

Gender Similarities and Differences in Learning, Development and Performance

District 39 Long-Range Plan
Priority Two – Encouraging Exploration, Discovery,
and Creativity

A Report by the District 39 Community Review Committee
June 2006

CRC Subcommittee Members

Keith Dronen, Co-Chair

Jason Weller, Co-Chair

Michele Augustynski, CRC President

Diane Fisher, Ph.D., CRC Past-President, Clinical Psychologist

Suzanne Goff, Differentiation Support Teacher, Central School

Kathy Hofschild, M.Ed., First Grade Teacher, Harper School

David Palzet, Ph.D., Principal, Wilmette Junior High School

Chris Rusnak, School Psychologist, Central School

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SECTION ONE – EXECUTIVE SUMMARY

The Gender Differences in Learning Subcommittee of the Community Review Committee (CRC) investigated whether the gender similarities and differences in learning, development and performance suggested in recent literature actually exist in District 39 and, if so, where, how much, why, and what can be done. This report summarizes the work of the subcommittee and recommends next steps.

Research:

The subcommittee used a multi-pronged approach to build a baseline of knowledge assessing these issues. First, the CRC surveyed District 39 teachers to assess their knowledge of, experiences with and attitudes toward gender differences in learning. Second, the subcommittee compiled District K-8 tables of GPA, IEP, ITBS, ISAT, CogAT and other data to compare gender differences in learning and achievement. Third, the subcommittee reviewed School Impact Plans (SIP's), and met with the Administrative Council. Finally, the subcommittee reviewed recent literature on this topic and compared benchmark districts' data and perceptions to District 39.

Findings:

The CRC was surprised at the consistent evidence of girls outperforming boys in District 39, both in the classroom and on standardized test scores. Our findings suggest there are significant gender differences in learning within the district. These differences begin early and increase in higher grades. The evidence points to the need for a paradigm shift in the perception of gender within our district. As in other benchmark districts, District 39 had little realistic perception of the gender gaps. These gaps go well beyond the language arts test scores (the most well known difference, with boys achieving statistically significantly below girls). Below are highlights of the subcommittee's findings.

Grades:

- In grades 5-8, girls' grades were higher than boys across all four core subjects (reading, writing, science and math). It appears that girls have figured out how to get good grades, and as they experience success, continue to be rewarded for behaviors that are valued.
- The performance gap increased over the past few years across all subjects.
- The gap is greatest in reading and writing, but exists in other subjects also.
- Boys are significantly more likely to receive a C or lower, and girls are 30-35% more likely to get an A.
- In every level of Junior High math, girls have outperformed boys, across 4 years of data and 4 levels of math.

Standardized Tests:

- **Language Arts** – Girls outperform boys across seven ITBS Language Arts scores (Total Reading, Reading Comprehension, Language Arts Aggregate, Total Language, Punctuation, Capitalization, Usage and Expression), across all 5 grades (even when excluding IEP students) with only one exception (3rd grade Reading). Only Vocabulary and Spelling skills were not statistically significantly different by gender. Girls also perform significantly better on ISAT Reading and Writing. On the CogAT,

a test of academic aptitude, girls tend toward higher verbal and non-verbal scores across the grades surveyed: grades 3, 5 and 7.

- **Math** - Boys outperform girls in ITBS mathematical concept and estimation, problem-solving and data interpretation and less so on computation scores, with the largest differences in the earlier grades. These gaps narrow as students get older. These math differences by gender were statistically smaller than language arts differences (even with IEP students excluded). Boys also exceed girls on CogAT quantitative ability in grades 3, 5 & 7. On the ISAT, there are no consistent gender differences in math scores, across years (2004, 2005) and grades (3, 5, 8).

Academic Placement:

- 71% of IEP students in D39 are male
- IEP students do not do as well on standardized tests in D39
- No significant gender differences seen in assignment to Early Reading Intervention program in grades K – 4 (does not include IEP)
- More boys are identified as Gifted & Talented in 3rd and 4th grade, more boys are identified for enriched language arts in 6th, 7th and 8th grades, more boys are identified for accelerated math (these differences decline by 8th grade, with more girls participating), and 66% of students enrolled in New Trier mathematics are boys.

Teacher Perception (Survey Results):

- 87% of D39 teachers (272) completed the survey
- The teachers surveyed reflect a general district-wide misperception that gender differences are not relevant. 85% teachers were NOT aware of existing gender differences in GPA.
- Only three teachers opined girls were outperforming boys.
- The general perception was that boys are less organized, more likely to do the minimum, more tired, and a greater behavioral challenge than girls
- There was moderate concern about appropriate classroom and reading materials for boys
- There was some concern about peer dynamics and influences for girls, which serve to undervalue academic achievement
- 60% of teachers are interested in professional development on gender differences in learning
- 88% of the District's classroom teachers are female in D39 (97% in the earlier grades), with percentage of males becoming less since 2002. The evaluation criteria for selecting teachers may reinforce the finding that the number of teachers interviewed vs. hired is lower for men than women.

Behavioral Issues:

- Across grade levels, boys represent the overwhelming majority of discipline referrals and suspensions

Recommendations:

To better address gender differences in learning, the Community Review Committee recommends that the District:

- (1) Adopt a mission statement regarding gender differences in learning. Educational literature states how boys and girls learn differently and our educational practice should reflect this belief.
- (2) Build a database that would be a single repository for data on all tests and grades and that would permit longitudinal study.
- (3) Review teacher hiring practices to ensure they are not biased against male applicants.
- (4) Provide professional development as a means to encourage awareness of and support for the similarities and differences between genders across each area of development.
- (5) Educate the community on gender differences in learning.
- (6) Collaborate with New Trier on a K-12 study.
- (7) Explore innovative classroom arrangements designed to support gender differences to learning and to increase classroom participation. Teachers need the information, freedom and support to make classroom adaptations that address gender. Changes that need to be made should assure teachers that flexibility, creativity, and unique methodology is encouraged to support both boys and girls in the classroom.
- (8) We recommend that School Impact Plan (SIP) teams continue to address gender differences in learning in each school and compile hard data every year to measure progress. A team of SIP key persons might meet from all schools to share ideas and issues.
- (9) The D39 curriculum, and its delivery of instruction, should be carefully analyzed to see if gender differences are acknowledged and supported.

Other recommendations are contained in the full report.

A paradigm shift in D39 would make addressing gender differences an ongoing issue. Of course, gender does not exist in a vacuum. Consequently, the district's Strategic Plan commitment to fostering creativity and respect can and should include a realistic approach to gender.

SECTION TWO – BACKGROUND AND PROCESS

Background

The Wilmette District 39 Community Relations Committee (CRC) considered a variety of topics for focus in the 2005-2006 academic year. The CRC reviewed the District 39 strategic plan, past CRC studies including the 2004-2005 creative report, various topics of interest to administrators, teachers and parents, as well as past school board discussions, and it reviewed academic test score data.

During the 2004-2005 School year, the Wilmette District 39 Board of Education received its benchmarking study. Some of the test score data revealed that among District 39 students taking the Illinois Standards Achievement Test (ISAT), girls were significantly outperforming boys in reading and in writing, and that there was not a statistically significant difference in mathematics. Further, the data suggested that in 2004, the gap between girls' and boys' performance on the ISATs was larger in District 39 than in a group of benchmark districts largely in the North Shore Suburbs of Chicago (but also including Hinsdale in the Western Suburbs).

The Board of Education's questions encouraged the CRC to take a hard look at these issues. In parallel with the CRC looking at these issues, District 39 provided some data on the differences in gender performance on the Iowa Test of Basic Skills, which District 39 students in grades 3 through 7 took in November 2005. The questions that the Board members asked of the school district representatives in connection with that data have also informed this report.

After much consideration, the CRC elected to focus on two topics for the 2005-2006 academic year: Progress Reporting and Gender Differences. The CRC divided its membership into two sub-committees, each focused on one of the topics. The charge of the Gender Differences sub-team was to understand:

- to what extent (if any) are boys and/or girls are underperforming in our schools;
- to what extent do policies or instructional practices in our schools contribute to gender-based differences in academic performance, and
- what levers may exist to address gender-based differences in academic performance.

It is our belief that the individuals in the educational community who raised issues about gender-based academic, behavioral and social issues were wise to do so. There are issues and opportunities that hold considerable promise.

This report to the Wilmette District 39 Board of Education is intended to be a step on a journey. It is a journey that requires the development of a longitudinal database that will ultimately benefit District 39 far beyond the gender differences issues. It is a journey that suggests opportunities for enhancements in academic performance of students of both genders. It involves refining our understanding of these issues – particularly at the younger elementary school ages and at the placement of our students as they leave District 39. It is a journey that is best undertaken with New Trier as a partner, to understand if these issues remain at the High School level for our student, and to see whether the concerns raised in this report manifest themselves in student testing and

placement as our students enroll in High School. The job is not yet complete, but we hope that we have taken an important step in enriching District 39's understanding of these issues.

Sub-Committee Composition

Eight CRC members comprise the Gender Differences sub-committee: four parents, two classroom teachers (one of whom is now a curriculum differentiation support teacher), one school psychologist and the Junior High School Principal. The two co-chairpersons of the sub-committee are both parents, and the two other parental members are the current and immediate past Chairpersons of the CRC.

Collectively, the parents have children who have attended or are attending each of the six schools in the District (four elementary schools, Middle School and Junior High School), and their children are a mix of genders. The sub-committee was composed of five women and four men. The educators on the sub-committee are all experienced, and the administrators have all previously been administrators in other school districts. Each of the members of the sub-committee either was responsible for a block of work or co-chaired the completion of a block of work.

Focus of the Team's Efforts

The CRC Gender Differences sub-committee divided its work into four primary blocks.

Literature Review:

First, the committee reviewed both the academic literature and the mainstream press articles and publications on gender differences, including data on differences in academic performance, social development, learning approaches, brain research, etc. The sub-team reviewed articles suggesting that gender differences were a major problem as well as articles suggesting that the issues associated with gender differences are simply a fad.

The sub-team felt that these varying opinions informed the dialogue and provided insight into potential actions and the implications of these actions. Substantially all of the members of the sub-team contributed articles or sources that they thought worthy of the group's review. This document contains a summary of the literature including insights and conclusions that may have implications for the district, and a compilation of source documents for those who wish to pursue these issues with greater rigor.

Input from Educators and Administrators:

Second, the sub-committee undertook to understand the perceptions of educators and administrators in District 39 on gender differences in academic, behavioral and social performance. They began by reviewing the gender differences objectives in the Junior High School Improvement Plan for 2005-2006 with Principal Dave Palzet, because the Junior High was the one school in the district that had identified these issues as worthy of a proactive effort in the current school year, including it in their school improvement plan. The sub-committee developed a survey instrument for educators in February 2006.

The participation in the survey instrument exceeded the expectations of the sub-committee. Over 270 educators filled out the survey, which was administered electronically. There was no unanimity of views, but the sub-committee benefited greatly from the sense of the educators' perceptions as well as specific comments from them. Some see the issues as a passing trend, while others see serious issues.

The Wilmette District 39 Community thanks the educators and the Wilmette Educational Association for a tremendous response. The sub-committee also developed questions that members discussed with the Administrative Council in April for over an hour. The input from both the educators and members of the Administrative Council informed and are reflected in both the findings and recommendations of the sub-committee.

Data From District 39:

Third, the sub-committee sought to gain a baseline of factual data that would view the issues related to gender differences, not as an academic exercise, but as a live, breathing set of dynamics inside District 39. The team developed an initial request list for Dr. McGee and the administration that focused in six areas:

- student academic performance, through grades or other internal tests that we administer,

- student standardized test scores,
- student academic placement,
- IEPs and their impact on gender differences,
- behavioral dynamics,
- and classroom teacher composition.

Because there is no single repository for this information in District 39 today (much of the information exists at individual schools, in a variety of spreadsheets or database programs and is collected in ad hoc manner), many individuals in many schools were instrumental in collecting data. The sub-committee owes much appreciation to each of the school principals and many of the administration and many unidentified individuals at specific schools.

Each of the four school district individuals on the sub-committee were extremely helpful in identifying the type of information that was available, and in some cases worked with their colleagues to actually locate the data. The team subsequently sought to expand the data collection to include information by gender about 8th grade placement tests for 9th grade and actual 9th grade student placement and success (from New Trier High School). We have attempted to gather this information, but have not yet been successful, but continue to seek this data. Our recommendations reflect the need for a collaborative K-12 effort involving New Trier and D39, and we are optimistic that the leadership in New Trier will recognize the value of this collaborative effort.

Input and Data from Other Districts

Fourth, the sub-committee sought to learn from other districts about how they viewed gender differences among their students at multiple levels. Did these districts observe differences in academic, behavioral and social performance between boys and girls? Did these districts see issues worthy of addressing and if so, what actions had they taken? To address this, the sub-committee undertook a multi-pronged approach.

Through the efforts of Dr. McGee, the sub-committee was able to review reports from Edina, Minnesota, a unitary (PreK-12) school district in the Twin Cities area that had previously undertaken efforts to understand and address gender differences in the Edina School District. The sub-committee has been unable to identify any other districts that have undertaken efforts of the depth and rigor of the Edina effort. After reviewing the Edina work, the sub-committee sought to gather information from benchmark districts both in Northern Illinois and in select other areas in the country (for instance, Highland Park, TX and Scarsdale, NY) on the gender differences issues.

To do this, the sub-committee benefited from phone survey work that the Progress Reporting sub-committee had undertaken with these other districts. Most of the other districts surveyed lagged behind District 39 in understanding differences in gender academic, behavioral and social issues. Finally, the sub-committee (with substantial assistance from Phil Earvolino) sought to compare our data with that of Edina, Minnesota (and select other data where available) to ascertain whether our issues are unique to Wilmette or are being experienced in at least one other similar district that has studied these issues.

SECTION THREE – LITERATURE REVIEW

The Community Review Committee (CRC) conducted research and gathered data from literature to determine whether gender differences exist in learning, development and performance for K-12 and college students in the United States and other industrialized nations. To the extent that the research and data identified any differences, CRC looked for common theories and insightful recommendations contained in the literature as to how educators and parents might proceed to improve upon learning and development for both girls and boys.

The **first part** of this review briefly reviews the history of gender research. **Part II** of this review identifies quantitative gender similarities and differences between boys and girls identified in the literature. The **third part** discusses opinions offered by educators, parents, academia, and other interested parties as to why these similarities and differences exist. Finally, **Part IV** addresses possible solutions offered by the literature as to how to improve upon learning and development for both girls and boys.

