

USA TODAY
December 3, 2004

Pay Closer Attention: Boys Are Struggling Academically

BusinessWeek
May 26, 2003

The New Gender Gap: From Kindergarten to Grad School Boys are Becoming the Second Sex

Bangor Daily News
April 27, 2005

More and More, Maine Boys are Avoiding College

THE Atlantic
May 2000

THE WAR AGAINST BOYS

Final Report: Task Force on Gender Equity in Education

March 2007

“Gender equity is often confused with gender equality. Achieving gender equality in school requires that we provide the same resources and opportunities to all students regardless of their gender. This is a relatively simple task in comparison to creating gender equity in our education system. Gender equity goes beyond the expectations for gender equality. Gender equity ensures that boys and girls are given the necessary supports to achieve the same standards of excellence. Equity acknowledges that boys and girls may need different supports to achieve these outcomes. Furthermore, different subgroups of boys and girls, such as those of low socioeconomic status or those from different racial/ethnic backgrounds, may need further supports to achieve the same outcomes.” (p. 43)

ACKNOWLEDGEMENTS

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Chapter 1

Introduction

Underachieving boys—by now we have all heard the media warnings that alert us to this phenomenon. Boys are struggling in school and their college enrollment is falling. According to some in the media there is a “war on boys.” Media attention focused on how low socioeconomic status (SES) boys are doing in school might lead one to believe that all boys are struggling academically, or that concerns about girls’ educational issues such as Mathematics and Science achievement, which arose in the 1990s, have been completely resolved.

Some media sources conclude that boys’ lagging performance is the result of the attention given to girls’ education after the publication of reports such as the American Association of University Women (AAUW, 1992) report, *How Schools Shortchange Girls*. Research at the time showed that girls received less attention from educators and less encouragement to delve deeper into their understanding of material being studied and discussed (Sadker & Sadker, 1994). Consequently, they were less likely to take advanced courses in Mathematics and Sciences, scored lower on standardized tests in Mathematics and Science, and were less likely to pursue study in fields related to Science and technology (AAUW, 1992). Currently, girls’ standardized test scores in Mathematics and Science approach those of boys. However, there has been a long-term, worldwide trend of lower scores for boys than girls in Reading and Writing.

The Task Force on Gender Equity in Education originated due to concerns about Maine boys’ poor academic performance. This poor performance was found in boys’ low Reading and Writing scores on the Maine Educational Assessment and on the National Assessment of Educational Progress, in addition to their low enrollment in and graduation from college. There is no doubt that, based on these data, a gender gap exists. After a careful analysis of the data, numerous presentations on gender and education, a review of current research, and many discussions, the Task Force reached a more in-depth understanding of the concept of gender gap and an appreciation of the complexity of gender issues in Maine education. This report moves beyond catchy headlines and overly simplistic comparisons between boys and girls. It identifies and describes a much more complex intersection of factors that are at work in Maine education and directly impact our understanding of the gender gap such as socioeconomic status (SES). Still, let us begin by addressing those headlines.

In this report, we document and consider gender differences in academic achievement. But we do so fully aware that while we can easily separate gender from other aspects of identity when sitting at our computers and then highlight those differences in simple color-coded graphs; this is never the case for a child sitting in a school classroom. He or she will experience the social and material world in much more complex ways. In some cases, poverty will be a greater factor in whether he or she can focus on school work or achieve in school. In other cases race and ethnicity will impact how welcome or engaged he or she feels in a classroom. If we want to address the lived experiences of children in schools, we need to fully appreciate the ways gender intersects with other aspects of identity to influence his or

her educational experience. If we are to provide truly equitable programs and services for all students, we are obligated to take into account the ways gender, SES, and race work together to impact student aspirations and school achievement. Thus, whenever possible in this report, we consider gender in relationship to these aspects of identity and we discuss the ways such intersections work to produce situations or experiences in which students are especially supported in school or become vulnerable to inequities.

Although much of Maine is low-SES and rural, support for students in such communities often creates what is known as social capital, contributing to higher self-esteem supporting higher academic achievement than in states where poverty is concentrated in large urban areas; consequently, Maine's state and national assessment results do not seem to indicate as large an achievement gap due to SES alone as results do in other states. Nonetheless, a combination of SES factors, race/ethnicity and gender issues do seem to create conditions influencing student academic performance in significant ways.

For instance, an analysis of American Indian MEA scores¹ in Maine shows that for girls in 4th grade the average Reading and Mathematics scores hover around the cut point for "Meets Standards." At 8th grade, the same is true for girls in Reading. The average boys' scores, however, are significantly below both the girls' scores and the cut point for meeting Maine's standards at both grades. Content specialists in the Maine Department of Education have speculated that this could be due to three factors: (1) the tendency in Maine at the local level to ensure that all students have an equal opportunity to learn; (2) the perceived opportunities for female American Indian students to raise their SES status by working in clerical and other jobs requiring functional literacy and numeracy – with no comparable perception of such opportunities available to male American Indian students; and (3) the greater ease with which American Indian girls may be able to function in the majority society than the boys. For example, the superintendent of the Maine Indian Education (MIE) district has noted that the high school dropout rate of male American Indian students from the reservations is a significant problem. The MIE district does not maintain any high schools, and moving out into the public school system may raise more issues for the boys than the girls in this case.

Some may be tempted to conclude that attention paid to girls' academic issues in the 1990s is the cause of boys' academic decline in the new millennium. Certainly, articles such as "The War Against Boys" support this notion. But this conclusion is only reached when one frames gender equity as a "zero-sum" game. "When framed as a contest over discrete resources, time, critical attention, or educational achievements, boys' and girls' issues emerge as oppositional" (AAUW, 2001). The Task Force on Gender Equity in Education rejects the idea that supporting one gender leads to the neglect of the other gender. In a public education system, it is neither desirable nor ethical to sacrifice the progress of one group of students in order to further the progress of another nor is it necessary. While there is no room for this behavior in public education, there is always room for educators to understand how cultural and personal assumptions about students based on gender, socioeconomic status (SES), race or ethnicity, or gender identity and expression affect their practice.

¹ *Note: These scores are for students who identify themselves as American Indian. Some of these students may not be identified by the principal tribes in the State as such.*

The Task Force on Gender Equity in Education

The Maine Department of Education's Task Force on Gender Equity in Education convened in March 2004. The Honorary Chair of the Task Force was First Lady Karen Baldacci. Task Force membership comprised a wide variety of individuals representing the Maine Department of Education staff; University of Maine, University of Southern Maine, and Colby College faculty, professional staff, and educational researchers; school administrators and educators; staff from the State Planning Office; and representatives of nonprofit organizations that work closely with youth. The Task Force met monthly in 2004 and 2005 to hear reports, discuss research findings, and make recommendations for this report. A smaller group of individuals from the Task Force made up the Research Team. Their role was to shape the research questions, continually review and interpret information and data presented to them, and guide the writing of the report. Subsequently Mary Madden, Ph.D., a research professor at the University of Maine, led the Research Team in analyzing data and research and in writing this report.

The original purpose of the Task Force was to investigate boys' underachievement in Maine schools. However, as the Task Force members discussed the scope of their study and began to analyze data, it became clear that the assumption that most boys were lagging, and most girls were doing fine in school, was far from accurate. Therefore, the Task Force, in consultation with Commissioner Gendron, expanded its investigation to explore educational equity issues for both boys and girls. The charge of the Task Force was to:

- Summarize recent studies and gather data on the discrepancy between male and female achievement in Maine students as manifested in: PreK-12 performance measures; student expressions of aspirations; postsecondary plans, education, training; career choices/readiness; college application/acceptance rates; and postsecondary performance measures; *in order to*
- Identify societal norms and specific factors (e.g., gender, socioeconomic status, level of parental education, geography, instructional practices) associated with the discrepancy; *in order to*
- Develop proposals for action to guide both state and local educational policy and program development designed to ensure gender equity for Maine students; *and to*
- Suggest additional areas of study that may contribute to an understanding and effective response to the gender equity issues identified; *and to*
- Identify strategies and indicators that will monitor progress on promoting gender equity.

The Task Force explored the following research questions².

1. How do the educational experiences, achievement, and aspirations of K-12 male and female students in Maine compare?
 - a. How do other factors (socioeconomic status, race, ethnicity, geographic location, rural/urban situation, school size, and Writing skills) interact with gender in influencing Maine students' educational experiences, achievements, and aspirations?
 - b. In which instances is gender a key determining variable?
2. What does the research tell us about the effect of society's construct of "masculinity" and "femininity" on the school experience of students in Maine?
3. How do the postsecondary plans differ for male and female students in Maine?
4. How do the postsecondary enrollment, fields of study, college persistence, and graduation rates for male and female students in Maine compare?
5. What does the research tell us about the effect of the family culture, including that of single-parent families, on the educational experience of students in Maine?
6. Given the findings, what policies, programs, and instructional practices have been shown through research to promote gender equity in schools?

To answer these questions, the Task Force reviewed and analyzed available data on Maine students. Multiple sources of data were analyzed to explore the ways in which boys' and girls' achievement and school experiences are the same or different, and how variables such as socioeconomic status complicate the gender picture. Where possible, multiple years of data were analyzed in order to provide a more complete picture of gender issues. Four years of Maine Education Assessment (MEA) were analyzed (through 2004, the most recent data available to the Committee at the time); results by gender and socioeconomic status (SES), gender and race or ethnicity are limited to the last two years of this period.

National Assessment of Educational Progress (NAEP) results for Maine students for a similar time period were also examined. NAEP results are used by the Department of Education to confirm Maine's Educational Assessment data and to provide a means of making valid comparisons of the performance of subgroups of students between Maine and other states. In addition, data from a variety of sources were used, including data from the Maine Department of Education, the Youth Risk Behavior Survey, the University of Maine System, the Maine Community College System, and the Education Trust. Research reports, articles, and

² *The Task Force began its investigation with a lengthier list of questions. However, it became clear that neither the data nor the time were ample enough to answer all questions posed. A decision was made to focus on the questions listed.*

academic publications on gender and gender equity were also reviewed so that Maine data could be placed in a broader context.

The Task Force heard presentations from both national and state experts on gender issues in education. Finally, three group discussions conducted with high school students helped us to learn about students' perceptions regarding gender and schooling. Their comments are integrated throughout the report but care should be taken in generalizing their remarks, as they are not necessarily representative of all students in Maine.

In 2006, this report was reviewed by representatives of the Task Force and staff of the Maine Department Education. Where appropriate, more recent data were added to more fully support, clarify, or update conclusions drawn by the Task Force in 2005. An early draft of the report was reviewed by Dr. William Pollack of Harvard University, and a later draft was used by a panel of Maine educators to refine the recommendations offered by the Research Team in Chapter 6 of this report.

Chapter 2

Gender Differences: Achievement and Other Academic Indicators

To examine the status of gender equity and academic achievement in K-12 education, the Task Force examined: (1) results of the Maine Educational Assessment from 2000-2001 to 2003-2004 school years; (2) results of the National Assessment of Educational Progress and international assessments over a comparable span of time; and (3) other academic indicators such as retention, suspension, drop out rates, eligibility for special education services, and students' perceptions of themselves as students and of their school climate. The Task Force also examined data related to postsecondary education in Maine. The following sections summarize these data and consider the findings in the context of other related research.

MEA data presented below are from a portion of the trend line that terminated with:

- the introduction of the new MEA assessing grades 3 through 8 in 2006; and
- the introduction of the SAT Reasoning Test as Maine's 11th grade state measure; resulting in
- a resetting of the score cut points at which students are perceived to be meeting or exceeding the standards of the *Maine Learning Results* (MLR).

Trend lines are representations of the levels of student achievement for a given population over time; e.g., 4th grade Mathematics students. A major change in assessment design or reporting of achievement levels will end a trend line. The trend lines for all MEA subjects, starting in 1998, ended in 2005 because of changes in both the purpose and specifications of the assessments, which resulted in a standard setting in 2006. In general, standards and assessments change over time as the content of academic subjects, instructional procedures, and expectations of educators change.

National Assessment of Educational Progress (NAEP) trend lines generally end with the introduction of a new assessment framework and item specifications, which are developed and approved under the direction of the National Assessment Governing Board (NAGB).

- The current NAEP Science and NAEP Mathematics trend lines began in 1996 and ended in 2005.
- The current NAEP Reading trend line began in 1992 and will end in 2007.
- The current NAEP Writing trend line began in 1998 and is expected to end in 2007.

