It is one of the costliest falls suffered in education, yet few people notice. Females are the only group in America to begin school testing ahead and leave having fallen behind. That



this dive has received so little national attention is a powerful reminder of the persistence and pervasiveness of sexism in school (1994, p. 136).

Gender also plays a role in limiting gifted girls' future educational opportunities, from portrayals in state-approved reading and science textbooks to failure to be exposed to the science-technology-engineering-math (STEM) subjects at the primary level to the Raven acting as a glass ceiling. On the issue of textbook selection, the process of school district textbook adoptions must be more transparent, gender representation in textbooks must be examined more critically for any disparate impact on girls, and stated policy objectives such as exposure of all students to STEM subjects must be adhered to consistently throughout all primary and secondary schooling.

Opportunities for the highly gifted outside of school may be limited for gifted students not appropriately identified and served, e.g., because neither LAUSD nor Pacific has an annual science fair, students do not lay the academic groundwork for national prizes such as the Siemens Westinghouse Science and Technology Competition. When I asked the fourth and fifth grade teachers at Pacific about their students' interest in the Johns Hopkins Center for Talented Youth (CTY) gifted programs, three of the four answered in the negative, and the fourth stated that it had been a while since a parent had inquired about this opportunity, and only after the LAUSD gifted office had sporadically sent parents of gifted children a list of activities to do in the summer. If a student is identified as highly gifted in elementary school and matriculates to a middle school program for the highly gifted, a world of

ambient information about future possibilities awaits her or him: e.g., the Johns Hopkins CTY programs; gifted students with CST scores in the “advanced” or 90<sup>th</sup> percentile and above, in grades six through 10, may be eligible for the University of California at Irvine Academic Talent Search pre-college summer programs; and, entrance into the California State University at Los Angeles’ Early Entrance Program as young as 11, by-passing middle and senior high schools altogether. None of this will happen for girls who have not been appropriately identified and had their talents nurtured.

The end of Pacific’s earlier program of accelerating students in math by two years means that highly gifted students cannot continue to develop their math talents with a smooth articulation into higher math classes in middle school. With Pacific’s high level of techno-literacy, students with a particular aptitude in math could easily be served by the addition of computer programming software. The *Final Report of the National Mathematics Advisory Panel* recommends that:

computer programming be considered as an effective tool, especially for elementary school students, for developing specific mathematics concepts and applications, and mathematical problem-solving abilities. Effects are larger if the computer programming language is designed for learning (e.g., Logo) and if students’ programming is carefully guided by teachers so as to explicitly teach students to achieve specific mathematical goals (2008, p. 52).

Another possible solution would be to either subscribe to the Johns Hopkins CTY-Stanford mathematics online learning programs or to their newly developed substantive middle school math software “game” for algebra and geometry, Descartes’ Cove.

The academic or optimistic press of Pacific's SAS program, while offering differentiated instruction with high expectations for all students, cannot meet the needs of all of its gifted students. Given that Pacific has a high percentage of gifted students, 23 percent, within the context of 11 percent identified gifted in LAUSD and 10 percent of students identified as gifted in the state of California, and knowing that the Raven misclassifies and may be responsible for the fact that there are only two identified highly gifted students at Pacific now, "differentiated" instruction may not be an appropriate or sufficient educational option for all of its students. Much of the differentiation which takes place in the inclusive classrooms at Pacific is enrichment consisting of traditional low-medium-high ability grouping, increasingly difficult problem sets and supplementary teaching materials developed by textbook publishers, and offering students who finish early the option of doing a PowerPoint multimedia presentation or playing an "edutainment" game on the computer. "The United States is the only industrialized country in which teachers have been asked to develop, deliver, differentiate, and assess curriculum for advanced students and to do so while managing inclusive classrooms" (NAGC, 2008, n.p.); at a minimum, the state of California should reinstate mandatory certification for teachers of the gifted. The National Association for Gifted Children (NAGC) also recommends that a gifted program be guided by a comprehensive set of gifted program standards which includes program design, program administration and management, student identification, curriculum and instruction, socio-emotional guidance and counseling, professional development, and program evaluation. Pacific's school wide enrichment

model SAS program, while offering an arts based curriculum, still misses the following NAGC gifted program standards:

- ...(1.0E) Levels of services should be matched to the needs of gifted learners by providing a *full continuum of services*...
- ...(2.2E) Documentation of instruction for assessing level(s) of learning and *accelerated rates of learning* should demonstrate plans for gifted learners based on specific needs of individual learners...
- ...(3.0E) When warranted, continual opportunities for *curricular acceleration* should be provided in gifted learners' areas of strength and interest while allowing a sufficient ceiling for optimal learning...
- ...(4.0E) Possibilities for *partial or full acceleration of content and grade levels* should be available to any student presenting such needs...(NAGC, 2000, n.p.; italics added).