PART I – History of Gender Research

Research beginning in the 1960's focused a great deal on bias against females in school and in the workforce. (Edina Report. 2002 , Carol Gilligan. *In a Different Voice*, 1982.). During the 1970's through the early 1990's, gender research primarily focused on girls in the field of education and that "career expectations and subject choices were structured along traditional gender lines, to the disadvantage of females." (Edina Report citing Sharpe, Deem Sharma & Meigham, Griffin, and Gilligan) (*AAUW Report: How Schools Shortchange Girls*, 1992).

Beginning in the late 1990's to the present, research on gender has gradually shifted its focus from females to males. Specifically while much of the research addresses gender issues and ways to improve and raise the performance and development for both girls and boys, the primary focus is underperformance of boys in the educational system.

Raising Cain, Kindlon, 1999.

Boys and Girls Learn Differently, Gurian, 2001.

The War Against Boys, Sommers, 2002

Why Gender Matters, Sax, 2005

"The New Gender Gap: Reading", *Education Reporter*. April, 2005.

"The Trouble With Boys." *Newsweek*. January, 2006.

"The New Gender Gap". *Business Week*. May, 2003.

PART II – Similarities and Differences in Learning, Development and Performance

There are approximately 72 million persons enrolled in U.S. elementary, secondary, and degree-granting institutions and this number is projected to increase to 76 million through 2014, according to the U.S. Department of Education, National Center for Educational Statistics (NCES) which has compiled data on most aspects of education including

various issues relating to gender differences. (U.S. Department of Education, National Center for Education Statistics, Projections of Education Statistics to 2014)

Much of the student performance data discussed by NCES is drawn from the National Assessment of Education Progress (NAEP) which conducts assessments that provide current information for the nation and specific geographic regions. They include both public and private school students from grades 4, 8, and 12. Performance data cited by NCES is also drawn from early childhood studies starting in kindergarten and following children's reading and mathematics achievement through third grade.

The data suggests there are numerous similarities as well as differences between girls and boys in grades K-12 in: (1) academic achievement, (2) psychological, learning, and behavioral disorders, (3) maturity, discipline and behavior, (4) athletics and extracurricular activities, and (5) physical characteristics of the brain.

Starting in kindergarten, girls score better than boys in reading achievement and this is true for all grades tested. (*Students' Reading and Mathematics Achievement through 3rd Grade*, Table 8-1, NCES; *Reading Performance of Students in Grades 4 and 8*, Table 9-2, NCES). Girls also perform significantly better in writing in grades tested: fourth, eighth, and twelfth. ("Average Writing Scale Score for 4th, 8th, and 12th-Graders, by Selected Student and School Characteristics: 2002", NCES) (*Trends in Educational Equity of Girls & Women: 2004*, NCES)

In general, boys score slightly better than girls in math for all grades tested. (*Students' Reading and Mathematics Achievement Through 3rd Grade*, Table 8-1, NCES; *Reading Performance of Students in Grades 4 and 8*, Table 9-2, NCES). ("Average Writing Scale Score for 4th, 8th, and 12th-Graders, Selected Student and School Characteristics: 2002", NCES). Likewise, boys score slightly higher than girls for grades surveyed: grades 4, 8, and 12. (*The Nations Report Card; Science 2005*, NCES) Boys tend to score better in history and geography. ("Tables 13-2 and 14-2", NCES) On the Scholastic Assessment Test (SAT), historically, girls have outperformed boys on the verbal section and boys have outperformed girls on the math section. ("Table 129", NCES, citing College Entrance Examination Board, *National Report on College-Bound Seniors, 1966-67 through 2002-03*)

When it comes to classroom grades and homework, girls outperform boys in elementary and in high school. This is also true for college and even graduate school. ("Understanding and Raising Boys", PBS, Citing NCES) Girls study harder and are quieter in class and boys act up more and are louder. Girls take more difficult courses in middle and high school at a higher rate than boys. Girls receive approximately 60 percent of the A's, and boys receive about 70 percent of the D's and F's. Among students performing in the top fifth of high school grade ranges, 63 percent are girls. (*Boys and Girls Learn Differently*, Gurian) The percentage of high school dropouts is greater for males than females. (U.S. Department of Labor, NCES 2005-094)

Females are less likely to experience a learning, psychiatric, or behavioral disorder. For example, boys are more likely to be assigned to special education and they account for two-thirds of learning disability diagnoses, account for 90 percent of discipline referrals, dominate diagnoses of ADD/ADHD, and are more highly medicated. ("With Boys and Girls in Mind", Gurian and Stevens, *Educational Leadership*. November 2004)

Boys constitute 70 percent of serious drug and alcohol problems. Girls suffer the majority of overt cases of depression and for every one boy who attempts suicide, four girls do. For every girl who actually commits suicide, however, four boys do. (*Boys and Girls Learn Differently*, Gurian, 2001)

Girls dominate extracurricular activities such as student government, after-school club leaders, and school community liaisons. Boys engage in more sports activities than girls. (*Boys and Girls Learn Differently*. Gurian, 2001)

In 1999-2000 at the elementary and secondary levels, 75 percent of public school teachers and 76 percent of private school teachers were woman. (NCES)

As far as post-secondary education, according to NCES women continue to earn more degrees than men. For example, in academic year 2002-03 women earned 60 percent of associate's degrees, 58 percent of all bachelor's degrees, and 59 percent of all master's degrees. (U.S. Department of Education, National Center for Education Statistics. 2005. Postsecondary Institutions in the United States: Fall 2003 and Degrees and Other Awards Conferred: 2002-03, NCES 2005-154)

In obtaining bachelor's degrees women have made significant gains from 1970-71 to 2001-02 in the traditionally male-dominated fields of mathematics (females received 37.9% of degrees in 1970-71, which increase to 46.7% in 2001-02), physical sciences (13.8% to 42.2%), computer science (13.6% to 27.6%), agriculture and natural resources (4.2% to 45.9%), business (9.1% to 50.0%), and engineering (0.80% to 20.7%). During this same period women have increased their gains in obtaining bachelor's degrees in traditionally female-dominated fields of health profession and related sciences (77.1% to 85.5%), education (74.5% to 77.4%), language arts (65.6% to 68.6%), psychology (44.4% to 77.5%), social science and history (36.8% to 51.7%), communications (35.3% to 63.5%), and biological and life sciences (29.1% to 60.8%). (U.S. Department of Education, NCES. (2003). *Digest of Education Statistics 2002* (NCES 2003-060), tables 246, 276—297 and (forthcoming) *Digest of Education Statistics 2003* (NCES 2004-024), tables 265, 268, and 271. Data from U.S. Department of Education, NCES, 1969-86 Higher Education General Information Survey (HEGIS), "Degrees and Other Formal Awards Conferred" and 1987-2002 Integrated Postsecondary Education Data System, "Completions Survey" (IPEDS-C:87-02), fall 2002.)

Positron Emission tomography (PET) and Magnetic Resonance Imaging (MRI) enable the medical field to more closely examine the brains of boys and girls. Much of the recent literature suggests that differences in the male and female brain may attribute to gender differences in learning and development. ("With Boys and Girls in Mind", Gurian and Stevens, *Educational Leadership*, November 2004) (*Boys and Girls Learn Differently*. Gurian, 2001) In Part III, we will briefly review some of the differences in the structure of the male and female brain as discussed in the literature.

PART III – Causes of Gender Differences in Learning, Development and Performance

The theories offered as to the root causes of gender differences in learning and development between boys and girls can be categorized into four areas: (1) Differences in the male and female brain, (2) maturity, socialization and culture, (3) educational bias, or (4) a combination of the above three categories.

Biological and Brain Based

Using Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI), and other advances of modern science, brain based theorists suggest there is a disconnect between teaching practices and the needs of male and female brains. In their November 2004 publication in *Educational Leadership*, Michael Gurian and Kathy Stevens discuss the characteristics of female and male brains as taken below in verbatim.

The following are some of the characteristics of girls' brains:

- A girl's corpus callosum (the connecting bundle of tissues between hemispheres) is, on average, larger than a boy's—up to 25 percent larger by adolescence. This enables more "cross talk" between hemispheres in the female brain.
- Girls have, in general, stronger neural connectors in their temporal lobes than boys have. These connectors lead to more sensually detailed memory storage, better listening skills, and better discrimination among the various tones of voice. This leads, among other things, to greater use of detail in writing assignments.
- The hippocampus (another memory storage area in the brain) is larger in girls than in boys, increasing girls' learning advantage, especially in the language arts.
- Girls' prefrontal cortex is generally more active than boys' and develops at earlier ages. For this reason, girls tend to make fewer impulsive decisions than boys do. Further, girls have more serotonin in the bloodstream and the brain, which makes them biochemically less impulsive.
- Girls generally use more cortical areas of their brains for verbal and emotive functioning. Boys tend to use more cortical areas of the brain for spatial and mechanical functioning (Moir & Jessel, 1989; Rich, 2000; *The Essential Difference*, Baron-Cohen, 2003)

Boy's brains have the following traits:

- Because boys' brains have more cortical areas dedicated to spatial-mechanical functioning, males use, on average, half the brain space that females use for verbal-emotive functioning. The cortical trend toward spatial-mechanical functioning makes many boys want to move objects through space, like balls, model airplanes, or just their arms and legs. Most boys, although not all of them, will experience words and feelings differently than girls do (Blum, 1997; Moir & Jessel, 1989).
- Boys not only have less serotonin than girls have, but they also have less oxytocin, the primary human bonding chemical. This makes it more likely that they will be physically impulsive and less likely that they will neurally combat

- their natural impulsiveness to sit still and empathically chat with a friend (Moir & Jessel, 1989; Taylor, 2002).
- Boys lateralize brain activity. Their brains not only operate with less blood flow than girls' brains, but they are also structured to compartmentalize learning. Thus, girls tend to multitask better than boys do, with fewer attention span problems and greater ability to make quick transitions between lessons (Havers, 1995)
 - The male brain is set to renew, recharge, and reorient itself by entering what neurologists call a *rest state*. The boy in the back of the classroom whose eyes are drifting toward sleep has entered a neural rest state. It is predominantly boys who drift off without completing assignments, who stop taking notes and fall asleep during a lecture, or who tap pencils or otherwise fidget in hopes of keeping themselves awake and learning. Females tend to recharge and reorient neural focus without rest states. Thus, a girl can be bored with a lesson, but she will nonetheless keep her eyes open, take notes, and perform relatively well. This is especially true when the teacher uses more words to teach a lesson instead of being spatial and diagrammatic. The more words a teacher uses, the more likely boys are to "zone out," or go into rest state. The male brain is better suited for symbols, abstractions, diagrams, pictures, and objects moving through space than for the monotony of words

SOURCE: (Gurian, 2001) ("With Boys and Girls in Mind", Gurian and Stevens, *Educational Leadership*, November 2004, Volume 63, Number 3)

Because of these differences in the brain between boys and girls, the way each gender develops, thinks, feels and acts is more biological and innate and less cultural and learned. (*Why Gender Matters: What Parents and Teachers Need to Know about the Emerging Science of Sex Differences*, Sax, 2005)

These biological and brain based differences affect the learning process in eight neurodevelopmental systems: attention control, memory, language, spatial ordering, sequential ordering, motor, higher thinking, and social thinking. (*A Mind at a Time*, Mel Levine) For example, on the one hand girls have an advantage in the early grades "by being able to use their left hemisphere strengths in speaking, reading, and writing" and using their right hemisphere strengths "to feel empathy and to better understand and reflect the feelings of their teachers and peers." On the other hand, "boys tend to have an advantage in their left hemisphere by being able to recall facts and rules and categorize. Their right-brain strengths encompass visual-spatial and visual-motor skills, which enable boys to excel in topics like geography, science, and math." ("The New Gender Gap, Why are so many boys floundering while so many girls are soaring", *Scholastic Instructor*, Diane Connell, Betsy Gunzelmann).

Maturity, Social and Cultural

Some of the literature suggests that by school age, the average boy is less mature socially, less verbal, and more active than the average girl. Boys start slower in reading and writing not only in the United States, but also in each of the industrialized countries involved in an international study. In many U.S. schools, children are taught to read in kindergarten where boys are not as skilled verbally as girls. The end result is that boys may develop an identity that they are not up to par as to what the schools require. ("Understanding and Raising Boys", "Boys in School", *PBS*) (The Study is from the Organization for Economic Co-operation and Development, OECD)

There is a body of literature that opines that gender differences in learning and development result from social and cultural norms imposed upon girls and boys of all ages. (*Real Boys: Rescuing Our Sons from the Myths of Boyhood*, William Pollack; *Reviving Ophelia: Saving the Selves of Adolescent Girls*, Mary Pipher) For example, girls may learn to be outwardly “nice” and “gentle” (*Odd Girl Out*, Simmons, Rachel) and boys “strong” and “aggressive” (*Raising Cain: Protecting the Emotional Life of Boys*, Dan Kindlon and Michael Thompson) and this gender socialization impacts the way they learn. Negative influences may include violence on television and video games, preconceived notions of masculinity and femininity on television, at the movies, and in popular print, and an emphasis on sports and popular music rather than academic achievement.

Educational Bias

Some of the literature argues that the curriculum has become feminized to the detriment of boys learning while other literature suggests that the curriculum may reinforce popular gender stereotypes to the detriment of girls. Both views raise interesting points.

Evidence of bias against boys suggested in the literature is over-medication, trend against individual competition and toward teams discouraging the ways in which boys learn, publishers failure to publish and schools failure to provide books for boys such as action and adventure literature, lack of male teachers, decline in recess, and little outlet for boyish energy.

Evidence of bias against girls includes such items as lack of attention to educational achievement in certain subject areas, lack of attention to career aspirations, lack of literature with more positive role models, lack of co-ed teams for talented female athletes especially at the younger grades, and lack of encouragement to explore non-traditional areas of interest such as in math, science, engineering, and computer science.

There is another trend of thought that opines the reason girls have nearly caught up to boys in math and science because educators are “using more verbal functional-reading and written analysis-to teach such spatial-mechanical subjects as math, science, and computer science.” This literature calls for a new movement to change classrooms to better deal with boys’ learning patterns. (Gurian and Stevens, “With Boys and Girls in Mind”, *Educational Leadership*, November 2004; citing Rubin, 2004 and Sommers, 2000)

Combination

Much of the literature suggests that gender similarities and differences apparent in girls and boys is a result of a combination of factors including brain based causes; maturity, socialization and cultural issues; and biases in the educational system.