Assessment results from different trend lines should not be compared directly; however, trends (patterns of student achievement) can be compared, if the conclusions drawn from such comparisons are carefully placed in context of the conditions in the educational and assessment systems at the time.

Both the MEA and NAEP produce state results in two forms, average scaled scores and percentages of students meeting or exceeding standards. These percentages are not scores; they are based upon a process called standard setting in which committees of educators coordinated by assessment professionals assign cut points in the assessment scoring scales where students are said to be performing at a level that meets the standards on which the assessment is based.

- The standards upon which the MEA is based are the *Maine Learning Results*, first established in 1998 in an act of the Maine Legislature and currently under revision by the Maine Department of Education in conjunction with committees of educators and other concerned citizens. Revision of Maine standards is subject to public review and comment and eventual approval by the Maine Legislature.
- Strictly speaking, NAEP is not based upon national standards because they do not exist as such. To date, Congress has not legislated national standards in any subject, leaving the oversight of curriculum to the individual states. NAEP assessments are based upon the consensus of nationally representative panels of researchers, educators, and assessment specialists who develop NAEP frameworks under the supervision of the National Assessment Governing Board (NAGB), whose members are appointed by the Secretary of Education. NAGB is an entity operating outside of the United States Department of Education, and it currently derives its authority from the *No Child Left Behind* Act. NAGB members include politicians, educators, business people, and other concerned citizens. Currently, a Maine teacher serves on the Board. NAGB must ultimately approve all NAEP frameworks and the assessments they produce.

Because of the way in which achievement levels are set for NAEP, students are not said to be meeting standards (as is the case with the MEA) but rather to be demonstrating proficiency. Cut scores may vary across different subjects and different assessments of the same subject. It is important to remember that reports of achievement level results are not assessment scores but interpretations of them, forming a bridge between the statistical measurement of student performance and the goals of educational systems for the students in them. This makes their use appropriate for the following discussion, as the Task Force's principal concern was to identify the causes of the inability of some groups of students to meet standards at this time and to propose solutions to remedy this situation.

Reading (MEA)

In Reading, fewer boys than girls meet or exceed the standards as measured by the Maine Educational Assessments (MEA). This difference persists in 4th, 8th, and 11th grades in all years for which the data were examined. The difference in the percent of boys and girls that meet or exceed the standards is largest in 8th and 11th grades where 13 to 17 percent more girls than boys met or exceeded the standards between 2000 and 2004 (Figures 1 and 2).

Figure 1.

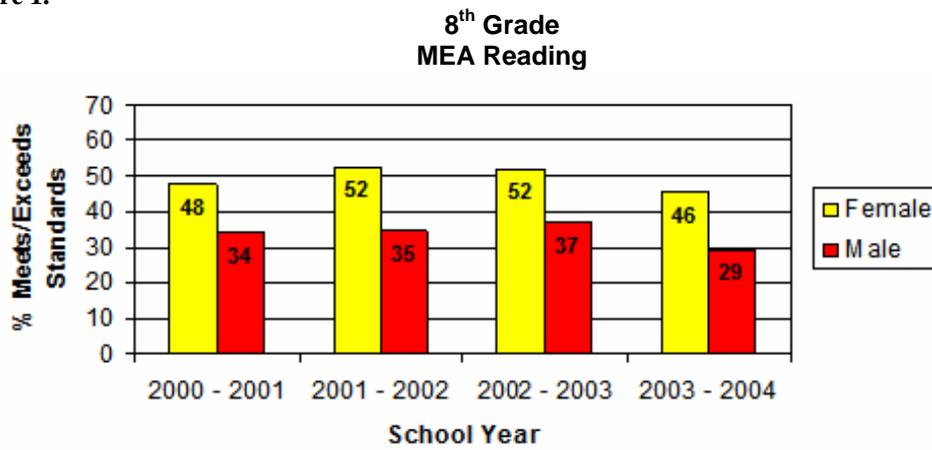
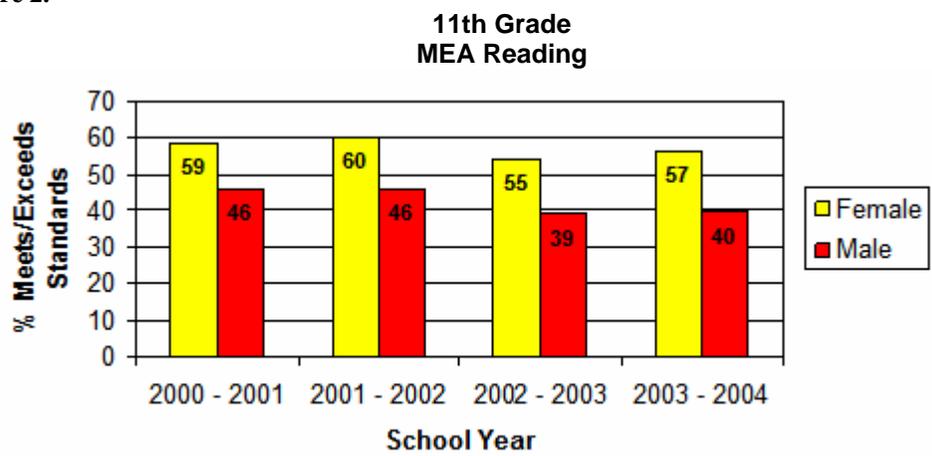


Figure 2.



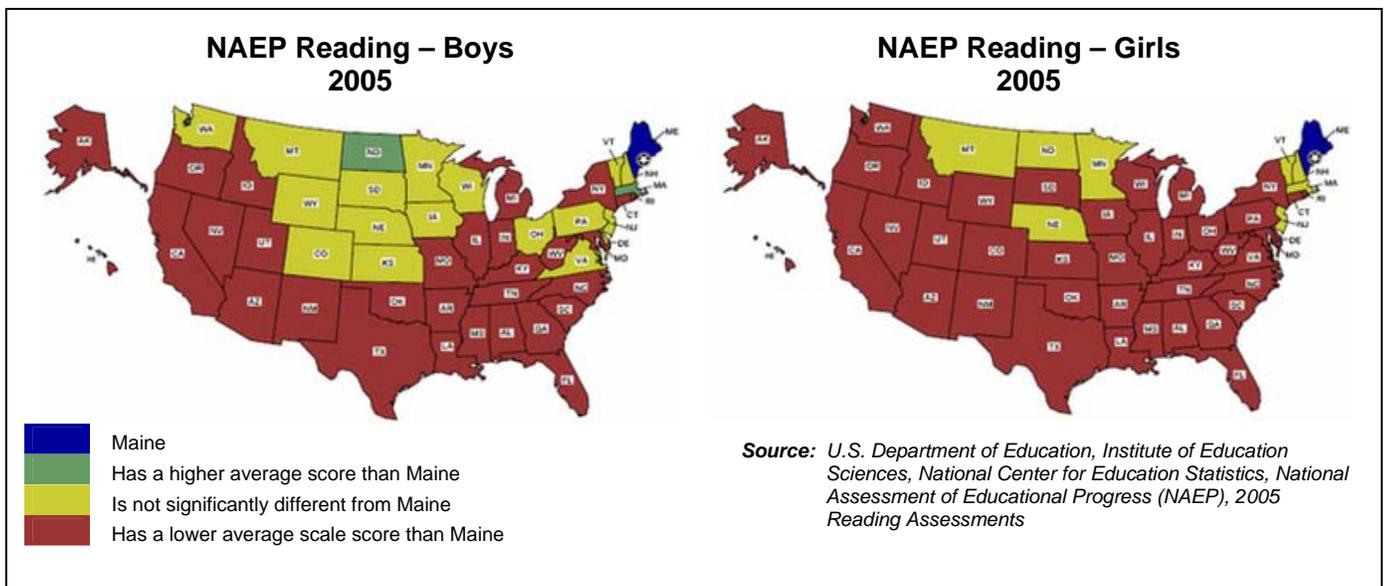
Placing MEA Reading Scores in Context

National Assessment

It is useful to look at these results in the context of national and international assessment results involving representative samples of students in Maine and in the United States. NAEP is administered to a representative sample of 4th and 8th grade students in Maine. While the test may not be as sensitive to measuring whether or not students meet *Maine's Learning Results*, the results indicated that, during the last three years in which Maine students participated in the assessment, boys clearly performed at a lower achievement level than girls, as demonstrated by their respective scores.

- The difference in NAEP Reading scores between girls and boys (5 points) was smallest in 4th grade. Maine's state scores for NAEP Reading are among the highest in the nation, and no state currently produces higher scores for girls than Maine in NAEP Reading. At 4th grade, Maine's gender gap in NAEP Reading scores is among the lowest in the nation.
- The difference in Reading performance between girls and boys was greatest at the 8th grade level where, in 2003, 45% of girls but only 29% of boys demonstrated proficiency in Reading. At 8th grade, Maine's gender gap (14 points) in NAEP Reading is the same as in many other states.

The following maps compare performance of 8th graders, separated into groups of boys and girls, in NAEP Reading assessments across the nation. These results are from the most recent administration of NAEP in Maine, 2005.



Maine 2005 NAEP Reading results for 8th grade showed a 14 point gap favoring girls. This is similar to the results in other states. However, only two other states had higher average scaled scores for boys. Sixteen other states had equivalent scores for boys. No other states had higher scores for girls, and eight other states had equivalent scores.

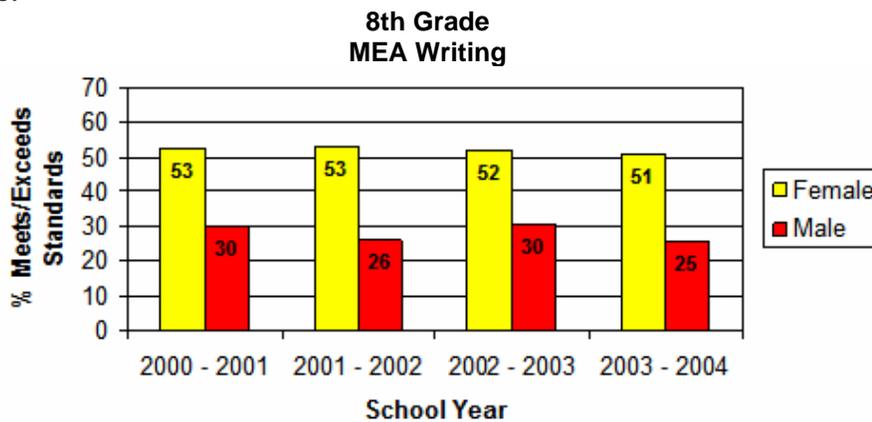
International Assessment

The Progress in International Reading Literacy Study (PIRLS) is similar in structure to the NAEP, and several test specialists in the United States have worked on both. PIRLS is administered across the world, and countries receive scores. It is administered only to the equivalent of 4th graders. The gender gap in Reading at 4th grade is a world-wide phenomenon; girls outscore boys by 8 to 49 points, depending upon the country. Seven other countries had higher overall Reading scores than the United States, but all of them had larger gender gaps as well. The United States gender gap at 4th grade in Reading is among the smallest in the world.

Writing (MEA)

On the MEA, the gap between boys and girls in students meeting or exceeding Maine standards in Writing is larger than the gap in Reading. Fewer boys than girls met or exceeded the standards for Writing as measured by the MEA in 4th, 8th, and 11th grades. The gap between the percent of boys and girls is greatest in the 8th grade where 22 to 27 percent fewer boys than girls met or exceeded the standards between 2000 and 2004 (Figure 3).

Figure 3.



Placing MEA Writing Scores in Context

National Assessment

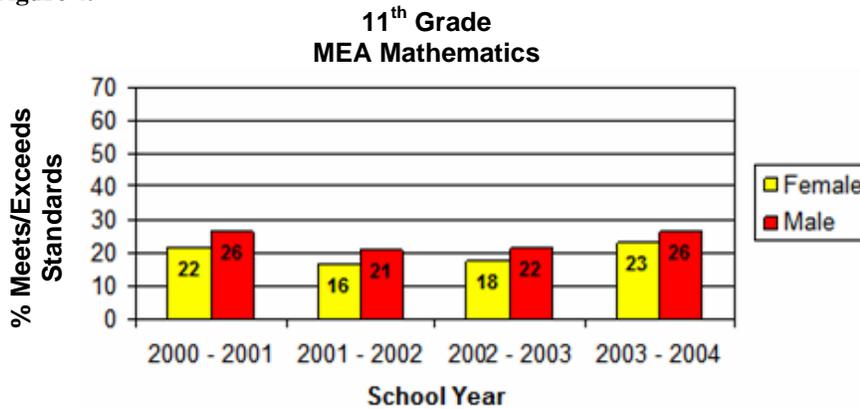
Eighth grade boys in Maine were much less likely than girls to demonstrate competency in Writing on the 2002 NAEP.