LAUSD is the second-largest school district in this country. What Pacific and its proactive principal cannot do, however, is to expand the academic opportunities available to girls at the primary level who have not been appropriately identified gifted or accelerated by LAUSD, i.e., are underserved (Swiatek & Lupkowski-Shoplik, 2003). By choosing not to focus its resources on examining whether or not the almost exclusive use of the Raven as a screening device for highly giftedness has had a negative impact on girls (or underserved students “of color”), LAUSD has allowed gender (and ethnicity) to play a role “in determining outcomes of talent development, labeling, and gifted education” (Subotnik, 2006, p. 380). To develop the potential giftedness of its students in an equitable manner, LAUSD needs to find different “[w]ays to identify and nurture children of promise,” including developing “[m]ore information about [its] assessment tools” (Robinson, 2006, p. 343).

Well-reasoned policy decisions must be made on the basis of timely and accurate data. No Child Left Behind (NCLB) statistics are broken down by

subgroups such as ethnicity and special needs, but not by gender or giftedness; adding gender and giftedness to the NCLB subgroups would give educational policymakers more precise data on which to base their programmatic decisions. A statistical analysis of the LAUSD Gifted and Talented student data base should be conducted by the LAUSD Assistant Superintendent for the Planning, Assessment and Research Division to confirm this study's findings, so that the Board of Education and the Superintendent will have accurate information from which to create a policy which would require that any screening of students for gifted services be gender- and ethnic-neutral in its impact. Lohman, Lubinski, and Benbow, among others, have shown through their research that there are other more appropriate screening devices, including above grade level testing such as the SAT, to identify intellectual students who would benefit from high level gifted programs. LAUSD could run statistical analyses to determine which test would be a better fit for LAUSD's demographics and to determine what the impact of using the Raven has been on girls and students "of color," for whose ostensible benefit the Raven was originally adopted. What is needed now is the political will by the LAUSD board of education to implement an equitable public education policy for gifted identification and service delivery, which is particularly acute at the primary school level.

Finally, we are failing as a nation to develop the intellectual capital of all of our mentally gifted children, which impacts girls (and students "of color") disproportionately. Nurturing excellence through talent development can play a major part in the advancement of nation-states' education and economic agendas,

particularly in science, technology, engineering, and math. A number of countries, including Brazil, China, India, Israel, and Russia, consider students who are mentally gifted to be an integral part of their patrimony, with gifted education deemed to be for the good of the whole society and the promotion of progress (Grigorenko, 2000; Moon & Rosselli, 2000):

The traditional Russian system of education adopted the “natural resources” philosophy of gifted education, which taught that the abilities of gifted students must be developed and harnessed so they could be placed at the service of the community (Gross, 2003, p. 554).

In the U.S., however, with our high dropout rates and scarcity of opportunities for mentally gifted children to appropriately develop their talents for the good of society rather than gangs, it is time to rethink our gifted educational policies. The economics of the global market place may ultimately become the final arbiter of a nation-state’s talent development policy. The Board of Education of LAUSD must finally create and implement a public policy of identification of and services for all of its highly gifted students.

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**Appendix A: Principal's letter of permission to conduct research**

LOS ANGELES UNIFIED SCHOOL DISTRICT  
*Superintendent of Schools*

*Pacific Avenue Elementary School*

*Principal*  
PACIFIC AVENUE  
LOS ANGELES, CALIFORNIA

June 20, 2007

Assistant Superintendent for the Planning, Assessment and Research Division  
LAUSD  
Los Angeles, California

Dear Assistant Superintendent,

This letter is in support of a doctoral dissertation research project by a third year Ed. D. student at USC, L. R. Grossman, on the issue of gender equity in gifted education. This research is comprised of interviewing 10 teachers regarding gifted education with a follow-up interview. It will take place in the Fall of 2007.