“The Gender Gap: Boys Lagging”. *CBS News Online*. May 25, 2003.

Special Report. April 2006. “The New Gender Gap.” *Portland Press Herald and The Maine Sunday Telegram*.

Web Exclusive. “Left Behind? Some say boys have suffered as educators focus more on girls.” *Newsweek*. January 25, 2006.

“The Trouble With Boys.”, MSNBC. Peg Tyre. January 26, 2006.

“Concern Over Gender Gap Shifts to Boys.” *Education Week*, Debra Viadero. March 15, 2006.

“Girls Rule City Schools.” *Chicago Sun Times*. Rosalind Rossi. May 3, 2006.

PART IV – What the Literature Recommends

The literature and data are clear that, no matter the reason, gender differences in learning and development exist at all levels of education. The literature contains numerous suggestions for educators and parents to consider to improve upon learning and development for both sexes at all ages. Some of the recommendations are conflicting given the many points of view and possible agendas. The recommendations discussed below are offered as a starting point for further study, and not a final solution, of possible practices to address the gender differences in learning and development.

Professional Development

Administrators, teachers, and parents must be educated as to how boys and girls learn differently. They need to identify and value these differences in gender in order to address possible solutions. Administrators and teachers should be trained in the varied brain development of boys and girls. Administrators should encourage teachers to employ innovation, creativity, and flexibility in their work with boys and girls. Teachers should remain current on the latest teaching techniques that support the varied learning styles of each gender. Parents must learn about the gains made in science and learning and development since they went to school. They must become involved and work as a team with their children's teachers and schools.

All parties should reject social and cultural stereotypes that impede learning for each gender and embrace gender differences as a reality in the classroom and home.

Gendered Classroom and Gender School Subjects

One author opines that coed schools and classrooms tend to reinforce gender stereotypes, whereas single-sex schools and classrooms can break down gender stereotypes. As a result, single-sex education may help accommodate gender differences. (*Why Gender Matters: What Parents and Teachers Need to Know about the Emerging Science of Sex Differences*, Sax, 2005.) Even in a coed setting, some of the literature recommends that educators and parents consider single-sex classrooms or, within the classroom, single-sex circles. (*Boys and Girls Learn Differently*, Gurian, 2001)

Creative Classroom Design

The goal in creating an effective design is to get boys and girls involved and excited about being in the classroom. Easily accessible manipulatives, books geared specifically for boys and others specifically for girls as well as high interest, current non-fiction books should be highly visible in the classroom. Open space that allows for physical movement, flexible and changeable seating arrangements, and options for work areas will fit boys' needs for space and movement. ("With Boys and Girls in Mind", Gurian and Stevens, *Educational Leadership*, November 2004, Volume 63, Number 3) (*Boys and Girls Learn Differently*, Gurian, 2001)

Teaching Boys and Girls in the Classroom

The literature offers specific examples to create a classroom environment to address gender differences in learning and development where boys and girls will both benefit. To summarize, these suggestions (most of them taken verbatim) are:

For The Boys

- Place books on shelves all around the room so boys get used to their omnipresence
- Tap into visual-spatial strengths
- Use manipulatives to promote fine motor development
- Make lessons experiential and kinesthetic
- Keep verbal instructions to no more than one minute
- Personalize the student's desk, coat rack, and cubby to increase his sense of attachment
- Use male mentors and role models, such as fathers, grandfathers, or other male volunteers
- Let boys nurture one another through healthy aggression and direct empathy.
- Train teachers in male hormonal and adolescent brain development
- Provide boys with quick tension-release strategies, both within and outside classroom courses
- Teach and integrate emotional literacy and emotional development curricula in all courses
- Carry out consistently applied discipline systems in all classes, with teachers administrators working as a discipline team to build character and conscience, not enemies
- Recognize and accept the high activity level of boys and allow them to express it.
- Talk to boys in their language
- Encourage boys to express their emotions
- Let boys read and listen to books that appeal to their interests
- Allow discussion of topics boys may want to talk about
- Allow opportunities for competition
- Incorporate technology
- Encourage questioning stereotypes

For The Girls

- Play physical games to promote gross motor skills. Girls are behind boys in this area when they start school
- Have portable/digital cameras around and take pictures of girls being successful at tasks.
- Use water and sand tables to promote science in a spatial venue
- Use lots of puzzles to foster perceptual learning
- Form working groups and teams to promote leadership roles and negotiation skills
- Use manipulatives to teach math
- Verbally encourage the hidden high energy of the quieter girls
- Call on boys and girls equally in class

- Teach all subjects with the use of field trips, physical movement, and multisensory strategies
- Give access to and encourage use of computers
- High expectations
- Reject common stereotypes
- Appeal to multitalented sides
- Pay attention to educational achievements and career aspirations
- Don't assume that she is not interested in technical things

Sources: ("With Boys and Girls in Mind" Gurian and Stevens, *Educational Leadership*, November 2004, Volume 63, Number 3) (Gurian, *Boys and Girls Learn Differently*, 2001) (*Raising Cain: Protecting the Emotional Life of Boys*, Dan Kindlon and Michael Thompson) ("Understanding and Raising Boys, Boys in School", PBS) ("The New Gender Gap, Why are so many boys floundering while so many girls are soaring", *Scholastic Instructor*, Diane Connell, Betsy Gunzelmann, 2004) ("What Math Gender Gap?", *USA Today*, Laura Vanderkam, 2004.) ("Expect the Best From a Girl, That's What You'll Get", Women's College Coalition, <http://www.academic.org/>)

Educating Parents

The literature also contains a number of tips, many of them taken verbatim, for parents to address gender differences in learning and development:

- Become an advocate for gender-specific educational tools and forms
- Be cognizant of your child's learning strengths and weaknesses, and how school is compensating for them
- Be vigilant about class size and teacher-student ratio
- Be involved at home
- Create daily reading rituals where you read to child and they read to you
- Create math game to augment math and spatial learning
- Stay involved with conferences, field trips, mentoring
- Read brain based literature
- Teach empathy nurturance through example
- Become familiar with aggression nurturance, and help direct it in early adolescents so as to increase strength, focus, attentiveness, and hierarchical success
- Consistent discipline including rewards and consequences for all actions
- Character development
- Help the child balance sedentary (computer and study) activities with active (athletic)
- Encourage to take on leadership positions in student government, sports and extracurricular activities
- Encourage children to stick with certain courses even if they are not their strong suit
- Encourage children to take risks and seek challenges
- Encourage children to play organized sports
- Ask your child about school experiences
- Visit classroom to view teacher and child interaction
- Question and discuss with children popular and cultural stereotypes regarding genders

Sources: (“With Boys and Girls in Mind”, Gurian and Stevens, *Educational Leadership*, November 2004, Volume 63, Number 3) (*Boys and Girls Learn Differently*, Gurian, 2001) (*Raising Cain: Protecting the Emotional Life of Boys*, Dan Kindlon and Michael Thompson, 1999.) (“Understanding and Raising Boys”, “Boys in School”, *PBS*) (“The New Gender Gap, Why are so many boys floundering while so many girls are soaring”, *Scholastic Instructor*, Diane Connell, Betsy Gunzelmann, 2004.) (“What Math Gender Gap?”, *USA Today*, Laura Vanderkam, 2004) (“Expect the Best From a Girl, That’s What You’ll Get”, Women’s College Coalition, <http://www.academic.org/>) *Reviving Ophelia : Saving the Selves of Adolescent Girls*, Mary Pipher, 1994.)

Whatever the cause, it is clear that gender differences in learning and development exist and that the literature offers some common sense and novel suggestions as to how to address these differences. School districts across the country are now starting to look at more seriously gender differences in order to improve learning and development for both boys and girls.

SECTION FOUR - FINDINGS

PART I – Academic Performance

1. Girls are outperforming boys in core academic subjects in Grades 5-8 in District 39.

There are statistically significant differences in classroom performance between boys and girls in the 5th through 8th grade levels in Wilmette public schools. In general, girls' academic achievement grades are higher than boys across the four core academic subjects: reading, writing, science and math. In the 7th and 8th grades, the gap in achievement grades in the four core subjects becomes more pronounced. These academic achievement grade differences appear to be greatest in reading and writing, but this is not always the case.

For the 5th and 6th grade students, the committee only has the first reporting period of the 2005-2006 school year. During this period, girls achieved a higher grade score average than boys in each core subject ranging in the 5th grade from 0.09 in science to 0.29 in reading, and ranging in the 6th grade from 0.15 in science to 0.26 in reading. The following are simplified tables of the respective academic achievement grades of 5th graders (Table 1) and 6th graders (Table 2). (The examples of database information in Appendix V. contain more detailed data on these grades):

Table 1: 5th Grade Classroom Grades (Fall 2005-2006)

5 th Grade	Boys GPA	Girls GPA	% of Boys with A's	% of Girls with A's	% of Boys with C's & D's	% of Girls with C's & D's
Reading	3.42	3.71	51%	74%	9%	3%
Writing	3.30	3.56	44%	63%	11%	6%
Science	3.53	3.62	62%	67%	8%	5%
Math	3.44	3.65	54%	70%	10%	4%

In our 5th grade classrooms, girls were not only much more likely to receive A's in each subject than boys but were also much less likely to receive C or lower grades. Out of the total 5th grade population, 23% more girls received A's in reading than boys in reading (74% of girls versus 51% of boys); 19% more girls received A's in writing and 16% more girls received A's in math.

Overall, 5th grade girls were 34% more likely than boys to receive an A in a subject (meaning that the ratio of girls receiving A's to boys receiving A's was 1.34x across all these subjects), and boys were over twice as likely to receive a C or a D than were girls. Only in science was there less than a 15% disparity in girls receiving A's compared to boys. Overall, girls' GPAs averaged 3.635 across these four subjects, compared to Boys' GPAs which averaged 3.422.

Table 2: 6th Grade Classroom Grades (2005-2006)

6 th Grade	Boys GPA	Girls GPA	% of Boys with A's	% of Girls with A's	% of Boys with C's & D's	% of Girls with C's & D's
Reading	3.54	3.80	63%	81%	7%	1%
Writing	3.54	3.76	62%	78%	7%	3%
Science	3.40	3.55	50%	60%	8%	5%
Math	3.29	3.54	40%	62%	10%	8%

In our 6th grade classrooms, girls were not only much more likely to receive A's in each subject than boys but were also much less likely to receive C or lower grades. 22% more girls received A's in reading than boys in math; 18% more girls received A's in reading and 16% more girls received A's in writing. Only in science was there less than a 15% disparity in girls receiving A's compared to boys. Only one girl received less than a B in reading while 18 boys received less than a B. Overall, girls' GPAs averaged 3.662 across these four subjects, compared to boys' GPAs which averaged 3.442. Girls were 30% more likely than boys to receive an A in a subject, and boys were almost twice as likely as girls to receive a C or a D in a subject.

For the 7th and 8th grade students, the committee has 5 years worth of gender based grade point average data across a variety of subjects in each of the 7th and 8th grades. Without exception, girls have significantly higher grade point averages than boys in these academic subjects.

Table 3 and Table 4 highlight performance differences for the first part of the 2005-2006 academic year.

Table 3: 7th Grade Classroom Grades (2005-2006)

Subject	Boys GPA	Girls GPA	Gap in GPAs
Writing	2.98	3.49	0.51
Reading	3.43	3.85	0.42
Science	3.36	3.74	0.38
Pre-Algebra	2.87	3.31	0.44
Honors Pre-Algebra	3.41	3.91	0.50
Explorations	2.59	2.94	0.35

Table 4: 8th Grade Classroom Grades (2005-2006)

Subject	Boys GPA	Girls GPA	Gap in GPAs
Writing	3.00	3.59	0.59
Reading	3.14	3.67	0.53
Science	3.21	3.48	0.27
Algebra	2.99	3.27	0.28
Honors Algebra	3.51	3.95	0.45
Explorations			

2. Girls have outperformed boys by a growing margin overall during the past four years in Grades 7 and 8 in District 39 (we do not yet have multiyear data below the 7th grade level)

From 2002-2003 to 2005-2006, the average gap in fall period GPA between girls and boys at Wilmette Junior High School (District 39) across 11 academic subjects grew from 0.323 to 0.428, a 0.105 increase.

While it appears that the gender difference is not a new development, the size of the difference has clearly widened.

In 2002-2003, only one of eleven subjects had a GPA gap of 0.5 or higher; by comparison, in 2005-2006, four of the eleven subjects have a GPA gap of 0.5 or higher. In 2002-2003, two of eleven academic subjects had a gap of under 0.2; today, none of the subjects has a grade gap of under 0.2.

The gender gap in grades between the genders at the Junior High increased in 10 out of 11 subjects. Seventh grade reading was the only subject in which the gender gap in grades declined.

The data in Table 5 breaks out the number of classes by size of the gap.

Table 5: Number of Junior High Core Academic Subjects by Size of Grade GAP

Gender GPA Gap By Number of Classes	2002-2003	2005-2006	Change
Greater than 0.500	1	4	+3
0.400 – 0.500	2	3	+1
0.300 – 0.400	4	2	-2
0.200 – 0.300	2	2	0
0.100 – 0.200	1		-1
0.000 – 0.100	1		-1
Average Gap	0.323	0.428	0.105

Gender GPA Gap is defined as the Girls' Average GPA in a subject (across all teachers offering the subject) minus the Boys' Average GPA in a subject.

The data in Table 6 shows that the gap in writing GPAs in the 8th grade has grown from 0.37 to 0.59 when comparing the 2002-2003 school year to the 2005-2006 school year, driven entirely by a decline in boys' grades over this period. Girls' grades actually declined somewhat over this period in this subject. Said another way, the academic performance gap has grown because boys' grades have fallen more quickly on average than girls' grades.

The gap in writing GPAs in the 7th grade has grown from 0.40 to 0.51 from the 2002-2003 school year to 2005-2006 school year. After writing grades for both genders peaked in 2003-2004, performance for both genders declined, however the decline for boys was steeper. As with 8th grade writing, the academic performance gap has grown because boys' grades have fallen by a larger number than girls' grades.