- Forty-nine percent of girls and only 22% of the boys scored at or above the proficient level.
- NAEP 2002 Writing results for Maine showed a 26 score point gap favoring girls at 8th grade and a 22 point gap favoring girls at 4th grade.

Mathematics (MEA)

Since 2000, boys and girls' scores on the Mathematics section of the MEA have not differed significantly. The gap is largest at the 11th grade where between 3 and 5 percent of boys have scored higher than girls (Figure 4). Statistically, the difference is considered to be very small.

Figure 4.



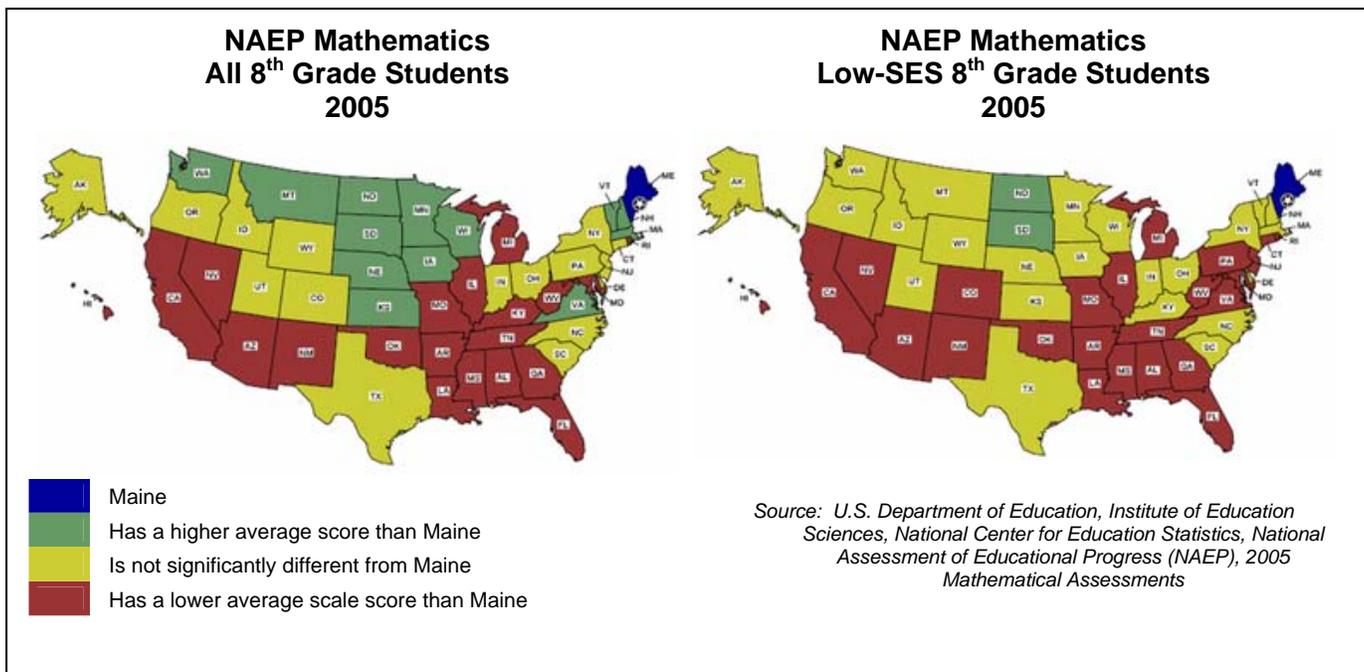
Placing MEA Mathematics Scores in Context

National Assessment

NAEP results have shown a similar trend in Maine as the MEA results.

- During the last three years in which Maine 4th graders participated in the National Assessment of Educational Progress Mathematics assessments, slightly more boys (3%) had scores sufficient to demonstrate competency in Mathematics.
- NAEP 2005 Mathematics results for 8th grade in Maine showed no statistically significant gap in scores for boys and girls.

The following maps compare performance of all 8th graders with performance of all low-SES students across the nation on the 2005 NAEP Mathematics assessment:



Thirteen states had higher average scaled Mathematics scores than Maine for all students, but only 2 states had higher average scaled scores for students receiving free and reduced price lunch, the low-SES indicator used by MEA and NAEP.

International Assessment

The Trends in International Mathematics and Science Study (TIMSS) is similar in structure to NAEP, and several test specialists in the United States have worked on both. TIMSS is administered across the world at 4th and 8th grade.

- In 2003, the United States average scaled score (504) for 8th grade Mathematics was higher than the international average (466).
- The United States score (518) for 4th grade Mathematics was higher than the international average (495).
- United States boys outperformed girls in both grades in 2003, while in 1995 there was no gender gap in TIMSS Mathematics scores for United States 4th graders. In 8th grade, United States boys and girls scores both rose by the same amount (12 points), but a small gap remained between them (5 points).

Science and Technology (MEA)

According to the old MEA (producing the trend line that ended in 2005), neither boys nor girls are performing well in Science and Technology at 4th, 8th, or 11th grades. A comparison of boys and girls scores shows that boys are doing slightly better than girls at the 8th and 11th grades (Figures 5 & 6).

Figure 5.

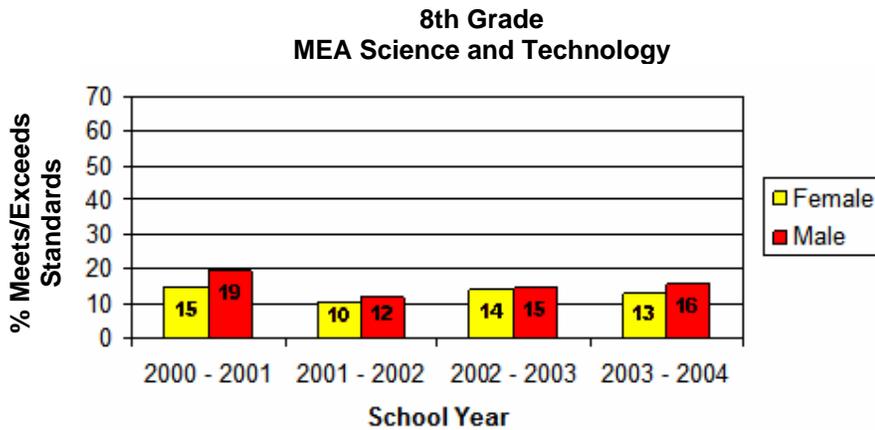
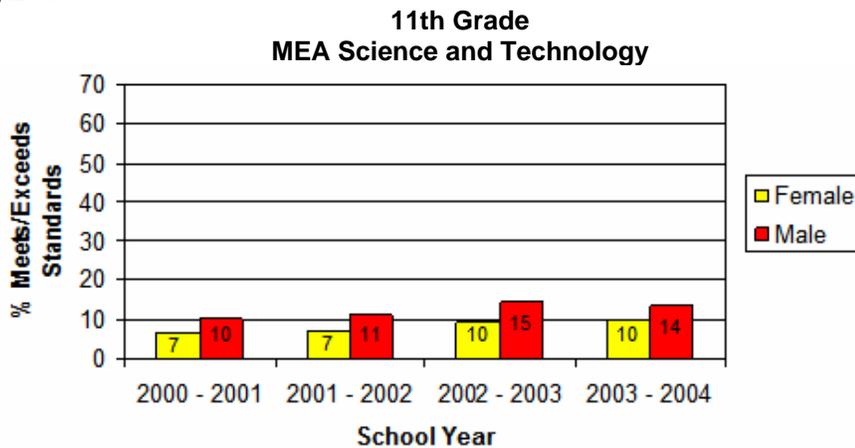


Figure 6.



Placing MEA Science and Technology Scores in Context

National Assessment

- Maine results of the 2000 NAEP Science assessment in 4th grade showed fewer girls than boys (34% of girls vs. 43% of boys) in Maine scoring high enough to demonstrate proficiency in Science. In 2005, the achievement level gap was 40% proficient for the boys and 32% for the girls – an increase of 1%.
- In 2005, 5% more Maine 8th grade boys than girls were assessed as proficient in Science (37% for the boys vs. 32% for the girls).

International Assessment

The Trends in International Mathematics and Science Study (TIMSS) is similar in structure to NAEP, and several test specialists in the United States have worked on both. TIMSS is administered across the world at 4th and 8th grade.

- In 2003, the United States average scaled score (527) for Science in 8th grade was higher than the international average (473)³.
- IN 2003, the United States TIMSS score (536) for 4th grade Science was higher than the international average (489).
- United States 8th grade boys outperformed 8th grade girls by 5 points in Science, but the boys' scores also fell 10 points from 1995, helping to narrow the gender gap.

Other Academic Indicators

A variety of other academic indicators were examined for gender disparities.

- More than 65% of the students in Maine identified with disabilities and receiving special education services are boys. This is approximately twice the percentage of girls who receive special education services. Disability categories where males have the highest percentages are autism, other health impairment, emotional disabilities, and learning disabilities. (Maine Department of Education)
- Boys are retained for a grade more frequently than girls in Maine. During the last five years, an average of 2,189 boys were retained. This is considerably higher than the average of 1,244 girls who were retained during the same period. (Maine Department of Education)
- Expulsion is another issue which primarily concerns boys in Maine. Between 1998 and 2003, the number of boys in grades 7 through 12 that were expelled ranged from 120 to 149. This was in comparison to an expulsion range of 26 to 33 girls during the same period. (Maine Department of Education)
- The dropout rate for boys is only slightly higher than for girls in Maine. However, girls drop out of school earlier in their high school years than boys. Twenty percent of girls' dropouts occur during their first year of high school, compared to 16% of boys' dropouts during the first year. (Davis, Forstadt, and Lee, 2006)

³In 2000, the National Center for Education Statistics (NCES) conducted a linking study using complex statistical modeling to compare the performance of 8th graders in the individual states on the 1996 NAEP with the performance of their counterparts across the world on the 1995 TIMSS. The results of this analysis indicated that students in only one country in the world – Singapore – performed at a higher level than Maine's 8th grade students.

- Boys are more likely than girls to attend career and technical education programs in Maine. Boys make up two thirds of the high school students who attend these programs, most commonly choosing to study transportation and distribution services, construction, and manufacturing. (Maine Department of Education)
- Boys are more likely to attend alternative education programs than are girls in Maine. (Maine Department of Education)
- According to NAEP data (1998-2005), boys in Maine are less likely to read at home and less likely to talk to others about what they have read. Boys whose fathers completed college are more likely to achieve higher scores in Reading and Writing than those whose fathers did not.

Selected Maine Education Statistics, by Gender		
	BOYS	GIRLS
Special education prevalence (2003-2004)	22.6%	11.3%
Number (percent) of students retained for a grade 5-year average, grades K-12	2,189 (2.09%)	1,244 (1.28%)
Number (percent) of expulsions from grades 7-12 5-year average	135 (0.27%)	34 (0.08%)
Number (percent) of high school dropouts 5-year average	1,079 (3.32%)	792 (2.60%)

Source: Maine Department of Education

Technology

In Maine schools, the Maine Learning Technology Initiative (MLTI) offers a unique opportunity to broaden access to technology and expand the range of uses students associate with computers. By embedding computer use into the fabric of 7th and 8th grade classrooms, and with expanding use of laptops in Maine high schools, the potential exists to break down continuing barriers to a more gender balanced approach to technology, as well as to provide a significant laboratory for further research into effective classroom practices.

There is, at the time of this Writing, no research available demonstrating a clear relationship between using technology and academic performance. Preliminary findings from investigations of the MLTI (Harris & Smith, 2004; Fairman, 2004) suggest that, in schools with a high level of computer availability, students previously disengaged in school work or students who had been low-performing and resisting school rules and expectations demonstrate a changed level of engagement and a more positive attitude toward school when one-to-one laptop computers are used. These students are reported to earn higher grades and to conform to school behavior expectations when a high level of computer access is provided in the learning environment. According to individual teacher reports, this effect is particularly

evident in schools where wireless, networked laptop computers have been made available to all students (Mitchell Institute, 2004).