Thank you for your support of this IRB application.

Sincerely,

/S/

Principal

**Appendix B: Observation checklist**

Date\_\_\_\_\_ Location of Observation\_\_\_\_\_ Time start/finish\_\_\_\_\_

Name(s)/Job titles of adults present\_\_\_\_\_

1. AT INITIAL CLASSROOM OBSERVATION ONLY, describe artifacts, including posters and curricular materials, which indicate gender and/or gifted sensitivity, etc., including boys and girls portrayed in traditional roles and/or differentiated curricula to indicate pacing of instruction for students who are identified as gifted.

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2. Describe whether classroom seating arrangements are gender and/or gifted sensitive. Describe the types of interactions, e.g., how do boys interact with respect to girls, and do students identified as gifted sit or interact with students who are not so identified:

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3. Describe the classroom (social/emotional) environment, including the manner in which students are called upon when raising hands, distribution of assignments, special out-of-classroom duties, etc., as well as teacher responses.

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4. What differentiated activities are gifted students involved in during the regular school day? Note the distribution of gifted girls and boys in core academic subjects (math) and/or elective subjects (visual arts and technology). What is their level of engagement?

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5. What differentiated activities are gifted students involved in during the afterschool enrichment programs? Note the distribution of gifted girls and boys in each. What is their level of engagement?

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Additional observations re: gender equity and gifted:

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**Appendix C: Interview protocol**

Date\_\_\_\_\_ Location of interview\_\_\_\_\_ Time start/finish \_\_\_\_\_

Name of interviewee\_\_\_\_\_ Job title of interviewee\_\_\_\_\_

1. How long have you been teaching here? \_\_\_\_\_

2. What grades have you taught here and at other schools?  
\_\_\_\_\_  
\_\_\_\_\_

3. What teaching experience have you had teaching gifted students?  
\_\_\_\_\_  
\_\_\_\_\_

4. Do you have any professional certifications or endorsements, and, if so, in what?  
\_\_\_\_\_  
\_\_\_\_\_

5. What did you earn your undergraduate and graduate degrees in?  
\_\_\_\_\_  
\_\_\_\_\_

6. Please describe the extent of your training and/or experience in gender equity issues in education, including professional development. PROBING: Were these activities linked to Title IX?  
\_\_\_\_\_  
\_\_\_\_\_

7. How do your students become sensitized to gender equity issues?

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8. What programs or activities, if any, on gender equity do your students take part in, and if so, how often? Would you mind providing me with any bulletins or curricular materials?

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9. What is your understanding of Title IX?

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10. Please describe the extent of your training and/or experience in gifted education, including professional development.

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11. What do you feel are characteristics common to gifted children?

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12. What is your understanding of the gifted laws in the state of California?

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13. Have you had any experience in teaching children who are “twice exceptional,” i.e., who may be both gifted and have an IEP or a 504 plan, e.g., who may be both gifted or highly gifted, with Asperger’s Syndrome, AD/HD, or learning disabilities (LD)? If so, please describe your experience(s).

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14. How do you search for, refer, and screen students for eligibility in the gifted program?

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15. Have you participated in your school’s gifted student screening and review committee? If so, could you please describe your experience(s)?

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16. What happens to the students in your class once they have been identified as gifted?

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17. How are students chosen for various gifted program options, including accelerated math, enrichment, and extracurricular classes such as technology?

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18. What happens to students you believe are gifted who aren't formally identified?

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19. How would you describe the different learning styles of gifted girls versus gifted boys?

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20. How, if at all, do you modify your **METHOD OF INSTRUCTIONAL DELIVERY** to take these different learning styles into account?

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21. In your general education classroom, how do you differentiate the **CURRICULUM** to teach the gifted?

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22. How would you describe your interactions with the parents of your gifted students?

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23. Are there forums for parents of gifted students, including talks by experts in the field? If so, how often?

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24. Have you ever participated in the preparation of your school site's gifted budget? If so, what has been the extent of your involvement?

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25. Thank you for taking the time to speak with me today on the issue of gender equity in gifted education. We've gone over a wide range of topics. Are there any other issues or concerns you would feel comfortable sharing with me?

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