Table 6: 7th and 8th Grade Writing Grades and Gap over Time

Grade		2002-2003	2003-2004	2004-2005	2005-2006
8 th Grade	Girls	3.650	3.736	3.727	3.586
	Boys	3.280	3.347	3.292	3.000
	Difference	0.369	0.389	0.434	0.586
7 th Grade	Girls	3.562	3.522	3.448	3.486
	Boys	3.159	3.091	2.935	2.981
	Difference	0.403	0.432	0.513	0.505

As shown in Table 7, the gap in reading GPAs remained relatively constant over the period, growing in the 8th grade from 0.51 to 0.53 from the 2002-2003 school year to 2005-2006 school year, while declining in the 7th grade from 0.46 to 0.42 from the 2002-2003 school year to 2005-2006 school year. Boys and girls' GPAs are both up in reading over the period.

Table 7: 7th and 8th Grade Reading Grades and Gap over Time

Grade		2002-2003	2003-2004	2004-2005	2005-2006
8 th Grade	Girls	3.592	3.632	3.718	3.667
	Boys	3.084	3.123	3.224	3.141
	Difference	0.508	0.509	0.494	0.525
7 th Grade	Girls	3.606	3.627	3.540	3.848
	Boys	3.149	3.236	3.123	3.428
	Difference	0.458	0.392	0.417	0.420

Table 8 shows that the gaps in Science GPAs have grown over time, despite rising grades for boys and girls. The gap in 8th grade Science GPAs has grown from 0.19 to 0.27 from the 2002-2003 school year to 2005-2006 school year (but all of that increase was from 2002-2003 to 2003-2004). The gap in 7th grade Science GPAs has grown from 0.30 to 0.38 from the 2002-2003 school year to 2005-2006 school year.

Table 8: 7th and 8th Grade Science Grades and Gap over Time

Grade		2002-2003	2003-2004	2004-2005	2005-2006
8 th Grade	Girls	3.279	3.349	3.461	3.478
	Boys	3.086	3.069	3.157	3.207
	Difference	0.193	0.280	0.304	0.271

7 th Grade	Girls	3.555	3.568	3.541	3.738
	Boys	3.252	3.237	3.116	3.362
	Differenc e	0.303	0.332	0.425	0.376

The presence of a math GPA gap (Table 9) has been consistent of the period, and it has grown in all five basic classes – Explorations, Pre-Algebra I, Honors Pre-Algebra I, Algebra I, and Honors Algebra I. Because of the placement nature of the math, it is more complex to attribute a basis for these differences.

Explorations had roughly identical Gender based GPA averages in 2002-2003, but since then the GPA gap has consistently been between 0.32 and 0.38. Substantially all of the gap has resulted from declines in the grades received by boys. Girls’ grades are flat to slightly down over the period.

The largest increases in the math GPA gaps have been in the Honors level classes, in which girls have very high GPAs (have risen from 3.13 in 2002-2003 to 3.95 in 2005-2006 in Honors Algebra and have risen from 3.51 in 2002-2003 to 3.911 in 2005-2006 in Honors Pre-Algebra).

Table 9: 7th and 8th Grade Math Grades and Gap over Time

Math Class		2002-2003	2003-2004	2004-2005	2005-2006
Explorations	Girls	3.051	3.052	3.054	2.943
	Boys	3.004	2.676	2.734	2.590
	Differenc e	0.046	0.376	0.320	0.353
Pre-Algebra	Girls	3.173	3.221	3.065	3.314
	Boys	2.775	2.899	2.748	2.871
	Differenc e	0.398	0.323	0.317	0.443
Honors Pre-Algebra	Girls	3.514	3.407	3.673	3.911
	Boys	3.121	3.051	3.288	3.409
	Differenc e	0.393	0.355	0.286	0.502
Algebra I	Girls	3.152	3.270	3.315	3.271
	Boys	2.937	2.975	3.003	2.987
	Differenc e	0.215	0.296	0.312	0.284
Honors Algebra I	Girls	3.132	3.281	3.528	3.947
	Boys	2.863	3.059	3.200	3.506
	Differenc e	0.269	0.222	0.328	0.442

- 3. In general, girls' academic performance has been rising in most subjects, while being relatively stable in writing and explorations over the past four years in Grades 7 and 8 in District 39. Boys have not experienced the same degree of rising grades, and they have actually seen a decline in grades in explorations and, for Grade 7, writing (see tables 6 and 9).**
- 4. The Sub-committee does not have data which compares boys' and girls' GPAs excluding IEP students. While this is clearly worth exploring, given the gap in academic performance, it is unlikely that IEPs alone explain the differences.**
- 5. The sub-committee has had substantially no K-4 grade information to assess students' academic performance at the four elementary schools in District 39.**

Sub-committee members believe that it is important to compare these grades to those in the middle and junior high school to understand at what point is there a divergence in classroom academic performance between male and female students in District 39.

- 6. One of the issues that the sub-committee has been unable to resolve is the question of whether grade performance differences between boys and girls in Wilmette District 39 are driven in part because of what we measure in our current grading criteria.**

A much richer discussion of this topic can be found in the Progress Reporting sub-committee's review of the literature and recommendations. Today, Wilmette District 39 provides grades that reflect the student's performance during a unit of time, which may include classroom participation, homework, quizzes, projects, intermediate and final exams. The Progress Reporting sub-committee has been evaluating whether this is the best way to organize a grading system, or if the better way to organize this is based upon the student's understanding of the curriculum at the completion of a unit – how much does the student understand and grasp the topic. This change, if adopted, could conceivably impact the gender grade gap in the District. The committee has repeatedly heard comments suggesting that male students are not on average so disciplined in completing homework and many of the other transitional steps that may or may not result in lower grades in a different grading structure.

PART II – Standardized Test Performance

The Subcommittee analyzed language arts, math, science and social studies data from the 2005 Iowa Test of Basic Skills (ITBS)¹, 2004 and 2005 Illinois Standards Achievement Test (ISAT)², and 2005 Cognitive Abilities Test (CogAT)³. The results provide a data baseline. They should not be considered as indicating trends due to the limited number of years analyzed.

In some cases, the data may be consistent in its direction, but it does not meet our test for statistical significance. Our test was a 95% confidence interval. It is possible that we will conclude in the future that certain results are statistically significant, but we tried to use quantitative metrics as our guide. We will be happy to send regression and statistical significance analysis upon request; it is not included in this document. Please note that we looked at raw scores, scaled scores and percentiles to gain a fuller view of results, wherever possible.

Language Arts

1. Boys and girls in District 39 showed no overall statistically significant aggregate difference in performance in several key skills including:

Vocabulary – There were no statistically conclusive differences in the performance of boys and girls in District 39 on the vocabulary section of the Iowa Test of Basic Skills (ITBS). In two grades, girls' test scores were moderately higher than boys' test scores on the vocabulary section, while in two grades almost the exact opposite result was observed. In the last grade, there was substantially no difference in results. There was no trend by grade that the sub-committee could observe and no statistically significant difference between the grades.

The test results were as follows:

¹ The ITBS is a battery of achievement tests that measure the knowledge and skills students have acquired in specific content areas. In Districts 39, teachers do not administer the entire battery, but rather specific subtests at different grade levels (grades 3-7). The ITBS was also designed to provide national norms based on a sample of the entire United States population.

² The ISAT is administered to students in grades 3, 4, 5, 7, and 8 in March of each year. Grades 3, 5, and 8 are tested in reading, mathematics, and writing. Grades 4 and 7 are tested in science and social science. The grading scale for the ISAT is 4-Exceed Standards, 3-Meets Standards, 2-Below Standards, and 1-Academic Warning.

³ The CogAT is given to students in grades 3, 5, and 7 and measures learned reasoning and problem-solving skills in three different areas: verbal, quantitative, and nonverbal. Reasoning abilities are good predictors of success in school and are important outcomes of good schooling. The CogAT measures developed abilities, not innate abilities. The development of these abilities begins at birth and continues through early adulthood. It is influenced by both in-school and out-of-school experiences. Because these abilities are closely related to an individual's success in school in virtually all subjects, test results may be used in planning effective instructional programs." (*Cognitive Abilities Test, Report to Parents*, Riverside Publishing, 2005)

Table 10: Vocabulary Portion of the ITBS – All Students – November 2005

Grade	Vocabulary – Girls	Vocabulary – Boys	Difference (Girls – Boys)
Raw Score			
7 th	29.69	29.68	0.01
6 th	29.38	29.89	-0.51
5 th	28.74	28.15	0.59
4 th	26.04	26.34	-0.30
3 rd	21.67	21.37	0.30
Scale Score			
7 th	258.41	258.19	0.22
6 th	245.70	247.92	-2.22
5 th	236.39	234.70	1.69
4 th	217.83	218.61	-0.78
3 rd	195.53	195.09	0.44
National Percentile Rank			
7 th	76.63%	76.14%	0.49%
6 th	76.71%	78.22%	-1.49%
5 th	84.19%	82.19%	2.00%
4 th	81.36%	82.20%	-0.84%
3 rd	78.58%	77.15%	1.43%

The test results were also reviewed to look at the impact of excluding students designated with IEP's. In this case, boys' scores exceeded girls' scores in four of the five grades, but there was virtually no difference in three of the grades, and there was no trend by grade.

Table 11: Vocabulary Portion of the ITBS – Excluding students with IEP's – November 2005

Grade	Vocabulary – Girls	Vocabulary – Boys	Difference (Girls – Boys)
Raw Score			
7 th	30.21	30.47	-0.26
6 th	30.33	31.14	-0.84
5 th	29.31	29.08	0.23
4 th	26.54	27.38	-0.84
3 rd	21.89	22.05	-0.16
Scale Score			
7 th	260.17	260.91	-0.74
6 th	248.93	253.10	-4.17
5 th	238.26	237.71	0.55
4 th	219.28	221.84	-2.56
3 rd	196.19	197.25	-1.06
National Percentile Rank			
7 th	78.38%	78.95%	-0.57%
6 th	80.05%	82.50%	-2.45%
5 th	86.09%	85.34%	0.75%
4 th	83.12%	85.84%	-2.72%
3 rd	79.49%	79.98%	-0.49%

Spelling – Girls’ scores on the spelling portion of the Iowa Test of Basic Skills (ITBS) are significantly higher than boys’ scores in grades 5 through 7, although not statistically significant in grade 4. Excluding IEP students, however, there are no statistical differences between boys’ and girls’ spelling skills among District 39 students.

The test results were as follows:

Table 12: Spelling Portion of the ITBS – All Students – November 2005

Grade	Spelling – Girls	Spelling – Boys	Difference (Girls – Boys)
Raw Score			
7 th	30.08	29.23	0.85
6 th	27.38	26.51	0.87
5 th	27.12	25.77	1.35
4 th	24.37	24.19	0.18
Scale Score			
7 th	264.94	261.77	3.17
6 th	246.61	241.95	4.66
5 th	237.20	231.27	5.93
4 th	218.83	217.53	1.30
National Percentile Rank			
7 th	75.88%	72.89%	2.99%
6 th	70.69%	68.17%	2.52%
5 th	77.63%	73.17%	4.46%
4 th	77.88%	77.57%	0.31%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In two of the grades, girls’ scores exceeded boys, while in the other two grades, boys’ scores exceeded girls’ scores, although not in a statistically meaningful manner for 6th grade.

Table 13: Spelling Portion of the ITBS – Excluding students with IEPs

Grade	Spelling – Girls	Spelling – Boys	Difference (Girls – Boys)
Raw Score			
7 th	30.86	30.40	0.46
6 th	28.25	28.32	-0.07
5 th	27.73	27.04	0.69
4 th	24.65	25.21	-0.56
Scale Score			
7 th	267.98	266.10	1.88
6 th	250.25	249.58	0.67
5 th	239.61	235.72	3.89
4 th	219.98	221.38	-1.40
National Percentile Rank			
7 th	78.42%	76.78%	1.64%
6 th	73.74	74.49	-0.74%
5 th	79.81	78.02	1.79%
4 th	79.10	81.76	-2.66%

Verbal portion of the CogAT tests – On average, for the November 2005 test, girls had slightly higher scores than boys on the verbal portion of the CogAT, with the gap being largest at the elementary school level but the results are not statistically significant.

Table 14: CogAT Verbal – Raw Test and Scale Scores (November 2005)

Grade	3rd	5 th	7th
Raw Test Scores			
Girls	53.8	55.8	54.5
Boys	52.4	55.4	53.6
Difference	1.4	0.4	0.9
Scale Scores			
Girls	189.1	210.8	224.3
Boys	184.4	209.9	222.7
Difference	4.7	0.9	1.6

Non-Verbal portion of the CogAT tests - On average, for the November 2005 test, girls had slightly higher scores than boys on the non-verbal portion of the CogAT, with the gap being largest at the elementary school level and the gaps remaining relatively constant from 3rd to 5th grade.

Interestingly, the gap in raw test scores is larger than the gap in the raw test scores for the Verbal test, but the gaps in scale scores are actually virtually identical between the two tests in aggregate.

Table 15: CogAT Non - Verbal – Raw Test and Scale Scores (November 2005)

Grade	3rd	5 th	7 th
Raw Test Scores			
Girls	51.6	53.5	53.0
Boys	49.9	52.0	51.6
Difference	1.7	1.5	1.4
Scale Scores			
Girls	197.9	212.8	222.2
Boys	193.6	211.6	220.8
Difference	4.3	1.2	1.4

Total Reading Scores on the Iowa Test – There were relatively modest differences in total reading comprehension scores. In 2004, there were no statistical differences between the genders, but in 2005, girls statistically outperformed boys in total reading in the 3rd and 5th grade levels.

Table 16: Total Reading Scale Scores - ITBS – All Students

Test Date	Grade	Girls	Boys	Difference (Girls – Boys)
November 2005	7 th	266.10	264.04	2.06
	6 th	251.21	251.14	0.07
	5 th	240.40	235.53	4.87
	4 th	223.16	221.48	1.66
	3 rd	200.08	196.41	3.67
November 2004	7 th	262.34	260.38	1.96
	6 th	252.47	248.49	3.98
	5 th	235.78	236.39	-0.61
	4 th	222.63	219.69	2.94
	3 rd	201.34	199.42	1.92

The distribution of District 39 students’ test scores in November 2005 in ITBS Total Reading reveals a slightly higher percentage of girls scoring in the top 4% of the test (30.9% to 26.9%) and a higher percentage of boys scoring in the bottom 50% of the test (12.2% versus 8.1%).