Today's technological tools have become mainstream, and women now rival their male counterparts in the use of communication technologies (e.g., cell phones, e-mail, etc. [Lenhart, Rainie, & Lewis, 2001; Goode, 2004]). It is surprising, therefore, to discover that a national gender gap remains in the use of computer technology in many elementary and secondary schools (Schofield, 1995). In addition, the widespread representation of males as the computer science "doers" and "experts" is further exacerbated by the informal technology knowledge of boys and girls. More often for boys, video games and related experimentation are the "hook" which gets them interested in the use of computers, and even in the academic study of computer science. These games, designed by males for boys, do not appeal to girls to the same extent (Goode, Estrella, & Margolis, in press).

The field of computer science is distinguished from other Mathematics and Science disciplines by the fact that most educators themselves have little computer science experience and tend to be unfamiliar with the field in general. Consequently, many educators are often not in a position to acquaint girls with and encourage them to pursue a course of study in computer science.

Further research on the MLTI by Karen Kusiak, who teaches in Colby College's Education Program, is currently underway. Kusiak warns that "technology, in and of itself, won't change education or provide improved opportunities for students who are on the 'wrong' side of the achievement gap. Students who under-perform due to gender expectations or race and social class identity won't necessarily achieve at higher levels because laptops are available. Teachers need to understand the dynamics of race, gender and SES and use whatever tools they have to the advantage of all students."

Jane Margolis of UCLA's Graduate School of Education and Information Studies, agrees (Margolis & Fisher, 2002). She finds that people put too many hopes on technology as the "great equalizer" or the "magic bullet" to solve the achievement gap. Educators must do more than recruit females and other underrepresented students into computer science and Advanced Placement courses. The challenge is to engage them and to provide them with support.

The Intersection of Gender and Socioeconomic Status

When the data presented in this report are examined by gender alone, it appears that girls are doing better academically than boys in Reading and Writing. A holistic approach to understanding the achievement of Maine students will consider their gender, the SES status of their families, and their race or ethnicity, since the lived experience of Maine students does not separate out these factors. A more complex picture of who is succeeding and who is not succeeding academically emerges when all of these factors are considered.

Some might ask, why go beyond a simple gender analysis? After all, the media coverage leads us to believe that gender tells the story of school achievement. Early in the research on gender equity it was common for researchers to look solely at differences between males and

females. However, like all fields, the field of gender equity research has advanced. Today, credible research on gender equity recognizes that neither boys nor girls are monolithic groups. Boys' and girls' experiences, including their educational experiences, are mediated by race or ethnicity and SES. Looking at the connections between gender and SES, as well as gender and ethnicity⁴, are critical to gaining a deeper understanding of gender equity issues. If we want to better support all boys and all girls in Maine to achieve academically, then we must begin with a gender analysis, then explore the intersection of gender and socioeconomic status to fully understand which boys and which girls are most in need of support if they are to be successful in their education.

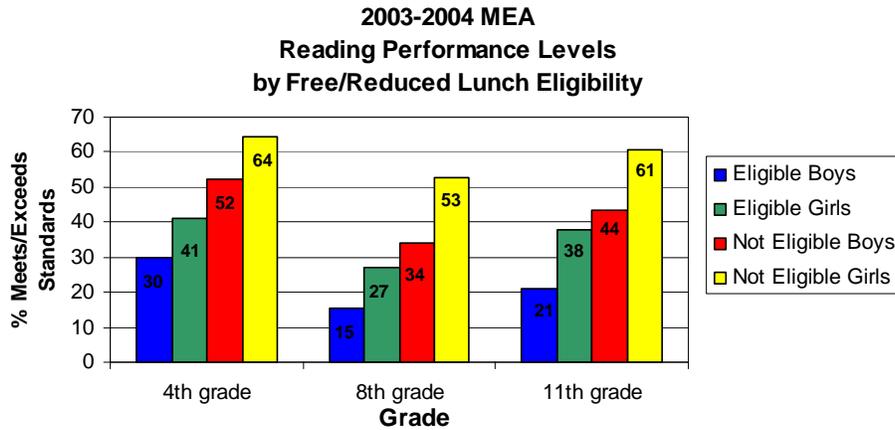
On the MEA, eligibility for free or reduced lunch is the variable which is commonly used to approximate low-SES status even though this variable is known to underestimate at the high school level. Between 8th and 11th grades there is usually a 10% drop in the percent of students who are identified as low-SES (28% in 8th grade and 18% in 11th grade). The drop is likely due to the fact that fewer students in 11th grade are willing to be identified as eligible for free or reduced lunch, rather than to a decrease in the actual number of eligible students.

MEA Reading

Boys from low-SES families, as indicated by eligibility for free and reduced lunch programs, are least likely to meet or exceed the Reading standards as measured by the MEA, followed by girls from low-SES families (Figure 7). Initially, one's perception in looking at these data is that girls in both groups (low-SES and not) score higher than boys in both groups; however, it is important to note that girls from low-SES groups score **lower** than boys who are **not** from low-SES groups. This is an example of the intersection of gender and SES.

⁴ The intersection of gender and race/ethnicity was not analyzed extensively for this report. This does not imply that race is not an important variable in understanding the experiences of boys and girls. Rather, an analysis of the intersection of race and gender is difficult in Maine because the student population in Maine schools is 98% white. However, in areas of Maine that are more ethnically and racially diverse it is essential for schools to consider the connections between gender and race when examining student achievement. Schools in the Portland district, for instance, have incorporated a growing African refugee community into their schools at elementary, middle, and secondary levels with notable success noted in the national media. As with the American Indian population, this African student population has benefited academically from assimilation strategies, including Expeditionary Learning that promotes teamwork across SES and ethnic populations.

Figure 7.



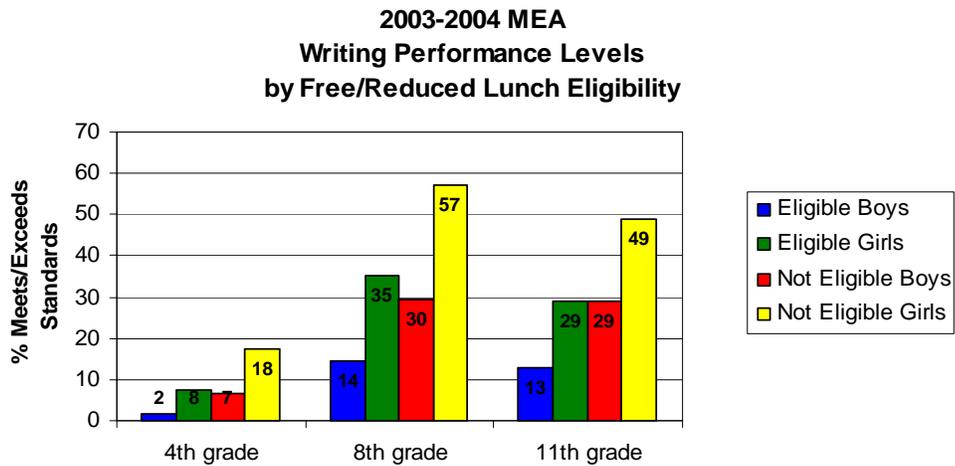
This distribution of scores across gender and SES levels is typical of all MEA subject areas analyzed, with the exception of Writing, in which eligible girls scored higher than not eligible boys. This is one example of where gender is more of an issue than socioeconomic status.

Clearly, SES status continues to be a very strong indicator of academic achievement. For purposes of our discussion on gender, however, it is of particular interest to explore the intersection of gender and SES, to understand the social and academic needs of low-SES boys and girls. In some instances, social and academic characteristics of SES status will be shared by both boys and girls. In other cases, as noted in this report, low-SES boys and low-SES girls may have challenges unique to their gender. Educators will need to develop a deeper conceptual understanding and effective intervention strategies that reflect the fact that individual students have multiple demographic characteristics, some or all of which may need to be considered.

MEA Writing

Writing is the one area measured by MEA where the difference between boys' and girls' scores was generally larger than the differences between economically advantaged and disadvantaged students. Boys from low-SES families are less likely than any other group to meet the Writing standards as measured by the MEA (Figure 8).

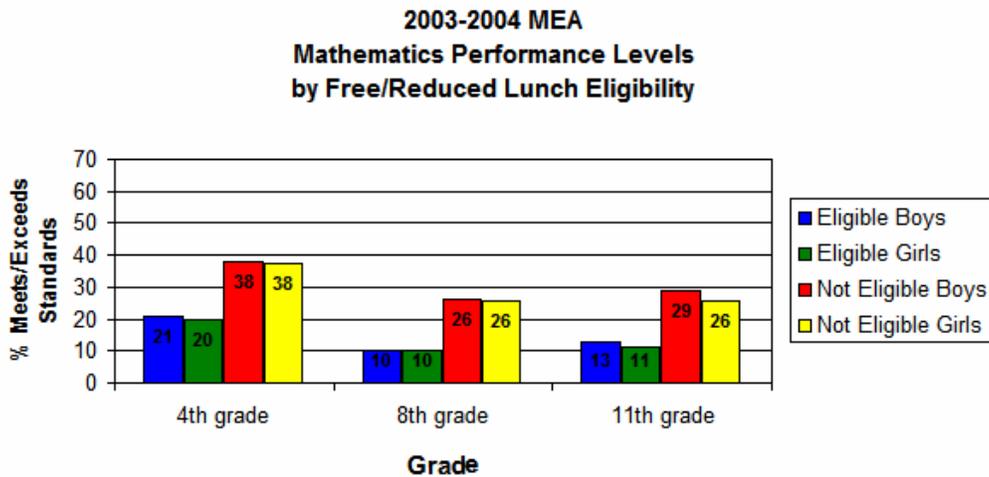
Figure 8.



MEA Mathematics

While MEA scores in Mathematics do not differ much by gender, there are differences based on socioeconomic status. In 4th and 8th grades the same percentage of boys and girls who are not eligible for free and reduced lunch meet or exceed the standards, while at the 11th grade a slightly higher percentage of eligible boys meet or exceed the standard (Figure 9). Among all students who are eligible for free and reduced lunch, the differences in the percentage that meet or exceed the standards is 2% or less.

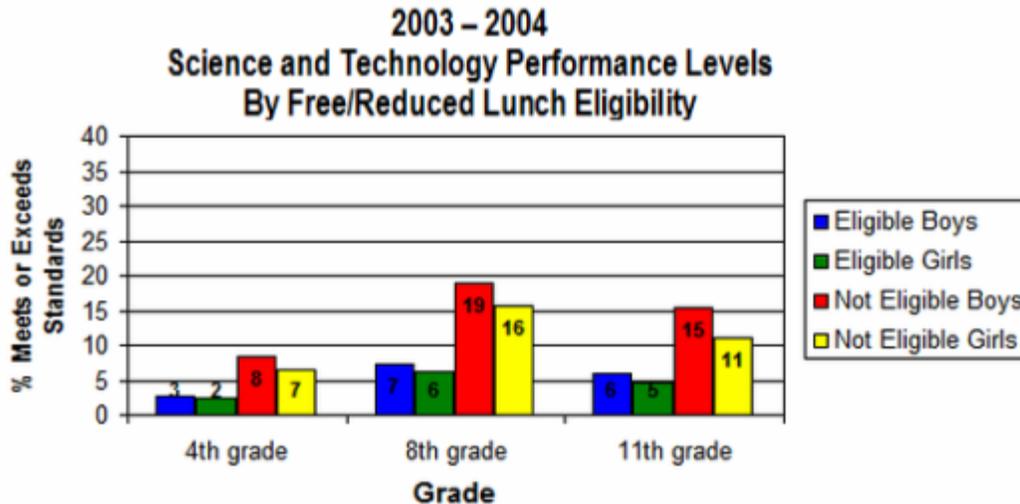
Figure 9.



MEA Science and Technology

In MEA Science and Technology results, we see a more pronounced influence of both gender and SES than in Mathematics.

Figure 10.



Discussion

Literature on gender differences can help us to understand our current gender gaps. First, researchers suggest several reasons for boys' academic underachievement. One theory is that boys' cognitive skills are less developed when they begin school (Kindlon & Thompson, 2000; Pollack, 1998). In this view, boys are less ready than girls to engage in reading, writing, and verbal activities required in school. As a result, they experience failure early on in school and disengage from academic pursuits. Other psychologists suggest that the school environment is not boy-friendly and does not account for their activity level (Pollack, 1998). Still other researchers insist that we need to consider how our society constructs masculinity and the ways in which this social construction shapes educators', parents', and boys', concepts of boys' interests, abilities, and expected behaviors and performance (Gilbert & Gilbert, 1998; Kimmel, 2000; Martino, 2001; Pollack, 1998).

Basic to school success are literacy skills. Research findings indicating that boys' cognitive abilities relevant to literacy develop more slowly are countered by studies that have found little or no difference between boys' and girls' reading, writing, and verbal abilities in elementary school (Hyde, 2006; Snow, 2002; Porche, Ross, & Snow, 2004). A recent longitudinal study of literacy found no differences in language and literacy ability prior to and through elementary school. However, this study found that boys' academic performance declined in middle school, including their achievement and interest in literacy. In preschool years, mothers read to boys less, placed less emphasis on reading for boys, and engaged in

less verbal interaction when they did read to boys (Porche et al., 2004). These researchers concluded that the differences were not related to ability but to preschool literacy practices, experiences and gender socialization.

In middle school and high school, evidence suggests that the issue for boys is not reading but *what* they are reading. Studies have found that adolescent boys read genres of literature that are of interest to them but often reject reading assigned by educators. There appear to be several possible explanations of boys' literacy practices in adolescence. Boys' literacy choices are often linked to activities found to be associated with masculine stereotypes and activities, or they are the ones that provide them with immediate information or an identified application (Kent, 2004; Porche et al., 2004; Smith & Wilhelm, 2002).

Another viewpoint is offered by Nick Boke, formerly of the Vermont Reading Institute, in an e-mail to the Maine Department of Education in 2003:

“Finally, one of the things we've been talking about a lot is that the critical thinking skills that translate into comprehension skills (asking questions, exploring inferences, etc.) are used by everybody everywhere. The whole question of the transfer of knowledge/skills from one arena to another is very tricky ("I showed 'em how to outline in history class. Why can't they do it for you in English class?"), but especially the transfer from stuff they've picked up on their own into academics.

So, for example, all our kids are inferring all the time. They don't know they're inferring because they don't have the vocabulary. So when we introduce it in school, it's as though it were something academic, that you wouldn't do in real life (or we make a two-minute token reference to a real-world inference and then get back to the novel). I think this is especially important for boys, many of whom are marginally related to school--if we can help them think about themselves as thinkers/problem solvers in their lives by helping them see the processes they go through, they become a bit more metacognitive. Then once we've pointed out their use of these skills, we can ask them to apply them to academics, and use that to help them hone the skill.”

Increased pressure at middle school to adhere to masculine stereotypes may also contribute to boys adopting a “tough guy attitude” and rejecting school activities. (Pollack, 1998; Porche et al., 2004; Madden, Tappan, & Brown, 2006). Closely associated with the tough guy attitude is the need to feel and be seen as competent (Pollack, 1998). Boys who do not view themselves as competent readers read less (Smith & Wilhelm, 2004; Porche et al., 2004). Several studies have found that boys interpret reading and school as a feminine activity. The cultural norms of masculinity promoted in our culture encourage boys to avoid characteristics or traits associated with girls and women (Foster, Kimmel, & Skelton, 2001; Kimmel, 2000; Porche et al., 2004). This may be especially the case for low-SES and working class families where men in the community often have jobs that emphasize manual labor over literacy skills (Alloway & Gilbert, 2004; Madden et al., 2006; Porche et al., 2004). This again points to the intersection between gender and SES, and requires that any potential intervention on behalf of boys be considered against whether there is more than gender at work in any given situation.

When we look at the findings for girls there is much to celebrate regarding girls' educational progress, including the closing of gaps in Mathematics and Science and Technology scores on the MEA and their increasing rates of college participation. While acknowledging these successes, it is also important to recognize that there is still much work to be done to assure equity in education for girls.

Schools are not neutral spaces, but generally reflect the values of educators in them and of the communities in which their schools are located. For example educators will often encourage students to strive to attend college, failing to acknowledge the impact of college education on the relationship between students and their families, who might have other plans for them. This may be particularly true for low-SES families. It seems reasonable to suggest that girls' experiences of school will vary, depending on their SES status, race or ethnicity, sexual orientation, and gender expression (Brown, 1992, 1998; Delpit, 1995; Espin, 1997; Finders, 1997; Fine, 1991; Fordham, 1993; Leadbeater & Way, 1996). In her analysis of focus groups with Maine girls in junior high school, Brown (1998) found that low-SES and working-class girls defined femininity in ways that often put them at odds with their educators and the culture of their schools. Generally more assertive and independent, these girls felt controlled and thus frustrated by their educators, and they often found educators' expectations confusing and their demands unfair. They felt educators did not listen or know them well and made false assumptions about them or judgments based on conventional notions of femininity. These experiences led the working-class girls in Brown's study to feel, as one girl said, quoting her teacher, that they "don't want our kind here." These working-class and low-SES girls felt alienated and believed school held little relevance to their personal lives and aspirations.

In her study of social class differences in junior high, Finders (1997) found that white girls whose families shared their school's values and definitions of femininity had the "social capital" to play with school rules and manipulate the line between good and bad. Still, because they associated academic achievement with immaturity, weakness, and lack of popularity, these girls resisted intellectual engagement, instead becoming involved in an active, but hidden literate life of teen-zines, note-passing, and bathroom graffiti. The white girls from low-SES families in Finders' study who aspired to do well in school and who felt academic success was their ticket to college felt more pressure to accept educators as authorities, hiding their curiosity, independence, and creativity. These girls found school to be a place where educators were more interested in rules than in them as people and therefore did not feel they could be themselves in school. So, in a different way and for different reasons, they too disengaged from school. Thus, research suggests some groups of girls fall through the cracks. These girls mostly come from low-SES families and go unrecognized when the debate about academic underachievement focuses exclusively on gender.

Even some of the most privileged girls struggle with notions of femininity and popularity that are at odds with intellectual engagement and school success. Outwardly, these girls may appear to be doing well in school. They work hard, have high aspirations, get good grades, and cooperate with educators. For these girls, the struggle is not evident in their schoolwork but rather may manifest as poor body image, depression, cutting behaviors, suicide attempts, and eating disorders.

Conclusions

The Task Force began its work by studying the differences in achievement by gender. Gender differences in MEA scores in Reading and Writing were noted. In Writing, the difference is greater than in Reading. The gender gap in Reading grows dramatically between 4th and 8th grade. The Reading gender gap is a world-wide phenomenon, and the gap in Maine is moderate compared to other states, while the gap in the United States is moderate compared to the gaps in other countries.

Further analysis showed that while there were gender differences in these subjects, the differences between low-SES students and those that were not are at least as significant as the differences between genders. Across all subjects, boys and girls from low-SES families scored lower than boys and girls who are not low-SES. The differences between socioeconomic groups are of moderate size compared to other states.

Overall, girls' and boys' scores on MEA assessments in Mathematics and Science and Technology are similar at all grade levels.

Although there is a basis in fact beneath the public dialogue about boys falling behind girls in academic achievement, this generalization alone is potentially incomplete without considering additional demographic characteristics that might provide a more accurate and holistic view of students and their needs. The intersection of gender and SES, for instance, requires that educators see each child as a unique individual whose characteristics and needs must be viewed from multiple perspectives. Boys and girls are more alike than different, and where differences exist they might be complicated by factors other than gender. Practices that take this approach, that avoid generalizations and stereotypical expectations, are more likely to truly match the needs of the individual student.

Chapter 3

Student Aspirations

Raising and supporting young peoples' aspirations is fundamental to helping young people prepare for a happy and productive life. In Maine, the University of Maine's National Center for Student Aspirations (NCSA) focused its efforts on this goal. (The Center was closed in June 2006.) NCSA defines student aspirations as identifying and setting goals for the future while being inspired in the present to work toward those goals. NCSA has identified three internal and external factors that can encourage and build students' sense of place and belonging, motivation and confidence and hence, their aspirations. Research (Bandura, 1994; Deci & Ryan, 1980, 2000a, 2000b) suggests that students with high levels of social supports, intrinsic motivation and self-efficacy are more likely to be successful in goal setting and attainment and have high levels of achievement.

Following is a description of each of these factors.

- **Social supports** are the emotional support, guidance and recognition that are provided to students by school personnel. Social supports provide a welcoming atmosphere that connect students to their school and community and are necessary for student well-being and social learning. Social supports are characterized by caring teacher/student relationships and students feeling supported and recognized both academically and nonacademically.
- **Intrinsic motivation** is a student's internal desire to attain academic goals, i.e., being motivated from within instead of externally motivated. Intrinsic motivation results in students putting forth effort and persisting in their efforts in the face of difficulties. Intrinsically motivated students are much more likely to commit to and complete assignments and projects and develop a better conceptual understanding of topics. There are three subscales in this construct including: (a) choice of task involves giving students ownership in learning; (b) effort is the amount of work students choose to put into their school work and how prepared they are for class; and (c) persistence is the ability of students to work through difficulties and difficult projects.
- **Self-efficacy** is a student's belief and confidence in his or her ability to accomplish tasks, make decisions, and achieve goals. Students with a strong sense of efficacy set high goals for themselves, approach challenging situations with confidence, and attribute failure to lack of effort rather than lack of ability. In order for students to have this sense of efficacy, they need to experience success and to feel empowered (Tu, Mitchell, Mason, Ritchie, & Wilson-Barker, 2006).

NCSA recently developed and administered a survey that measures these factors. The survey was conducted with 16,811 Maine students in grades 6 through 12 including 7,730 middle

school students and 8,733 high school students. Half of the survey respondents were male and half were female. The NCSA survey used parent education as an indicator of socioeconomic status. Twenty-five percent of the students reported that their father had at least a 4-year college degree, and 29% said that their mother had at least a 4-year college degree. Here is what the survey tells us about boys' aspirations.

Gender Differences

Boys in middle school reported fewer social supports, less self-efficacy, and lower intrinsic motivation than did girls in middle school. The most notable difference was that boys reported less intrinsic motivation—the internal desire to attain academic goals. In particular, boys reported that they put significantly less effort into their school work and preparing for class than did girls (Madden & Allan, 2006). This difference exists among middle and high school students and is large enough to warrant concern.

Like the boys in middle school, boys in high school reported fewer social supports, less self-efficacy, and lower intrinsic motivation than high school girls. As in middle school, the most notable difference was that boys reported less intrinsic motivation—the internal desire to attain academic goals. In particular, boys reported that they put significantly less effort into their school work and preparing for class than did girls (Madden & Allen, 2006). Educational psychologists have found differences in the factors motivating girls and boys. Girls tend to be more concerned than boys with pleasing adults, such as parents and educators. Boys, on the other hand, will be less motivated to study unless the material itself interests them (Pomerantz, Altermatt, & Saxon, 2002).

The Intersection of Gender and Socioeconomic Status

Among the middle school boys surveyed, 72% reported that neither parent had 4 years or more of college. These boys reported lower intrinsic motivation, specifically in the effort they put into school work and their persistence in working through difficulties with school work, than did boys whose parents had four years or more of college. Middle school boys whose parents had less education also reported having less self-efficacy.

The relationship between parent education and intrinsic motivation seen among middle school boys on the NSCA survey is also true of high school boys. Among the high school boys, 71% reported that neither parent had four years or more of college. These boys scored lower on all the intrinsic motivation scales; most notably they reported putting less effort into school work (Madden & Allen, 2006).

Among the middle school girls, 73% reported that neither parent had four years or more of college. Like the boys, these girls reported lower intrinsic motivation, specifically in the effort they put into school work and their persistence in working through difficulties with school work, than did boys whose parents had four years or more of college. Middle school girls whose parents had less education also reported having less self-efficacy (Madden &

Allen, 2006).

Among the high school girls, 71% reported that neither parent had four or more years of college. Unlike the middle school girls, parental college education was not a significant factor in high school girls' intrinsic motivation (Madden & Allen, 2006).

Discussion

According to the NCSA survey (2005a), which measured several constructs related to aspirations, there is a significant difference, based on self-reports, between the effort boys and girls report putting into their school work.