Table 17: Total Reading: Percentage of District 39 Students Scoring in these Percentiles

Grade	Gender	1-25%	26-50%	51-75%	76-95%	96-98%	99%
7 th	Girls	2.6%	5.7%	20.1%	44.8%	11.3%	15.5%
	Boys	6.1%	8.1%	14.6%	44.4%	12.6%	14.1%
6 th	Girls	2.7%	8.6%	23.8%	35.1%	13.0%	16.8%
	Boys	5.1%	9.3%	18.1%	36.7%	14.3%	16.5%
5 th	Girls	1.6%	4.7%	14.1%	43.8%	16.7%	19.3%
	Boys	3.0%	7.6%	16.2%	47.7%	8.6%	16.8%
4 th	Girls	1.0%	6.8%	17.9%	37.7%	12.6%	24.2%
	Boys	2.8%	6.9%	14.3%	44.7%	12.0%	19.4%
3 rd	Girls	2.0%	5.5%	18.0%	49.5%	13.5%	11.5%
	Boys	3.1%	8.9%	21.5%	47.6%	11.5%	7.3%
All	Girls	1.9%	6.2%	18.7%	42.2%	13.4%	17.5%
	Boys	4.0%	8.2%	16.9%	43.9%	11.9%	15.0%
	All	3.0%	7.2%	17.8%	43.1%	12.6%	16.2%

2. In a variety of writing and reading related skills, girls showed statistically significantly stronger academic performance including:

Reading Comprehension – In all five grades, girls statistically outperformed boys on the reading comprehension portion of the Iowa Test of Basic Skills (ITBS). Even excluding IEP students, girls outperformed boys in reading comprehension in all five grades, although the results are statistically not significant in 6th grade and only moderately significant in 4th and 7th grade (but are significant in grades 3rd and 5th).

The test results were as follows:

Table 18: Reading Comprehension Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	37.99	36.78	1.31
6 th	35.12	34.55	0.57
5 th	34.02	32.06	1.96
4 th	31.53	30.68	0.85
3 rd	27.47	25.37	2.20
Scale Score			
7 th	273.76	269.92	3.84
6 th	256.57	254.39	2.17
5 th	244.43	236.40	8.03
4 th	228.14	224.29	3.85
3 rd	204.79	197.83	6.96
National Percentile Rank			
7 th	81.47%	78.09%	3.38%
6 th	78.74%	77.03%	1.71%
5 th	82.39%	76.66%	5.73%
4 th	81.51%	79.26%	2.25%
3 rd	81.31%	75.08%	6.23%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In this case, girls' scores exceeded boys' scores in all five grades, with statistically significant differences in three of the grades, with less meaningful differences in grades 4 and 6 (indeed, in grade 6, there was no statistical difference between boys and girls).

Table 19: Reading Comprehension Portion of the ITBS – Excluding students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	38.82	38.03	0.79
6 th	36.28	36.08	0.20
5 th	34.87	33.25	1.62
4 th	31.96	31.61	0.35
3 rd	27.77	26.21	1.56
Scale Score			
7 th	276.79	274.44	2.35
6 th	261.17	261.09	0.08
5 th	247.53	240.70	6.83
4 th	229.61	227.56	2.05
3 rd	205.63	200.16	5.47
National Percentile Rank			
7 th	83.68%	81.48%	2.20%
6 th	82.39%	81.51%	0.88%
5 th	84.97%	80.38%	4.59%
4 th	82.91%	82.23%	0.68%
3 rd	82.23%	77.81%	4.42%

Reading and Writing Tests on the ISAT – A review of the last two years’ ISAT test scores shows that girls significantly outperformed boys in District 39, except in third grade reading in 2005. Please note that the ISAT in 2005 was revised to exclude the writing section.

In each case, girls were far more likely to achieve exceeds expectations (4), while boys were statistically more likely to receive academic warning (1) or below standards (2).

Table 20: ISAT Reading Scores - District 39

Grade	Year	Gender	ISAT Split: 1 = Warning, 2= Below, 3= Meets, 4= Exceeds				Average	Difference
			1	2	3	4		
Grade 3	2005	Girls	0.0%	7.1%	43.3%	49.5%	3.42	0.03
		Boys	1.4%	8.2%	40.4%	50.0%	3.39	
	2004	Girls	0.6%	4.5%	31.1%	63.8%	3.58	0.21
		Boys	2.6%	7.9%	38.9%	50.5%	3.37	
Grade 5	2005	Girls	0.0%	12.1%	46.7%	41.2%	3.30	0.12
		Boys	0.9%	17.5%	44.0%	37.6%	3.18	
	2004	Girls	0.0%	8.5%	24.3%	67.2%	3.59	0.15
		Boys	2.6%	7.9%	38.9%	50.5%	3.44	
Grade 8	2005	Girls	0.0%	7.4%	53.7%	39.0%	3.32	0.12
		Boys	0.5%	11.2%	57.7%	31.2%	3.20	
	2004	Girls	0.0%	4.2%	55.6%	40.2%	3.36	0.15
		Boys	0.5%	8.3%	61.5%	29.8%	3.21	

Table 21: ISAT Writing Scores - District 39

Grade	Year	Gender	ISAT Split: 1 = Warning, 2= Below, 3= Meets, 4= Exceeds				Average	Difference
			1	2	3	4		
Grade 3	2004	Girls	0.0%	18.5%	74.7%	6.7%	2.88	0.19
		Boys	0.9%	30.0%	62.5%	4.7%	2.69	
Grade 5	2004	Girls	0.0%	3.2%	76.2%	20.6%	3.17	0.14
		Boys	2.6%	7.7%	81.4%	10.9%	3.03	
Grade 8	2004	Girls	0.0%	3.7%	60.6%	35.6%	3.32	0.23
		Boys	0.5%	9.3%	71.1%	19.1%	3.09	

3. Boys' underperformance in language arts areas hold true regardless whether one looks at the entire population or the population of students excluding IEP students.

Language Arts in Aggregate and Most Segments (Excluding Spelling) on the Iowa Test of Basic Skills

The Iowa Test of Basic Skills (ITBS) Language Arts section in District 39 is administered in Grades 5 through 7 including each of the following areas. In aggregate in Language Arts, girls substantially outperformed boys. These results are consistent over the entire student base in each of the grades and are consistent even if IEP students are excluded.

Table 22: Total Language Arts Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Scale Score			
7 th	282.71	271.38	11.33
6 th	255.85	246.84	9.01
5 th	241.86	230.99	10.87
Percentile			
7 th	82.31%	75.46%	6.85%
6 th	75.45%	68.85%	6.60%
5 th	78.01%	70.14%	7.87%

A review of the ITBS Total Language scale scores reveals roughly similar gaps in the November 2004 test. In 2004, the cumulative gap in standard scores across all three grades (5th grade gap + 6th grade gap + 7th grade gap) was 38 standard score points versus 31 standard points in 2005, driven by a much high gap in the 7th grade in 2004 (17.70 points) compared to 2005 (11.33 points).

A review of the percentile ratings for Wilmette students in the ITBS Language Arts section reveals that boys were far more likely to score in the bottom half of the test (19.7% of boys compared to 11.1% of girls in District 39), and girls are much more likely to score in the top 4% of the test (25.2% versus 16.6%, with an almost 2 to 1 ratio in which girls are likely to be in the top 1% compared to boys – 15.4% versus 7.8%).

Table 23: Total Language Arts: Percentage of District 39 Students Scoring in these Percentiles

Grade	Gender	1-25%	26-50%	51-75%	76-95%	96-98%	99%
7 th	Girls	1.5%	5.2%	19.6%	41.2%	12.4%	20.1%
	Boys	4.0%	13.1%	20.2%	38.9%	13.1%	10.6%
6 th	Girls	3.8%	12.4%	23.8%	38.9%	9.2%	11.9%
	Boys	5.5%	19.0%	27.4%	33.3%	6.3%	8.4%
5 th	Girls	3.6%	6.8%	24.0%	43.8%	7.8%	14.1%
	Boys	6.6%	9.7%	33.2%	42.3%	4.1%	4.1%
All	Girls	3.0%	8.1%	22.4%	41.3%	9.8%	15.4%
	Boys	5.4%	14.3%	26.9%	37.9%	7.8%	7.8%
	All	4.2%	11.3%	24.8%	39.5%	8.7%	11.4%

Table 24: Total Language Arts Portion of the ITBS – Excluding Students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Scale Score			
7 th	285.27	277.26	8.01
6 th	260.76	255.01	5.75
5 th	244.90	235.58	9.32
Percentile			
7 th	84.91%	79.83%	5.08%
6 th	79.15%	74.65%	4.50%
5 th	80.56%	74.98%	5.58%

In each specific test, girls outperformed boys in a statistically meaningful manner. This result held true even when students without IEPs were analyzed separately from the total student population.

Punctuation – The gender gaps in these language arts skills were observed for the entire student population as well as the more narrow student population which excludes those students with IEPs.

The test results were as follows:

Table 25: Punctuation Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	25.22	23.04	2.18
6 th	22.24	20.11	2.13
5 th	19.88	17.33	2.55
Scale Score			
7 th	293.28	277.53	15.73
6 th	260.13	244.15	15.98
5 th	243.53	226.16	17.37
National Percentile Rank			
7 th	82.56%	73.01%	9.55%
6 th	73.02%	63.29%	9.73%
5 th	74.10%	62.73%	11.37%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In all three grades, girls' scores exceeded boys with a high degree of statistical significance

Table 26: Punctuation Portion of the ITBS – Excluding Students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	25.75	24.03	1.72
6 th	22.99	21.33	1.66
5 th	20.35	18.29	2.06
Scale Score			
7 th	297.54	284.64	12.90
6 th	265.53	252.69	12.84
5 th	246.58	232.45	14.13
National Percentile Rank			
7 th	84.79%	77.21%	7.58%
6 th	76.45%	68.70%	7.75%
5 th	76.30%	67.26%	9.04%

Capitalization - The gender gaps in these language arts skills were observed for the entire student population as well as for the more narrow student population which excludes those students with IEPs.

The test results were as follows:

Table 27: Capitalization Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	23.48	21.82	1.66
6 th	20.32	19.21	1.11
5 th	19.71	18.21	1.50
Scale Score			
7 th	279.87	265.61	14.26
6 th	250.37	241.53	8.86
5 th	238.27	225.23	13.04
National Percentile Rank			
7 th	76.42%	68.24%	8.18%
6 th	68.54%	62.03%	6.51%
5 th	71.80%	64.41%	7.39%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In all three grades, girls' scores exceeded boys with a high degree of statistical significance

Table 28: Capitalization Portion of the ITBS – Excluding Students With IEPs– November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	24.07	22.74	1.33
6 th	20.95	20.18	0.77
5 th	20.11	18.63	1.48
Scale Score			
7 th	284.98	272.78	12.20
6 th	255.74	249.93	5.81
5 th	241.24	227.68	13.56
National Percentile Rank			
7 th	79.34%	72.66%	6.68%
6 th	72.11%	67.22%	4.89%
5 th	73.89%	66.68%	7.21%

Usage and Expression - The gender gaps in these language arts skills were observed for the entire student population as well as for the more narrow student population which excludes those students with IEPs.

The test results were as follows:

Table 29: Usage and Expression (U&E) Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	32.00	30.41	1.59
6 th	29.94	28.92	1.02
5 th	26.81	25.58	1.23
Scale Score			
7 th	291.07	280.62	10.45
6 th	266.30	259.78	6.52
5 th	248.46	240.31	8.15
National Percentile Rank			
7 th	81.66%	76.33%	5.33%
6 th	76.73%	72.93%	3.80%
5 th	77.72%	72.82%	4.90%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In all three grades, girls' scores exceeded boys with a high degree of statistical significance

Table 30: Usage and Expression (U&E) Portion of the ITBS – Excluding Students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	32.58	31.20	1.38
6 th	30.77	30.26	0.51
5 th	27.44	26.72	0.72
Scale Score			
7 th	295.26	285.48	9.78
6 th	271.51	267.91	3.60
5 th	252.24	246.49	5.75
National Percentile Rank			
7 th	83.74%	79.18%	4.56%
6 th	79.85%	77.66%	2.19%
5 th	80.34%	77.50%	2.84%

Mathematics

- 1. On average, there are modest statistically significant differences in aggregate mathematics test score results between girls and boys. Said another way, it appears that in aggregate, the historical gaps between boys' and girls' math test scores have been largely eliminated, although some remain, in District 39.**

ISAT – On average, there is little statistical difference in the math test scores on the ISAT between boys and girls in District 39.

Indeed, in the 3rd and 5th grade results, one gender scored slightly higher one year than the other gender, and then the other gender scored higher in the test the next year, but within a range in which the differences were not statistically meaningful.

Table 31: ISAT Mathematics Scores - District 39

Grade	Year	Gender	ISAT Split: 1 = Warning, 2= Below, 3= Meets, 4= Exceeds				Average	Difference
			1	2	3	4		
Grade 3	2005	Girls	0.0%	2.5%	37.6%	59.9%	3.57	-0.03
		Boys	0.5%	2.6%	32.6%	64.2%	3.60	
	2004	Girls	0.0%	0.6%	35.8%	63.8%	3.64	0.04
		Boys	0.5%	2.6%	32.6%	64.2%	3.60	
Grade 5	2005	Girls	0.0%	12.6%	59.0%	28.4%	3.16	0.05
		Boys	0.4%	12.0%	63.7%	23.9%	3.11	
	2004	Girls	0.0%	6.9%	64.6%	28.6%	3.22	-0.04
		Boys	0.0%	9.8%	54.3%	35.9%	3.26	
Grade 8	2005	Girls	0.0%	12.9%	30.7%	56.4%	3.44	0.05
		Boys	2.3%	12.2%	29.9%	55.6%	3.39	
	2004	Girls	0.5%	6.8%	36.3%	56.3%	3.48	0.08
		Boys	2.4%	8.7%	35.0%	53.9%	3.40	

ITBS Total Math – In the elementary school grades, there is some evidence that boys outperform girls, but in the middle school (5th and 6th grade) and junior high (7th grade), the differences are not statistically significant.

Table 32: Total Mathematics – ITBS – All District 39 Students

Test Date	Grade	Girls	Boys	Difference (Girls – Boys)
November 2005	7 th	263.51	265.20	-1.69
	6 th	248.85	251.88	-3.03
	5 th	230.43	231.49	-1.06
	4 th	210.63	215.90	-5.27
	3 rd	192.23	195.23	-3.00
November 2004	7 th	262.86	258.23	4.63
	6 th	253.24	254.98	-1.74
	5 th	228.44	230.25	-1.81
	4 th	210.76	212.97	-2.21
	3 rd	193.17	197.39	-4.22

CogAT - On average, for the November 2005 test, boys had slightly higher scores than girls on the quantitative portion of the CogAT, with the gap being largest for the raw scores (but not the scale scores) at the elementary school level. Interestingly, the gap in raw test scores is larger than the gap in the raw test scores for the Verbal test. Oddly, the gap for raw scores narrows at the higher grades but widens for the scale scores.