Among boys at middle and high school levels, those who reported that their parents had less than 4 years of college were more likely than their male peers whose parents had at least 4 years of college to report putting less effort into their school work.

Among middle school girls, those who reported that their parents had less than four years of college were more likely than their female peers whose parents had at least four years of college to report putting less effort into their school work. This difference was not as large among high school girls.

Conclusions

These findings raise some key points related to boys' academic achievement. Given the difference between boys of different socioeconomic status in their reports of effort, it is important to learn more from low-SES boys about their schooling experience and motivation or lack of motivation to succeed in school. Here again, educators will need to develop a complex understanding of the demographic characteristics of their students, considering both gender and socioeconomic status, to be certain interventions or supports are targeted and carefully developed.

Chapter 4

Gender Differences in Postsecondary Education

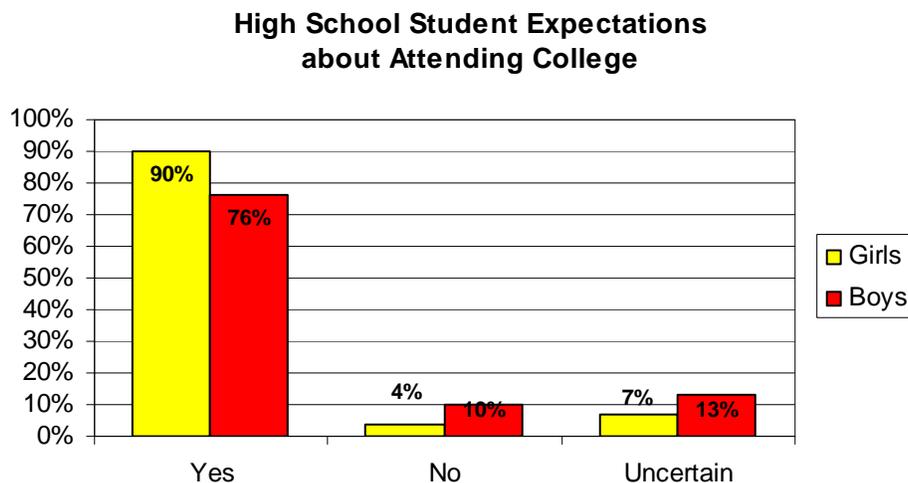
As of 2004, 37% of Maine working age adults, ages 25-64, had at least an associate's degree. In a recent public opinion poll conducted with 400 Maine adults, 78% said they believe today's high school students will need at least a 2-year degree to be successful (Maine Compact for Higher Education, 2006). It is likely that those surveyed understand the changing economic landscape of Maine. This chapter examines the gender gaps in college planning, enrollment, and graduation.

Planning and Preparation for College

Information about planning and preparation for postsecondary education attendance was gathered from a 2002 study of 2,500 students, young adults, parents and educators from across Maine conducted by the Mitchell Institute. The survey examined barriers to postsecondary education in Maine. This study found that parents and family, academic tracks in high school, and community factors are primary indicators of whether or not students will pursue postsecondary education. Students in college preparatory and honors academic tracks in high school are more likely than those in general or vocational tracks to have college plans. Even after controlling for other differences, boys are less likely than girls to report having plans to attend college. Eighty-five percent of boys plan to attend college after high school, compared with 93% of girls. Among students in college preparatory and honors courses, 94% of girls and 91% of boys had college plans.

The NCSA survey (2006) reported on in Chapter 3 also found that fewer high school boys than girls expect to attend college (Figure 11).

Figure 11.



The SAT Reasoning Test is another indication of postsecondary education planning. Most high school students who are considering applying to postsecondary institutions take this test. Many postsecondary institutions use SAT scores as one source of information to make decisions about whom they will admit. In Maine, fewer boys than girls take the SAT test. In 2005, approximately 1,100 more females than males took the test in 12th grade.

Prior to 2005, the test consisted of multiple Verbal and Math sections. The Verbal section of the old SAT consisted of critical reading and verbal analogy items. A new version of the SAT, first administered in 2005, consists of multiple Writing, Critical Reading, and Math sections. The essay portion of the Writing section emphasizes critical thinking skills and replaces the verbal analogies multiple-choice portion of the Verbal Section. For the 10 years leading up to the introduction of the new test, boys in Maine had consistently scored higher than girls on both the Verbal and Math sections of the SAT. In 2005, of the 12th grade students who took the test, boys received scores that 8 points higher on the Verbal section (Figure 12) and 34 points higher on the Math section than girls (Figure 13).

Figure 12.

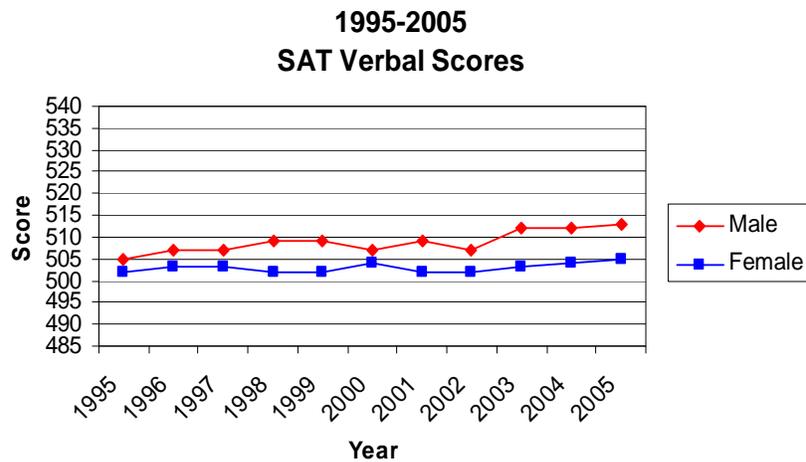
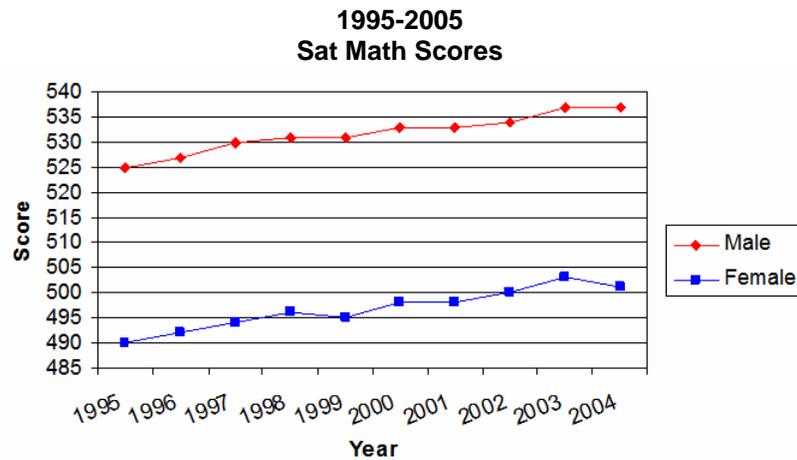
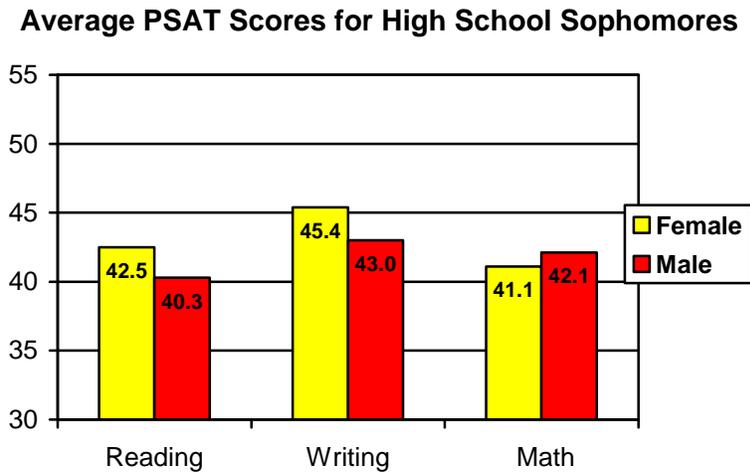


Figure 13.



Boys' higher scores on the SATs persisted over these years despite the fact that girls had closed the gap in Mathematics and Science scores on the MEA and report attaining higher grades. Students were encouraged to take the PSAT in their sophomore year of high school in Maine in preparation for the SAT. In 2004, the Maine Department of Education made the PSAT available to all high school sophomores. Wider availability of the test reduced the differences between the number of boys and girls taking the PSAT, with only 191 more girls than boys sitting for the test. Tenth-grade boys and girls scored within three points of each other in all test areas on the PSAT in 2004 (Figure 14).

Figure 14.



The College Board finds the PSAT to be a good predictor of SAT performance by the same cohort of students, and this shift in the gender gap was carried over dramatically in the 2006 results, where scores for the new SAT were reported.

Nationwide, scores for college-bound seniors showed girls outscoring boys, on average, by 11 points in Writing (502 to 491). The Writing section contains an essay portion and a multiple choice portion. By comparison, in Critical Reading scores, there was a 2 point difference favoring the boys, down from a 5 point difference the previous year. The essay portion of the Writing section replaced an analogies section that had been perceived to favor white, middle class males. The following writing section prompt, in the released form for the new SAT (2005) is clearly more analytical in nature than prompts used by the MEA and NAEP:

“We must seriously question the idea of majority rule. The majority grinned and jeered when Columbus said the world was round. The majority threw him into a dungeon for his discoveries. Where is the logic in the notion that the opinion held by a majority of people should have the power to influence our decisions?”

Assignment: Is the opinion of the majority – in government or in any other circumstances – a poor guide? Plan and write an essay

in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.”

The guide for College Board scoring of the Writing section of the new SAT is different than guides used for the old 11th grade MEA and current NAEP in that it stresses critical thinking to a higher degree. The old MEA 11th grade guide awarded the highest score in stylistic and rhetorical aspects of Writing to responses with “the topic and details richly developed; distinctive voice, tone, and style; rich use of language.” The new SAT awards its highest score for a response that “effectively and insightfully develops a point of view on this issue and demonstrates outstanding critical thinking, using clearly appropriate examples, reasons, and other evidence to support its position.” (SAT, March 2005 Administration). One might have thought that the analytical nature of the task would have favored boys, but reflecting upon the clear trends in performance by girls on writing in all other assessments reviewed by the Task Force, it seems inevitable that the trend on the verbal section results for new SAT would reverse previous trends, in which the boys received higher scores overall.

The SAT Critical Reading section mean score for the nation dropped to 502, as a result of a decline of 3 points for girls and 8 points for boys – narrowing the gap between the two – and Maine’s state results for college bound seniors mirrored this phenomenon. The College Board notes that a 3 point difference amounts to about one more correct answer and that they do not often see such small gaps. In Maine, the gap in Critical Reading was slightly larger (5 points) in favor of the boys, but the Writing gap was similarly larger (13 points) in favor of the girls. The gap in SAT Mathematics remained stable, with a statistically significant difference in favor of the boys – both in the nation and in Maine.

The total population of college bound seniors taking the new SAT through 2006 was 54% female and 46% male, both in the nation and in Maine. The national decline in test takers from the previous year, although slight, continues a trend reflecting the declining number of boys planning to attend college; the decline was nearly twice as steep for boys as for girls.

Despite a national decline in test takers for 2005-2006, an increase in participation in Maine may have contributed to greater parity in boys’ and girls’ scores. In April of 2006, Maine required all high school juniors to take the SAT in place of the MEA, and subsequently required all sophomores to participate in the PSAT. It is important to note that the SAT data discussed above are for students taking any of the SAT administrations in the 2005-2006 cycle for the purpose of applying to college; the Task Force did not have access to the results of the universal administration of the SAT to replace the old 11th grade MEA at the time of this writing. It will be important to examine these results, now that full participation by all students is the norm, to see if gender differences persist or even further reverse themselves in the new trend line starting with the SAT in 2005 and the introduction of the new test containing the Writing section.

The SATs also provide information about the field of study in which a young person intends to enroll. An analysis of survey questions on the SAT indicates a difference in the fields of study girls and boys choose. Figure 15 shows the intended majors of girls and boys who took

the 2004 SAT. Girls who intend to enroll in college plan to study in fields traditionally associated with women—education, social sciences and history, health and allied services, or the biological sciences. Boys are more likely to identify engineering, mathematics, and computer or information services as intended majors. So, even though girls have closed the gap in high school in Mathematics and Science and Technology MEA scores, they are not pursuing study or careers in Science, Mathematics, engineering or technology fields at nearly the same rates as are boys.