Table 33: CogAT Quantitative Scores (November 2005)

Grade	3rd	5 th	7 th
Raw Test Scores			
Girls	42.4	48.3	48.0
Boys	44.7	49.9	49.2
Difference	-2.3	-1.6	-1.2
Scale Scores			
Girls	178.4	205.8	218.1
Boys	181.6	209.2	223.0
Difference	-3.2	-3.4	-4.9

2. **Boys, however, are outperforming girls in a statistically significant manner in certain areas of math. Boys' out performance in select areas of mathematics holds true regardless whether one looks at the entire population or the population of students excluding IEP students.**

Concepts and Estimation Skills – The Iowa Test of Basic Skills (ITBS) has a section on Concepts and Estimation Skills. In the 3rd and 4th grade levels, there were statistically significant differences suggesting that boys had an advantage in these skills.

The results were as follows:

Table 34: Concepts and Estimation Skills Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	35.37	36.15	-0.78
6 th	32.95	33.90	-0.95
5 th	29.65	30.16	-0.51
4 th	26.38	28.35	-1.97
3 rd	20.52	21.55	-1.03
Scale Score			
7 th	265.39	269.83	-4.44
6 th	251.06	255.79	-4.73
5 th	234.11	236.70	-2.59
4 th	213.02	220.95	-7.93
3 rd	182.21	185.92	-3.71
National Percentile Rank			
7 th	80.34%	81.58%	-1.24%
6 th	80.50%	82.51%	-2.01%
5 th	81.29%	81.95%	-0.66%
4 th	78.76%	85.15%	-6.39%
3 rd	71.94%	76.17%	-4.23%

Similar results were observed in 2004. With the exception of 7th grade, boys outperformed girls on this portion of the ITBS. In grades 3 and 4, the boys results were

statistically significantly stronger (11.1 cumulative standard scale points difference in 2004 versus 11.6 cumulative standard scale score points in 2005 in 3rd and 4th grades) than girls' results.

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In this case, boys' scores exceeded girls' scores in all five grades, with strong statistically significant differences in all the grades.

Table 35: Concepts and Estimation Skills Portion of the ITBS – Excluding students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	36.25	37.48	-1.23
6 th	33.96	35.32	-1.36
5 th	30.37	31.45	-1.08
4 th	26.60	28.96	-2.36
3 rd	20.64	22.13	-1.49
Scale Score			
7 th	268.42	274.55	-6.13
6 th	254.61	261.84	-7.23
5 th	236.52	241.10	-4.58
4 th	213.61	221.79	-8.18
3 rd	182.44	188.48	-6.04
National Percentile Rank			
7 th	83.05%	85.64%	-2.59%
6 th	83.65%	86.61%	-2.96%
5 th	83.81%	86.40%	-2.59%
4 th	79.44%	87.40%	-7.96%
3 rd	72.59%	78.78%	-6.19%

Problem Solving and Data Interpretation - The Iowa Test of Basic Skills (ITBS) has a section on Problem Solving and Data Interpretation Skills. The differences were not as large as those for the Concepts and Estimation skills, although in four of five grades boys' scores on average were higher than girls' scores. The gap is only statistically significant in the 4th grade in 2005 (it was statistically significant in the 3rd grade in 2004). Nonetheless, in the 3rd and 4th grades, boys outperformed girls on the test each year.

The results were as follows:

**Table 36: Problem Solving and Data Interpretation (PD) Skills Portion of the ITBS
– All Students – November 2005**

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	22.87	23.23	-0.36
6 th	21.20	21.93	-0.73
5 th	19.22	19.04	0.18
4 th	17.50	18.26	-0.76
3 rd	16.67	16.95	-0.28
Scale Score			
7 th	272.54	275.44	-3.02
6 th	255.00	260.47	-5.47
5 th	241.20	240.64	0.54
4 th	220.22	225.88	-5.66
3 rd	199.70	202.36	-2.66
National Percentile Rank			
7 th	77.94%	78.79%	-0.85%
6 th	75.80%	79.31%	-3.51%
5 th	78.42%	77.10%	1.32%
4 th	77.00%	80.26%	-3.26%
3 rd	79.46%	80.07%	-0.61%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In this case, boys' scores exceeded girls' scores in all five grades, with strong statistically significant differences in three of the grades, 4th, 6th and 7th.

**Table 37: Problem Solving and Data Interpretation (PD) Skills Portion of the ITBS
– Excluding students with IEPs – November 2005**

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	23.47	24.18	-0.71
6 th	22.00	22.87	-0.87
5 th	19.72	20.07	-0.35
4 th	17.68	18.69	-1.01
3 rd	16.81	17.18	-0.37
Scale Score			
7 th	276.42	281.46	-5.04
6 th	260.11	267.53	-7.42
5 th	244.09	246.53	-2.44
4 th	221.35	228.40	-7.05
3 rd	200.39	203.50	-3.11
National Percentile Rank			
7 th	80.69%	83.11%	-2.42%
6 th	79.89%	83.87%	-3.98%

5th	80.89%	82.17%	-1.28%
4th	77.94%	82.58%	-4.64%
3rd	80.28%	81.41%	-1.31%

3. Girls and boys perform roughly equally well with boys on average on computational skills by the 5th grade and beyond. The Iowa Test of Basic Skills (ITBS) has a section on Computation Skills. In the 5th, 6th and 7th grade levels, there was little statistically significant difference in the performance of boys compared to girls on the computational skills in the 2005 test especially if the population is limited to non-IEP students. There were moderately statistically significant differences in the 3rd and 4th grade levels in computation suggesting that boys had modestly outperformed girls in these skills.

The results were as follows:

Table 38: Computation Skills Portion of the ITBS – All Students – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	18.82	18.47	0.35
6 th	20.61	20.28	0.33
5 th	18.40	18.46	-0.06
4 th	16.47	17.13	-0.66
3 rd	16.06	16.53	-0.47
Scale Score			
7 th	252.59	250.36	2.23
6 th	240.49	239.43	1.06
5 th	216.03	217.18	-1.15
4 th	198.50	200.55	-2.05
3 rd	184.88	186.51	-1.63
National Percentile Rank			
7th	68.84%	66.46%	2.38%
6th	70.80%	68.35%	2.45%
5th	65.73%	65.56%	0.17%
4th	66.09%	69.30%	-3.21%
3rd	74.68%	76.66%	-1.98%

The test results were also reviewed to look at the impact of excluding students designated with IEPs. In this case, again there was virtually no statically significant difference between boys and girls' scores above the 4th grade level, with moderately statistically significant differences in 3rd and 4th grade students. In these grades, statistically boys' performance on the computation skills area outperformed that of girls, but not to the same degree as on concepts and estimation.

Table 39: Computation Skills Portion of the ITBS – Excluding students with IEPs – November 2005

Grade	Girls	Boys	Difference (Girls – Boys)
Raw Score			
7 th	19.29	19.29	0.00
6 th	21.15	21.26	-0.11
5 th	18.85	18.90	-0.05
4 th	16.63	17.50	-0.87
3 rd	16.21	16.74	-0.53
Scale Score			
7 th	255.10	254.94	0.16
6 th	243.16	245.09	-1.93
5 th	217.63	218.64	-1.01
4 th	199.04	201.64	-2.60
3 rd	185.28	187.06	-1.78
National Percentile Rank			
7 th	71.23%	70.72%	0.51%
6 th	73.42%	72.96%	0.46%
5 th	67.82%	67.56%	0.26%
4 th	66.93%	71.13%	-4.20%
3 rd	75.63%	77.85%	-2.22%

Science

Boys outperformed girls on the Science Portion of the ISAT in District 39 in both 2005 and 2004 and in Grade 4 and Grade 7 but the results are only statistically significant in Grade 4.

The results in 4th grade science are statistically significant, especially in March 2005, in which the boys averaged a 3.42 compared to girls averaging a 3.29. The gap was not as large in March 2004, in which the boys averaged a 3.41 and the girls averaged a 3.33.

The results in 7th grade are not statistically significant in any given year, but in both cases the boys did somewhat outperform the girls on average. In March 2005, 7th grade boys averaged 3.55 compared to 3.48 for girls. In March 2004, 7th grade boys averaged 3.55 compared to 3.49 for girls.

Table 40: Science Portion of the ISAT: Grade 4: March 2005 and March 2004

Levels		March 2005				March 2004			
		1	2	3	4	1	2	3	4
Male	District	0.5	4.1	48.7	46.7	0.9	2.1	51.7	45.3
	Benchmark Difference								
Female	District	0.0	7.4	55.8	36.8	1.2	4.7	54.7	39.5
	Benchmark Difference								
Male vs. Female	District	0.5	-3.3	-7.1	9.9	-0.3	-2.6	-3.0	5.8
	Benchmark								
All	District	0.3	5.7	52.2	41.8	1.0	3.2	53.1	42.8
	Benchmark								
IEP	District	2.0	14.3	63.3	20.4	0.0	10.9	68.8	20.3
	Benchmark								
Non-IEP	District	0.0	4.5	50.6	44.9	1.2	1.7	50.1	46.9
	Benchmark								

Table 41: Science Portion of the ISAT: Grade 7: March 2005 and March 2004

Levels		March 2005				March 2004			
		1	2	3	4	1	2	3	4
Male	District	0.5	3.9	36.2	59.4	1.0	2.5	36.9	59.6
	Benchmark Difference								
Female	District	1.5	2.0	42.9	53.5	0.0	2.8	44.9	52.2
	Benchmark Difference								
Male vs. Female	District	1.0	1.9	-6.7	5.9	1.0	-0.3	-8.0	7.4
	Benchmark								
All	District	1.0	3.0	39.5	56.5	0.5	2.6	40.7	56.2
	Benchmark								
IEP	District	6.1	9.1	60.6	24.2	3.1	7.7	61.5	27.7
	Benchmark								
Non-IEP	District	0.0	1.8	35.4	62.8	0.0	1.6	36.4	62.0
	Benchmark								

Social Science

The results of the Social Science portion of the ISAT (which was not a statewide test in 2005 but was in 2004) do not suggest a statistically significant difference between boys and girls performance on the test. At the 4th grade level, boys averaged a 3.23 compared to girls average of 3.19 on the March 2004 test. At the 7th grade level, boys averaged a 3.25 compared to girls averaging 3.20. IEP students averaged a 2.88 at the 4th grade level (compared to 3.27 for all non-IEP students) and averaged a 2.71 at the 7th grade level (compared to 3.33 for all non-IEP students).

Table 42: Social Science Portion of the ISAT: Grade 4: March 2004

Levels		March 2004			
		1	2	3	4
Male	District	0.8	8.9	57.2	33.1
	Benchmark Difference				
Female	District	0.6	8.6	62.1	28.7
	Benchmark Difference				
Male vs. Female	District	0.2	0.3	-4.9	4.4
	Benchmark				
All	District	0.7	8.8	59.4	31.1
	Benchmark				
IEP	District	1.5	22.1	63.2	13.2
	Benchmark				
Non-IEP	District	0.6	6.1	58.6	34.7
	Benchmark				

Table 43: Social Science Portion of the ISAT: Grade 7: March 2004

Levels		March 2004			
		1	2	3	4
Male	District	0.0	15.6	43.9	40.5
	Benchmark Difference				
Female	District	0.0	11.8	56.2	32.0
	Benchmark Difference				
Male vs. Female	District	0.0	3.8	-12.3	8.5
	Benchmark				
All	District	0.0	13.8	49.6	36.6
	Benchmark				
IEP	District	0.0	40.9	47.0	12.1
	Benchmark				
Non-IEP	District	0.0	8.2	50.2	41.6
	Benchmark				

Cross-Subject

A higher percentage of boys than girls score in the highest percentiles in mathematics and in science tests. This is not true in reading, language arts, or social studies test scores.

Table 44: Percentage of District 39 Students Scoring in these Percentiles - Mathematics

	1%-25%	26%-50%	51%-75%	76%-95%	96%-98%	99%
Girls	2.8%	9.8%	22.7%	39.2%	10.4%	15.1%
Boys	3.6%	8.1%	17.5%	37.5%	11.2%	22.1%
All	3.2%	8.9%	20.0%	38.3%	10.8%	18.8%

Table 45: Percentage of District 39 Students Scoring in these Percentiles - Reading

	1%-25%	26%-50%	51%-75%	76%-95%	96%-98%	99%
Girls	1.9%	6.2%	18.7%	42.2%	13.4%	17.5%
Boys	4.0%	8.2%	16.9%	43.9%	11.9%	15.0%
All	3.0%	7.2%	17.8%	43.1%	12.6%	16.2%

Table 46: Percentage of District 39 Students Scoring in these Percentiles – Language Arts

	1%-25%	26%-50%	51%-75%	76%-95%	96%-98%	99%
Girls	3.0%	8.1%	22.4%	41.3%	9.8%	15.4%
Boys	5.4%	14.3%	26.9%	37.9%	7.8%	7.8%
All	4.2%	11.3%	24.8%	39.5%	8.7%	11.4%

Table 47: ISAT Science Scores Grade 7 District 39 (2004)

ISAT Split	1	2	3	4	Average	Difference
Girls	0.0%	2.8%	43.9%	40.5%	3.49	-0.06
Boys	1.0%	2.5%	36.9%	59.6%	3.55	

Table 48: ISAT Social Studies Scores Grade 7 District 39 (2004)

ISAT Split	1	2	3	4	Average	Difference
Girls	0.0%	11.8%	56.2%	32.0%	3.20	-0.05
Boys	0.5%	15.6%	43.9%	40.5%	3.25	

PART III – Academic Development and Placement

1. In District 39, the vast majority of Students with an Individualized Education Plan (IEP) are male.

As of September 2005, there were 523 students in District 39 with IEPs. The gender split of these students was: 71% of the IEP students for District 39 were male, while 29% of the IEP students were female. Please note that the number of students with IEPs were higher in grades 5-8 (4 grades) than in grades K-4 (5 grades). Grade 4 seemed to be the year that the number of students in IEPs was dramatically higher than in the earlier elementary school grades.