Figure 15.

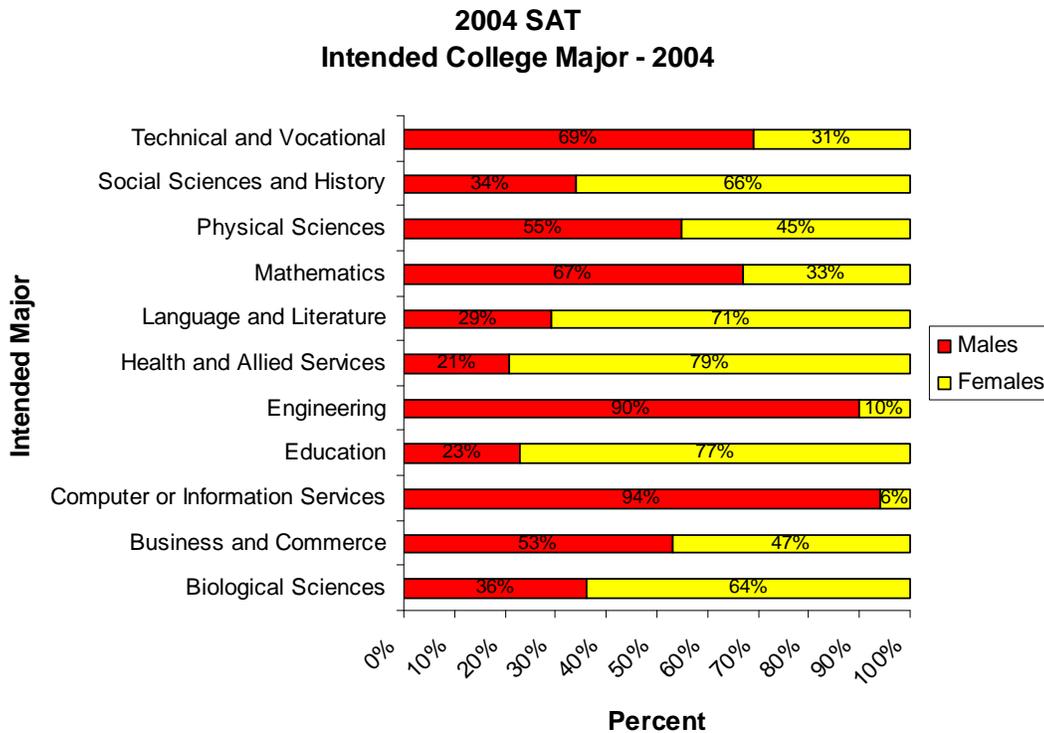
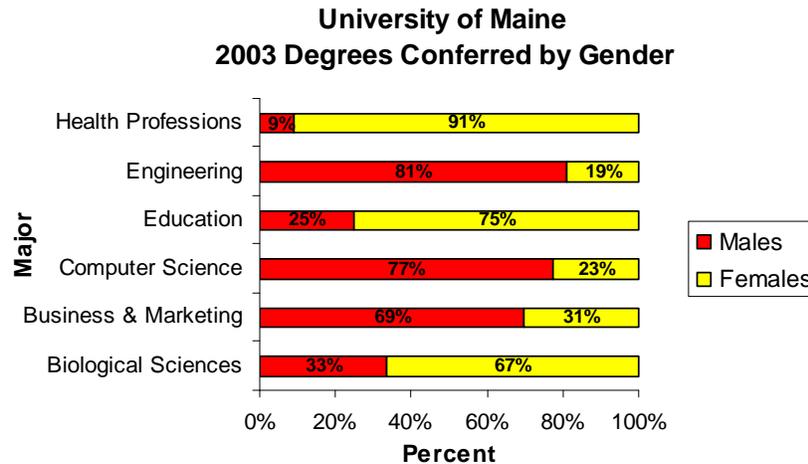


Figure 16 shows that, of the bachelor’s degrees conferred in 2002 and 2003 at the University of Maine located in Orono, women earned: less than 20% of engineering degrees; less than 25% of the computer science degrees; and less than 40% of the business and marketing degrees. They earned more than 90% of the degrees awarded in the health professions (which include nursing) and more than 70% of the education degrees.

Figure 16.

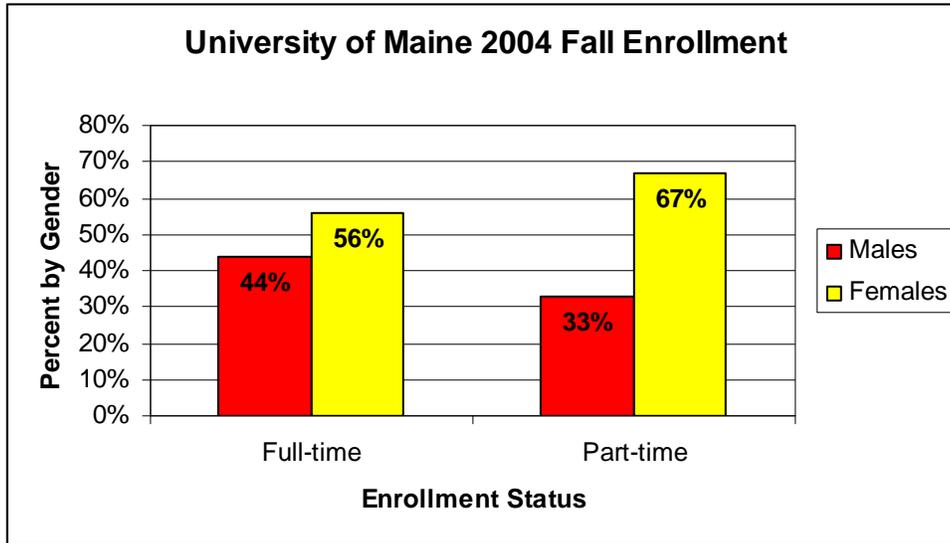


Upon graduation from high school, about 70% of Maine students report that they plan to attend a postsecondary institution, but only 50% of students who graduate from Maine high schools actually enroll immediately in college (Maine Compact for Higher Education, 2005). To get a complete picture of who is enrolling in and completing college, it is important to be able to examine not only students' intentions to enroll when they leave high school but also their actual enrollment rates, rates of persistence (indicating who continues in college), and rates of graduation (indicating who graduates). Because there is no system to track Maine students once they leave high school, it is impossible to follow individual students' progress through postsecondary schools or to know about Maine students' experiences with postsecondary education. However, an examination of University of Maine System (UMS) data and the Maine Community College System data can be helpful, given that large portions of the students there are Maine residents.

It is important to note that students - male or female - whose parents graduated from college are more likely to enroll and persist in college than students whose parents do not have a college degree. This presents a challenge in Maine given that, as of 2004, only 37% of the working-age adult population in Maine had a college degree.

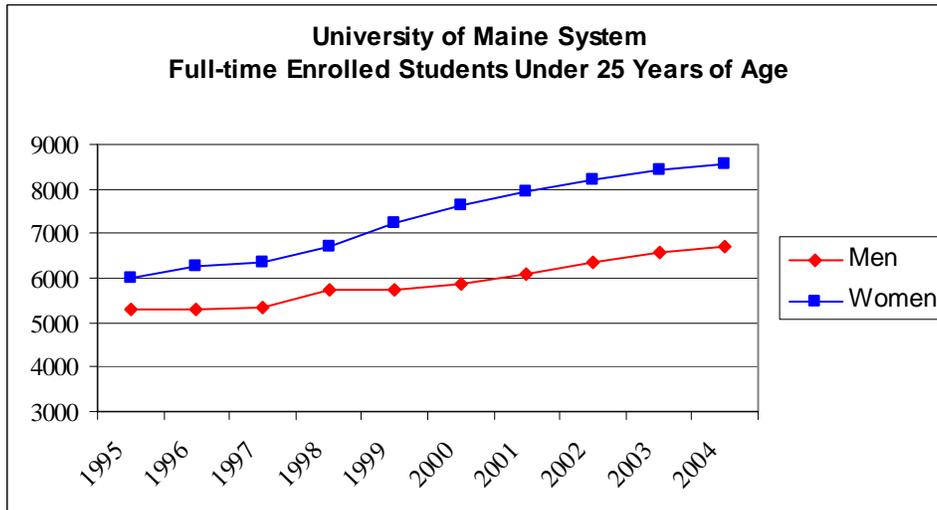
In the fall of 2004, there were nearly 33,500 students enrolled at the University of Maine campuses. This includes part-time and full-time students of all ages. Among these students were 17,371—15,269 full-time and 2,102 part-time—undergraduate students under the age of 25. Women represented a higher percentage of both full-time and part-time students in this age demographic as shown in Figure 17.

Figure 17.



A look at the enrollment statistics for the last nine years shows that the number of men and women under the age of 25 enrolled in undergraduate programs at the University of Maine campuses has increased for both men and women. However, the increase for women has far outpaced the increase for men (Figure 18). Women’s full-time enrollment has increased by 43% while men’s enrollment has increased by only 27%.

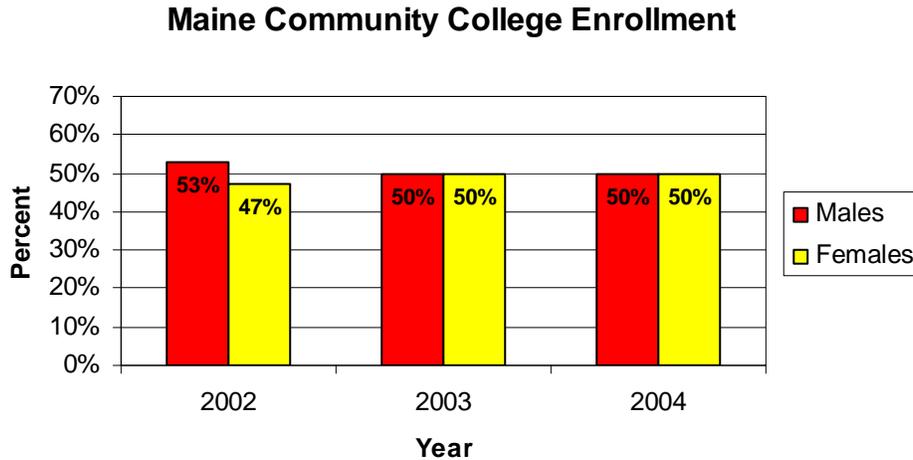
Figure 18.



Another postsecondary option for students in Maine is the Maine Community College System (MCCS). The MCCS offers two-year degrees in over 300 programs at its seven campuses. In fall 2005, 12,473 students enrolled at a MCCS campus; 10,680 of these students were enrolled

in a degree program. Between 2002 and 2004, MCCS has had approximately the same number of males and females enrolled at their campuses (Figure 19). Data on the number of full-time students under the age of 25 years by gender was not available, so these data cannot be compared to the University of Maine System data.

Figure 19.

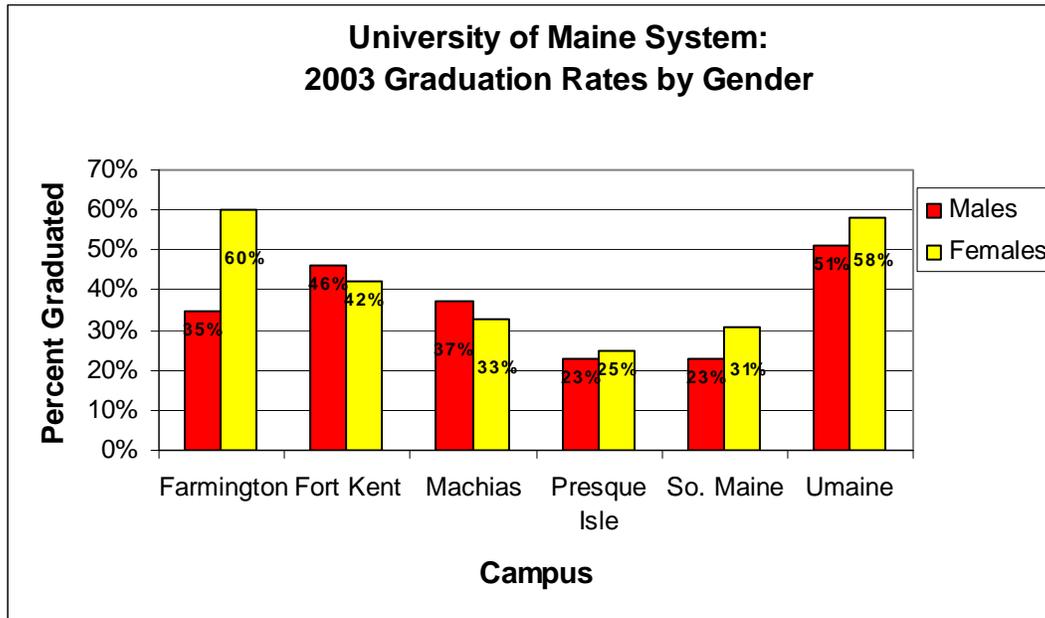


Postsecondary Graduation

More women are enrolled in Maine colleges than men, and more women earn degrees at Maine colleges. In 2003, between 23% and 60% of students attending campuses in the University of Maine System graduated within five years of enrolling. The gender gap in graduation rates also ranges from 4 percentage points at Fort Kent, where more male than female students graduate, to 26 percentage points at the Farmington campus, where more female than male students graduate (Figure 20).