The distribution was as follows:

Table 49: IEP Student Distribution

Grade	# Male	# Female	% Male	% Female
Pre – K	50	17	75%	25%
Grades K – 2	69	33	68%	32%
Grades 3 - 4	70	18	80%	20%
Grades 5 – 6	97	41	70%	30%
Grades 7 – 8	85	40	68%	32%
Total	371	152	71%	29%

As of March 2006, among K-8 IEP students, there were just over 70% male (339 students) and just under 30% female (142 students). 202 of these students have an educational designation of Specific Learning Disabilities, while 160 have an educational designation of Speech Language Impaired.

2. IEP students do not do as well as their classmates on average on standardized tests, either the ISAT or the ITBS.

One can see this by going to the test score sections and comparing the ITBS all student results to those of the non-IEP students for the same grade and gender. The average percentile scores for all students taking the ITBS in November 2005 is described below in Table 50. In Total Reading, non-IEP students averaged 23 percentage points higher than IEP students. In total language arts, non-IEP students averaged 32.5 percentage points higher than IEP students. In total math, non-IEP students averaged 25 percentage points higher than IEP students. Please see Table 51 for an additional ISAT example for Grade 7 Science and Social Studies.

3. Male students with IEPs, especially at the lower grades, tend to outperform their female classmates with IEPs on the ITBS.

In both total reading and total math, male IEP students outperform female IEP students, while female IEP students outperform male IEP students in total language arts.

Table 50: Average ITBS Percentile Scores for District 39 Students – Grades 3-7 – November 2005

Test	Non-IEP	IEP		
		Total	Male	Female
Vocabulary	82.0	59.4	61.4	54.8
Reading Comprehension	82.0	57.1	58.6	53.8
Total Reading	82.0	58.7	60.4	54.8
Spelling	77.8	48.9	48.3	50.2
Capitalization	72.0	43.6	43.1	44.5
Punctuation	75.1	44.4	40.8	51.1
Usage & Expression	79.7	52.7	52.4	53.3
Total Language Arts	79.0	46.5	44.6	49.9
Concepts	83.5	61.1	64.0	55.0
Problem Design	81.2	57.0	60.1	50.3
Computation	72.3	51.7	57.9	46.9
Total Math	82.2	57.3	60.3	50.9

Table 51: ISAT Science Test Results: IEP Students Compared to Rest of Student Population – Test Date March 2004, Grade 7

		Science				Social Science			
		1	2	3	4	1	2	3	4
All	District	0.5	2.6	40.7	56.2	0.0	13.8	49.6	36.6
	Benchmark								
IEP	District	3.1	7.7	61.5	27.7	0.0	40.9	47.0	12.1
	Benchmark								
Non-IEP	District	0.0	1.6	36.4	62.0	0.0	8.2	50.2	41.6
	Benchmark								

4. There does not appear to be a statistically significant difference in placement of boys and girls in the Early Reading Intervention Program.

These are students who do not have IEPs but who receive instruction in reading from four Reading Intervention teachers and three paraprofessionals, along with some Learning Behavior Specialists.

Table 52: Percentage of Boys/Girls in Early Reading Intervention Program (Percent of total Population)

Grade	2004-2005		2005-2006	
	Girls	Boys	Girls	Boys
K	11%	12%	4%	6%
1	14%	14%	8%	11%
2	10%	11%	7%	5%
3	NA	NA	3%	5%
4	NA	NA	4%	3%

Data for 2004-2005 limited to K-2 grades.

5. The Wilmette District 39 Schools continue to identify a higher percentage of male students as gifted and talented in the 3rd and 4th grade than female students.

- a. At the third and fourth grade levels, the Wilmette Public Schools identify gifted and talented students. The Committee has data on the identification slotting by gender from 1999-2000 to the present.
- b. Since 1999-2000, on average, 58% of the third graders identified in the gifted and talented pool have been boys (42% girls), while 57% of the fourth graders identified in the gifted and talented pool have been boys (43% girls).
- c. Among gifted students, who have been separately classified since 2001-2002 in the third grade (five school years) and 2002-2003 in the fourth grade, girls represent only 25% of the third graders identified (9 out of 36) and only 32.5% of the fourth graders identified (13 out of 40).
- d. In recent years, the results become a bit more difficult to interpret. The third grade combined number of gifted and talented students for the last 3 years has been 46 boys and 43 girls – not a statistically significant total (although the number of number of gifted students remains at 70% male). The fourth grade combined number of gifted and talented students for the last 3 years has been 78 boys and 51 girls, more skewed than in the prior four years (which were 76 boys and 67 girls).

6. There is some evidence at the Middle School and Junior High that Advanced Class Placement tends to be moderately weighted toward boys. It varies, however, by subject and program. These programs include:

- a. At Highcrest, in 6th grade for 2005-2006, 63% of the students in accelerated math are boys in the grade and 61% of the students identified for language arts are boys, compared to 56% of the total students.
- b. In the Language Arts program for grades 6-8, the number of students identified as highly able for 2005-06 are 78 boys (54%) and 66 girls (46%).

- c. The placements in Honors Math at the Junior High are very close by gender (52 total boys between 7th and 8th grade and 56 total girls between 7th and 8th grade). Interestingly, the 7th grade is slightly more heavily boys (between 55-60%), while the 8th grade is more heavily girls (just over 55%).
 - d. The New Trier Math placements at the Junior High are much more heavily boys, with 27 out of 41 placements being boys between the two grades (66%)
- 7. 8th Grade District 39 Students take a Placement Test for New Trier High School.** Historically, District 39 has not had access to the results of this test, and the data on performance by gender has not been available. Members of the subcommittee along with Superintendent McGee are attempting to gain access to this information. This would provide important insights into whether the gender differences identified elsewhere in this document manifest themselves in high school placement testing.
- 8. District 39 also lacks data on the Actual Placement in 9th Grade of its students at New Trier.**

PART IV – Behavior Issues/Discipline

- 1. Boys are overwhelmingly the disciplinary cases that principals must address in our schools. This is true from elementary through Junior High grade levels in District 39.**
 - a. At the Junior High School, in 2004-2005 and through the first semester of 2005-2006, males had 104 office referrals (80%), compared to girls who had 21 office referrals (20%).
 - b. At McKenzie School, office referral incidents through January 15, 2006 for the 2005-2006 school year were 22 boy students (88%) and 3 girl students (12%).
 - c. At Central School, the rough estimate for the first half of the 2005-2006 school year were 25 incidents involving boys (92%) and 2 incidents involving girls (8%).
- 2. Boys are the overwhelming majority of suspensions in District 39**
 - a. At the Junior High School, in 2004-2005 and through the first semester of 2005-2006, boys had 21 suspensions (95%) and girls had 1 suspension (5%).

PART V - Teacher and Administrator Perceptions

1. **Teacher Survey** - With the support of the District and the Wilmette Education Association, the Committee undertook a quantitative study (with room for teachers to write qualitative answers) on February 17, 2006. The survey had 30 questions that teachers were asked to indicate whether they agreed or disagreed on specific items and then were invited to write specific comments on each of the questions as well as the survey as a whole. 272 professionals in District 39 completed the survey, although not all professionals answered all questions. Below are the categories of the survey questions (detailed questions and results can be found in the appendix; the sub-committee also has verbatim reactions to teacher questions and results segmented by a series of criteria):
 - a. Teacher Knowledge and Professional Development related to Gender Based Performance
 - b. Teacher Perceptions about Student Behaviors in the Classroom
 - c. Teacher Perceptions about Student Social Behaviors and their impacts
 - d. Teacher Perceptions about Student Academic Performance
 - e. Teacher Behaviors/Classroom Dynamics
 - f. Teacher Perceptions about Academic Content and Materials
2. **Learning from the Teacher Survey**
 - a. **There is a disconnect between the quantitative results about the existence of a grade gap and teachers' perceptions about academic performance.**
 - 85% of teachers indicated that they had not seen one gender academically outperform the other in their classroom
 - Only three teachers out of the 270 filling out the survey explicitly commented that they thought girls were outperforming boys
 - yet a girl is much more likely than a boy in District 39 to earn an A in the classroom (in 5th and 6th grade for instance, 30-35% more likely than a boy)
 - and the gap in performance has grown over time.
 - b. **There is a general perception that boys are less well organized, more likely to leave things behind, more likely to do the minimum (particularly in writing assignments) and more of a behavioral challenge (including being disruptive) than girls**
 - Do we need to raise the minimums that we expect in areas in which boys are underperforming?
 - Teacher comments hypothesized that the better organizational skills of girls may be due to cultural factors.
 - Among almost a third of the teachers, there is a perception that boys are more tired than girls, and some teachers have expressed the concern that the frequency of this is going up. A number of teachers speculated that the lack of sufficient sleep is due to increasing student involvement in outside activities.

- c. **Many teachers see girls as better prepared and less likely to be lost at the start of the academic year**
- d. **There is a general sense that boys and girls are equally capable**, as evidenced in the 94% of teachers who see girls as able in math/science as boys and 95% who reject the statement that boys advance farther in the academic year than girls. When it comes to underperformance, 57% of teachers believe boys and girls underachieve academically in equal numbers.
- e. **There is a general perception that the curriculum does not engage one gender over the other.** To the extent teachers observed bias, the comments on bias went in both directions. Many reflected the belief that it is important to have a wide variety of materials to appeal to diverse interests, not the interests of a particular gender. **There was a sense, however, that boys are more needy of specific materials (*boys have a narrower range of interests?*) to hold their interest than are girls.**
- f. **There is a general concern about the impact of peer dynamics on academic performance.** Teachers see an impact on both genders, however girls and boys respond to peer dynamics differently, e.g., psychologically versus behaviorally. This applies to girls to a more significant degree than to boys.
- g. **There are lukewarm feelings among teachers to the idea of all-girl and all-boy teams and learning environments.**
 - o A subset of teachers commented that limiting groupings by gender to specific subject areas might be effective. Suggested subjects were reading, PE, and reproduction unit.
 - o It was felt by some teachers that this would not be of value at the elementary level but might be worthwhile in upper grades.
- h. **A large percentage of teachers see significant opportunities for learning about gender differences and incorporating this learning in the classroom.**
 - o Only about a third of teachers indicated they were knowledgeable about recent gender oriented research
 - o 60% indicated that they do not have enough information and/or resources to modify for gender specific instruction
 - o But 63% of teachers indicated that they have adjusted to how they teach in response to what they know about gender differences
 - o Teachers commented that they had discussed gender issues with their colleagues regarding reading, incorporating movement into the classroom, and professional development
 - o The comments suggest a range of enthusiasm for this training. Some teachers simply view this topic as a fad.
- i. It is important to note that many teachers took the time to comment that in their careers they had witnessed both sides of the Agree/Disagree questions being asked. Thus, their feelings about the topics being probed really depended on the individual student as well as the gender and personality makeup of a particular classroom.

3. Principals and Administrative Council Perceptions and Findings

On April 18, 2006, a subset of the Gender Differences sub-committee met with the Administrative Council to explore their thoughts related to Gender Differences in student performance in District 39.

The representatives from the committee attempted to focus the conversation on three key topics:

- a. Developing a Baseline Understanding of the Issue
 - Are there meaningful differences in student academic performance in District 39 based upon gender?
 - Are there social, emotional and behavioral differences in students in District 39 based upon gender?
 - How big an issue is this compared to other issues facing the district?
- b. Developing an Understanding about Factors that may be contributing to differences in Student Performance by Gender
- c. Developing an Understanding about Opportunities to improve student performance where there is underperformance by gender without harming the performance in the other gender

4. Key Learnings from Administrative Council Meeting

Key learnings from the Administrative Council Meeting were:

- a. The Gender performance issue is not an easy one. There was a general sense that the system may be teaching more for how girls learn than for how boys learn but that sense was not terribly well formed in the minds of most members of the Administrative Council.
- b. We do not want to send signals that one gender is more able than the other, and we should be careful about the messages we are sending to our students and our community.
- c. There is a need for teacher and administrator training to become smarter on these gender differences issues including brain research. The more we can equip teachers to deal with differences in how students learn the better off all of our students will be.
- d. We have to make sure that any changes do not shortchange our students. The result of this should not be to take a step back in areas in which we have made improvements.
- e. Behavioral issues are more likely to be identified earlier with boys than with girls. Our screening process causes boys to be noticed earlier for IEP issues as well.
- f. District 39 has two efforts underway on this issue – one at Central School on a small scale, voluntary effort and the other at the Junior High where this topic is part of the 2005-2006 school improvement plan. We should learn from both of those efforts.

PART VI - Classroom Teacher Composition

1. **The overwhelming majority of classroom teachers in District 39 are female.** In 2005-2006, approximately 88% of classroom teachers are female.

Table 53: Mix of District 39 Classroom Teachers by Gender

2005-2006	Female	Male
Kindergarten	12	0
Grade 1	18	0
Grade 2	19	0
Grade 3	18	1
Grade 4	19	2
Grade 5	14	2
Grade 6	17	1
Grade 7	11	4
Grade 8	9	8
Total	137	18

2. **The vast majority of classroom teachers below the Junior High School grades are female.** 96-97% of the classroom teachers at the elementary school grades are female. Over 90% of the Middle School classroom teachers are female. 62% of the classroom teachers at the Junior High School are female.

Table 54: Mix of District 39 Classroom Teachers by Gender

2005-2006	Female	Male
K-4	86	3
Grades 5-6	31	3
Grades 7-8	20	12
Total	137	18

3. **The percentage of classroom teachers that are female has increased from 85% in 2002-2003 to 88% in 2005-2006, while the percentage of male teachers has decreased from 15% to 12% during this same period.**

Table 55: Mix of District 39 Classroom Teachers by Gender

Year	Female	Male	% Female	% Male
2005-2006	137	18	88%	12%
2004-2005	130	24	84%	16%
2003-2004	133	22	86%	14%
2002-2003	129	22	85%	15%

4. **The percentage of male teachers offered positions by the district is below the percentage of male applicants applying and male applicants that are interviewed.** (See Section Six, Appendix IV, Hiring Data)

- a. The applicant pool for Elementary School (K-3) positions for District 39 has been 80% female and 20% male
 - b. The applicant pool for Middle School (5-8) positions for District 39 has been 46% female and 54% male
 - c. The total applicant pool was 77% female and 23% male
 - d. Yet, out of 367 interviews in 2005, 90% were with female candidates
 - e. And of the 64 teachers individuals hired in 2005, 95% were female
5. **Recent analysis suggests that the evaluation criteria used for selecting teachers may reinforce these gender disparities.** The district led by Dr. Alice Reardon, interviewed strong male teachers and compared their answers to a series of evaluation criteria compared to female teachers. The results suggest that male teachers think differently about how to organize and manage their classroom and have different motivations and teaching styles than their female counterparts. There is a recognition that the evaluation criteria in the district needs to reflect these insights, and Dr. Reardon has moved to incorporate these changes in the interviewing process.

PART VII - Information Challenges

1. **The sub-committee struggled with gathering data to compare results by gender.** In District 39, there is not a single central repository for data on all tests or grades. Much of the information is located in individual schools that vary widely in the types of databases on which information resides, the length of time that the information is kept, and the quality of the information. We were not able, for instance, to get data for 4th grade grades easily. That data is housed by school, and often not in the same format.
2. **The sub-committee struggled with gathering data over time.** There is a lack of a longitudinal database. . In a number of cases, we have not been able to locate historical data, so our data has been limited to a snapshot or a short duration. The district has not proactively sought to build a common database in which information can be tracked over time and results compared over time. There are a myriad of applications for such a database; gender difference issues would simply be one of those applications
3. **The sub-committee struggled because certain data is not classified by gender, and there was a lack of effective access to third party managed data.** In some cases, the district turns over the management of data to a third party vendor, but that vendor may not store the information by gender, for instance. An example of this is internal District 39 reading proficiency testing at the elementary school grades.

PART VIII - Comparison of District 39 Findings with External Benchmarks

Table 56. Student Enrollment by Grade - Edina

	Female		Male		Total
Pre K	44	35%	83	65%	127
K	224	50%	227	50%	451
Grade 1	238	48%	258	52%	496
Grade 2	278	51%	262	49%	540
Grade 3	275	48%	296	52%	571
Grade 4	281	51%	269	49%	550
Grade 5	259	45%	312	55%	571
Grade 6	260	49%	270	51%	530
Grade 7	286	51%	270	49%	556
Grade 8	263	50%	263	50%	526

Table 57. Student Enrollment by Grade - Wilmette

Grade	Female		Male		Total
-2	12	26.7%	33	73.3%	45
-1	10	26.3%	28	73.7%	38
K	173	47.9%	188	52.1%	361
1	189	51.1%	181	48.9%	370
2	212	54.4%	178	45.6%	390
3	202	51.1%	193	48.9%	395
4	210	49.0%	219	51.0%	429
5	194	48.7%	204	51.3%	398
6	190	44.0%	242	56.0%	432
7	196	49.4%	201	50.6%	397
8	202	48.9%	211	51.1%	413
Grand Total	1790	48.8%	1878	51.2%	3668

The total enrollment of District 39 is currently just under 3700 students with both genders equally represented. District 39 and Edina School District similar represent communities that can be categorized as upper middle class to upper class. Based on the 2000 Census, the median family income in District 39 and in Edina is \$122,515 and \$93,496 respectively. The programs that these two districts offer are similar as well. One major difference between the two is that Edina is a unit district serving kids from Pre-Kindergarten through twelfth grade. This fact has allowed Edina to collect more complete data and has eased policy and procedural changes.

Table 58. Gifted Education Enrollment - Edina

Grade	Female		Male		Total
	Number	Percent	Number	Percent	Number
3	29	56%	23	44%	52
4	23	39%	36	61%	59
5	39	41%	57	59%	96
6	50	50%	50	50%	100
7	49	48%	54	52%	103
8	50	45%	60	55%	110

Table 59. Gifted Education Enrollment - Wilmette

Grade	Female		Male		Total
4	15	39.5%	23	60.5%	38
5	23	46.9%	26	53.1%	49
6	20	38.5%	32	61.5%	52
7	21	51.2%	20	48.8%	41
8	20	41.7%	28	58.3%	48
Grand Total	99	43.4%	129	56.6%	228

Major differences in Tables 58 and 59 show that Edina begins identifying students as gifted and talented in the third grad while District 39 makes these identifications in fourth. In both districts males represent a greater proportion of gifted and talented students throughout the grade levels. As second interesting phenomena of the above data is that it seems that in District 39 fewer students are identified as gifted and talented after the initial identification in fourth grade. The Edina numbers tell a different story showing that as students progress through the grades the identification process continues.

Table 60. Special Education Enrollment - Edina

	Female		Male		Total
	Number	Percent	Number	Percent	
K	13	28%	34	72%	47
1	15	28%	39	72%	54
2	15	23%	49	77%	64
3	18	21%	68	79%	86
4	15	22%	52	78%	67
5	19	30%	45	70%	64
6	14	22%	51	78%	65
7	18	25%	55	75%	73
8	15	25%	45	75%	60

Table 61. Special Education Enrollment - Wilmette

Grade	Female		Male		Total
-2	4	36.4%	7	63.6%	11
-1	8	28.6%	20	71.4%	28
K	9	32.1%	19	67.9%	28
1	11	33.3%	22	66.7%	33
2	9	25.7%	26	74.3%	35
3	8	24.2%	25	75.8%	33
4	11	20.0%	44	80.0%	55
5	14	26.9%	38	73.1%	52
6	25	36.2%	44	63.8%	69
7	21	44.7%	26	55.3%	47
8	17	25.8%	49	74.2%	66
Grand Total	137	30.0%	320	70.0%	457

Table 62. Special Education Enrollment – Glencoe

Grade	Female		Male		Total
K	1	9%	10	91%	11
1	8	38%	13	62%	21
2	10	29%	24	71%	34
3	7	23%	23	77%	30
4	8	30%	19	70%	27
5	8	29%	20	71%	28
6	10	31%	22	69%	32
7	14	36%	25	64%	39
8	11	35%	20	65%	31
Grand Total	77	30%	176	70%	253

Table 63. Special Education Enrollment – Avoca

Grade	Female		Male		Total
	Number	Percent	Number	Percent	
K	1	33%	2	67%	3
1	4	80%	1	20%	5
2	4	57%	3	43%	7
3	0	0%	3	100%	3
4	1	17%	5	83%	6
5	2	22%	7	78%	9
6	2	40%	3	60%	5
7	2	29%	5	71%	7
8	0	0%	5	100%	5
Grand Total	16	32%	34	68%	50

Based on Tables 60-63, boys make up about 75% of students who are receiving special education services in all four of the above districts.

Table 64. Top Class Rank - Edina

	Female		Male		Total
	Number	Percent	Number	Percent	
Top Class Rank					
Grade 6	118	74%	42	26%	160
Grade 7	83	70%	36	30%	119
Grade 8	52	66%	27	34%	79

Table 65. Top 10% Class Rank - Wilmette

Grade	Female		Male		Total
	Number	Percent	Number	Percent	
5	30	90.9	3	9.1	33
6	34	77.3	10	22.7	44
7	30	73.2	11	26.8	31
8	36	73.5	13	26.5	49
Grand Total	130	82.8	37	18.2	157

The class rank data reflects the seriousness of the issue. In both of these districts girls make up a significantly larger proportion of students receiving the highest grades.

SECTION FIVE – RECOMMENDATIONS

Our strongest recommendation is for a paradigm shift in considering gender based differences in learning, development and performance in our district. Everything else evolves from that assumption. The CRC Gender Differences Committee believes that through understanding the data and other research there are opportunities to improve the academic performance of students of both genders in District 39.

This committee has worked with District 39 to collect a baseline of information that will allow the district to track and compare differences in performance by gender. The following recommendations describe developing a database to further understand differences.

We have also developed classroom and administrative recommendations based on the significant differences found in D39, particularly in the upper grades (5-8).

Finally, we have read an extensive literature review of gender differences in learning – both in the popular press and in books by educators and developmental psychologists. These books and articles are listed in the Bibliography/resources appendix. Based on that research, we have integrated trends in the literature into our recommendations, though we did not directly assess all of these issues in D39.

PART I - Mission Statement

Adopt a statement within the District 39 educational philosophy that suggests how boys and girls learn differently, and that our educational practice reflects this belief.

PART II - Database

Starting the summer of 2006, build a database for D39 to track over time educational performance and test score results by gender and other criteria as determined by the District. The goal is to be able to track student performance and other key data trends and to ultimately establish a link at the K-8 level and high school in order to follow our students through the 12th grade. Consider capturing the following information:

Structure of District Database

- 1. Build a single central repository for data on all tests or grades.** Much of the information is located in individual schools that vary widely in the types of databases on which information resides, the length of time that the information is kept, and the quality of the information.
- 2. Build a longitudinal database.** Proactively build a common database in which information can be tracked over time and results compared over time. There are a myriad of applications for such a database; gender difference issues would simply be one of those applications.
- 3. Structured management of third party managed data.** In some cases, the district turns over the management of data to a third party vendor, but that vendor may not store the information by gender, for instance. Structuring data to fit the needs of D39 would allow more effective access.

Information Compiled:

1. Academic classroom performance (including classroom grades) by gender, for each major subject by grade level – Obtain meaningful data on academic performance beyond the categories in this report for grades K-4.
2. Academic test performance by gender, by subject by grade including state tests and standardized tests. Local assessments would include Curriculum Based Measurements (CBMs) at lower grades.
3. Identification data by gender for gifted and talented and other similar data in the district, including advanced math and differentiated language arts services in the higher grades.
4. Data on IEPs by gender and grade (e.g., the data may cause future work to focus on certain disabilities like Learning Disability or Speech Language Impaired over Physical Impairment or Traumatic Brain Injury).
5. Analyze IEPs and other data that may highlight some of the emotional/behavioral issues between gender, and process issues in learning related to this (i.e. emotional disinvestment in school may equal irregular homework) .One recent study finds that males account for 70% of all alienated students (US News, 2/22/99) – investigate this in D39.
6. Analyze IEPs (emotional/behavioral) and discipline referral patterns.
7. Adjusted academic and test performance to address the impact of IEPs on these results.
8. Data on social behavior issues by gender, including but not limited to, office visits, suspensions, expulsions, reported incidents, detentions, etc.
9. Data comparing our performance to other benchmark districts.
10. Data on Reading Intervention students by gender and grade.
11. Seek data on placement and testing of 8th grade District 39 students as they exit the district and enter New Trier and, ideally, performance data for District 39 students at the high school level.
12. Breakdown and analyze writing differences, as reflected in test scores and classroom, to target specific skill sets or process issues, (i.e. what does the ISAT writing score reflect vs. Iowa's).
13. Utilize process and local assessments, with online and progress report rubrics. Develop online rubric for process of writing that teachers already do. Address gap in writing and math by looking at the process as well as the content, tie classroom work in process with progress report rubric for process.
14. Track mix of male and female teachers and educators over time by grade in District 39.

PART III - Administrative/Policy Actions

1. Teacher Hiring – Identify and implement hiring policies that promote the hiring of excellent teachers of all genders, rather than policies and practices that tend to disqualify or fail to select teachers of either gender at any grade.
 - Understand differences in styles of teachers by gender, especially styles of outstanding teachers.
 - Encourage hiring of teachers of all genders, to encourage strong role models for all District 39 students, across all grades and subject areas.
 - Collect data on the hiring process – gender and credentials of candidates by grade level for applicants, those interviewed, those offered positions and those hired, over time. Collect this data both for classroom teachers and other educators/professionals working in district 39 schools.
2. School Improvement Process – Take steps to integrate gender based learning and performance actions into the regular planning processes of District 39.
 - Each school’s School Improvement Plan (SIP) should incorporate gender based performance and learning objectives, which seek to raise opportunities for each gender.
 - Compile hard data by school each year to measure progress.
 - Identify and appoint an educator responsible at District level for communication and coordination of gender issue goals as expressed in school improvement plans and linked goals across the District (elementary school goals linked together, linked to the Middle School goals and linked to the Junior High School goals).
3. Provide professional development opportunities for educators, parents and administrators in District 39 to encourage awareness of and support for the similarities and differences between genders.
 - Provide training of innovative teaching techniques and methodologies that reflect current research on gender differences in social behaviors, learning, emotional development, physical development, and intellectual interests.
 - Encourage creativity among teachers (see classroom interventions).
 - Allocate training time for staff to explore classroom practices’ impact on gender differences in performance.
 - Understand socialization behaviors in classrooms and the impact on academic performance.
4. Seek further anecdotal data from veteran teachers – e.g., girls’ process dominance in honors math but under representation, ways to encourage girls with certain mathematics techniques at the early elementary school level.
5. Seek to collaborate with New Trier on a K-12 integrated study.
6. Conduct a survey or focus group of special education staff, e.g., Learning Behavior Specialists, Social Workers, to gather information on their gender-based experiences. Develop a list of successful differentiation practices.
7. Share research, District 39 programs, etc. with parents through newsletters, presentations and other forums of discussion to educate about gender differences.

8. Continue to stay abreast of further research regarding gender differences in learning.
9. Seek more specific input from other benchmark school districts that have sought to understand and address differences in gender performance and compare data.
10. Continue this CRC team into the 2006-2007 school year to refine findings and recommendations, including greater high school outcome data.
11. Seek parent and student input regarding:
 - Medications
 - Extra-curricular activities
 - Video games, television, computer
 - Reading at home
 - Contact with school
 - Presence at home (e.g., single parent or travel father or mother)
 - Discipline
12. Study proportion of gender in a classroom as they relate to gender differences in learning and effect of class size.

PART IV - Classroom Interventions

1. Explore innovative classroom arrangements designed to support gender differences to learning and to increase classroom participation such as:
 - Use of manipulatives – Identify and provide materials for students that reflect gender-specific interests. Study the physical environment of early education classrooms to see how they support needs of both genders. This may include, but is not limited to wooden unit blocks, art materials, science equipment etc.
 - Personalize classrooms and desks
 - Put high energy to work and toward academic focus
 - Movement related learning
 - Space
 - Multi-sensory strategies
 - New approaches to real or perceived discipline problems
 - Call on boys and girls equally
 - Constant feedback and encouragement
 - Consider expanding single-sex circles and explore, on trial basis, separate-sex homerooms (and/or other forms of mentoring programs) and classes.
 - Identify materials that would provide more reading materials to boys that they are more likely to want to read, i.e. action-oriented, non-fiction, heroes similar to demographic of boy-readers.
 - Use a combination of team building and competitive activities to encourage student involvement. Consider additional competitive activity in language arts skills as a way to engage boys to improve their capabilities in these areas:

punctuation, capitalization, usage & expression, writing, reading comprehension, vocabulary).

2. Focus on specifically working with boys in the classroom to address early gender gap in writing skills, focus on working with girls in the classroom to address early gender gap in math skills (i.e. as seen on CoGAT).
3. Create an environment to focus on underperforming groups at the elementary level (boys and girls) – as identified by differences in test performance and GPA; create a rubric to specifically target this at-risk group.