With the exception of the University of Maine at Farmington, the gender gap in graduation rates was less than 8 percentage points. At the largest campus, the University of Maine located in Orono, the gender gap was 7 percentage points, with 51% of male and 58% of female students graduating within five years.

Figure 20.



Caution is urged when interpreting graduation rates. Graduation rates tell us the proportion of students who graduate from the same institution within a certain time of enrolling. However, they do not account for students who left the institution. Some of the students who enroll but do not graduate from an institution may have transferred to another institution and later graduated from that institution. For example, a student who initially enrolls at the University of Maine at Farmington then transfers to and graduates from the University of Maine in Orono is not counted in either institution's graduation rate.

The Intersection of Gender and Socioeconomic Status

A young person's socioeconomic status has a significant impact on his or her aspirations, planning and preparation to attend college. The Mitchell Institute study (2002) found that students with higher college aspirations came from families that were more highly-educated and also families that were wealthier. In many instances, a student's aspirations to attend college had been fostered over a lifetime by more educated parents and/or siblings. The study also found that in homes where parents did not go to college there was less discussion about college and less ability to handle the many facets of college preparation.

The study did find a small percentage difference between boys and girls in college planning. Although boys and girls were equally likely to report that they have college-educated parents, boys with college-educated parents are less likely than their female counterparts (88% compared with 93%) to report that they plan to enter postsecondary education after high school.

Information on family income collected on the SAT application may offer some additional insights. It appears that as family income rises, so do SAT scores. A higher proportion of boys than girls report an annual family income above \$60,000. This may explain why boys score higher on the SAT despite reporting lower grades. However, caution regarding this interpretation is urged, since 40% of students do not report family income.

Thomas Mortenson, a public policy analyst from The Pell Institute for the Study of Opportunity in Higher Education, offers some insights regarding gender, socioeconomic status, and undergraduate enrollment. He found that as family income rises so does the percentage of male undergraduates. At the lowest income bracket (\$0 to \$34,288), boys represented 44% of the undergraduates. but at the highest income bracket (\$62,241 to \$95,006), they represented 52% of the undergraduates in the United States. Mortenson concludes that the "scarcity of males in higher education has strong class-based roots."

Graduation rates at Bates, Bowdoin, and Colby Colleges, the three largest private postsecondary institutions in Maine, further call into question assumptions that gender alone can account for gaps in graduation rates. In 2003, men were more likely than women to graduate within five years from Bates. At Bowdoin, during the same year, graduation rates for females were only a half percent higher than for men, and at Colby 4.5% more women than men graduated within five years. These graduation rates, when compared to the University of Maine System campuses where more students receive financial aid, suggest that SES status is a factor in college graduation rates for males. Maine needs to explore the apparent gender gap in higher education enrollment by SES status to determine if the same pattern is evident among Maine boys. Data also need to be analyzed to determine if girls from lower income families are enrolling in college at a rate that is proportional to their representation in the traditional college-age Maine population.

Although the percentage of minorities in the University of Maine System is low, race/ethnicity should be considered when examining graduation rates. At the University of Maine, 55% of the White students remained at the institution and graduated in 2003 while

only 35% of minorities did so. Nationally, the disparity in rates of males and females enrolled in college and obtaining degrees is greatest among Latino and African American youth with women far outpacing men (Peter & Horn, 2005).

Discussion

The differences between the number of boys and the number of girls who take the SAT will likely decrease now that all Maine 11th graders will take the SAT, which now contains a writing section that apparently favors girls, replacing an analogies section thought to have favored boys from families that were not low-SES.

Next, data show that females are pursuing postsecondary education in larger numbers than males. There is a need for further exploration of which boys are not pursuing a postsecondary education. How do boys from low-SES families compare to boys in economically advantaged families in their pursuit of postsecondary education? Is this an issue of gender, socioeconomic status, or a combination of factors? It is also important to learn whether or not girls from low socioeconomic families are represented proportionally in the ranks of Maine college students. This type of information will help in focusing strategic efforts to encourage more boys to attend college.

Another issue which surfaced in the Maine data is the fact that while more female students pursue college, they continue to cluster in traditional female-identified fields of study—education, social work, and nursing. Female students still represent only a small portion of those pursuing degrees in engineering, mathematics and computer sciences, despite the fact that boys and girls have comparable MEA scores in Mathematics and Science and Technology.

Conclusions

There is a need to further gather and/or analyze data to determine which boys and which girls are pursuing postsecondary education and to further research boys' decisions about postsecondary education to learn: (1) which boys are opting out of postsecondary education; (2) when do they make this decision; and (3) what factors influence their decision.

Chapter 5

Social Constructs of Gender

Is it a boy or a girl? It is a familiar first question when one hears of the birth of a child. We ask this question not only because we are curious, but because gender is such a profoundly significant organizing concept in society. If we know the gender of the child, we can associate traits with him or her. Gender is not simply a person's biological sex; rather, it is the behavioral, cultural, or psychological traits typically associated with one's sex. Learning what it means to be male or female begins at birth and continues throughout one's childhood and adolescence and into adulthood. What it means to be male or female can differ according to a person's family, culture, race/ethnicity, and background. However, we believe that all boys growing up in the United States are confronted with the dominant construct of masculinity in the majority society just as all girls are confronted with the dominant construct of femininity. Students bring their understandings about being male or female to school with them. Therefore, it is critical to understand these perceptions of gender if we are to work toward understanding the gender gap, identify the factors that contribute to this phenomenon, and promote practices that will lead to achieving gender equity in our schools.

Masculinity

In the social sciences, masculinity is defined as a cultural idea of what it means to be a boy or man and is usually defined in terms of personality traits and behaviors. To be a boy or a man is to play a particular kind of social and cultural role, to participate in social life as a "gendered being" (Kimmel & Messner, 2004). Clearly, there are different ways to be a boy or man—i.e., there are "multiple masculinities" at play in many different contemporary cultures. Moreover, there are also multiple ways for an individual boy or man to "perform" his understanding of masculinity, and these may change depending on the situation in which he finds himself (Kimmel, 2000, 2005; Tappan, 2001). For example, a boy may act differently with his peer group than with his family. When he is with his family, he may be encouraged to talk about his feelings, but when with his peer group, he may be expected to suppress his feelings.

Regardless of how different boys enact or perform masculinity in our communities and in our schools, they may be faced with an interpretation of "traditional" or "conventional" masculinity, which may be reinforced inadvertently by educator behavior—the social construction of masculinity most dominant in the contemporary United States. This consists of an interrelated set of attitudes regarding how a "real man" should act in relation to self and others (Pleck, 1981). It includes attitudes about "status" ("A man always deserves the respect of his wife and children."), "toughness" ("A young man should be physically tough, even if he's not big."), and "antifemininity" ("It bothers me when a guy acts like a girl.") (Pleck, Sonenstein, & Ku, 1993).

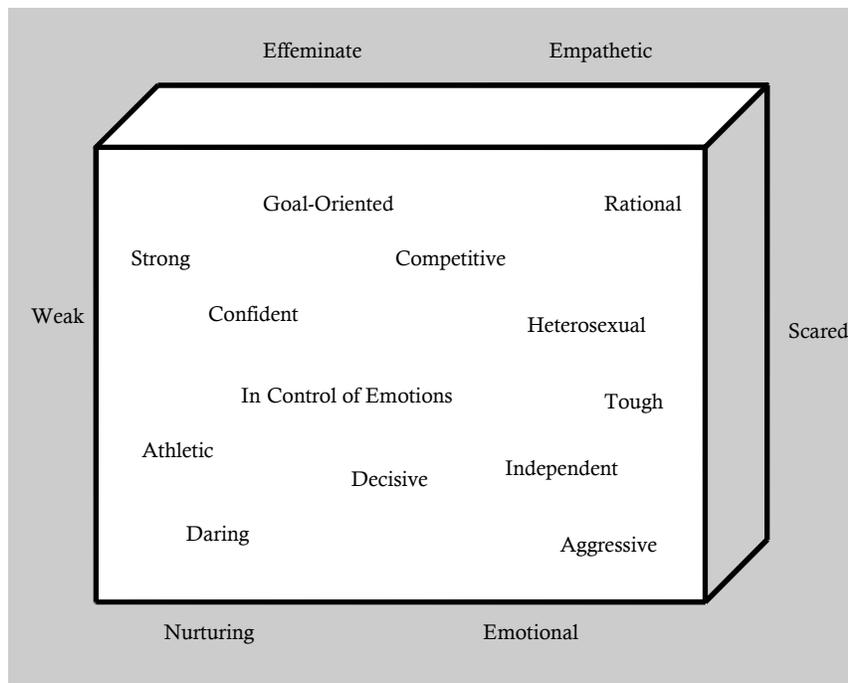
Boys encounter these attitudes and ideologies very early in life. They learn, in particular, that to be a boy means to be the opposite of a girl, to move away from anything associated with the feminine or even perceived to be feminine. William Pollack (1998) labels this the “boy code.” The boy code includes the following four principles.

- Be a “sturdy oak”— Boys must be strong and independent and never display weakness, vulnerability, sadness, or pain.
- “Give ‘em hell”— Boys must show bravado, self-assurance, extreme daring, and be attracted to risk and violence.
- Be a “big wheel”— Boys must achieve status, dominate, avoid shame at all costs, act tough, and act as if everything is under control.
- No “sissy stuff”—Boys must refrain from expressing feelings viewed as “feminine” such as warmth, empathy, and caring.

The boy code thus highlights the fundamental paradox in the lives of boys and men. On the one hand it represents an initiation ritual, of sorts, into a life of male privilege, power, and status. On the other hand, it represents a set of pressures and constraints that serve to truncate and limit the emotional and social lives of boys and to make many boys feel ashamed, afraid, and powerless. Both sides of this paradox—the privileges and the pressures—must be acknowledged to completely understand the experience of contemporary boys and men in schools and in society at large (Tappan, 2005).

The boy code, however, also boxes boys in, limiting the range of acceptable feelings and actions, and exerting pressure on boys to act and be a certain way. Inside this box are the characteristics sanctioned by the culture for boys, while outside the box are the characteristics that are unacceptable for boys. And herein lays a major problem.

The Boy Box



Boys learn early in their development that if their emotions and behaviors fall outside the box, they risk ridicule and rejection, and they are subjected to being labeled “sissy,” “nerd,” “wimp,” and “gay” (Flood & Shaffer, 2000; Gilligan, 2001; Kimmel, 2000; Kindlon & Thompson, 2000; O’Connell, 2005; Pollack, 1998). They risk being degraded and humiliated but they also can become the victim of bullying, harassment, and physical violence (Gilligan, 2001). As they enter middle school and move through high school, they are subjected to increasing pressure to conform to society’s ideal of masculinity. Boys who express emotion or display characteristics considered feminine, and boys who participate in activities or have interests in topics associated with femininity or seem effeminate are at an even higher risk of being harassed and bullied and even assaulted (Gilligan, 2001; Kindlon & Thompson, 2000). Boys police each other’s behavior to ensure conformity to the ideals of masculinity. Most of all boys must prove their heterosexuality to each other, which often requires denigrating girls or other boys who do not conform to the boy code.

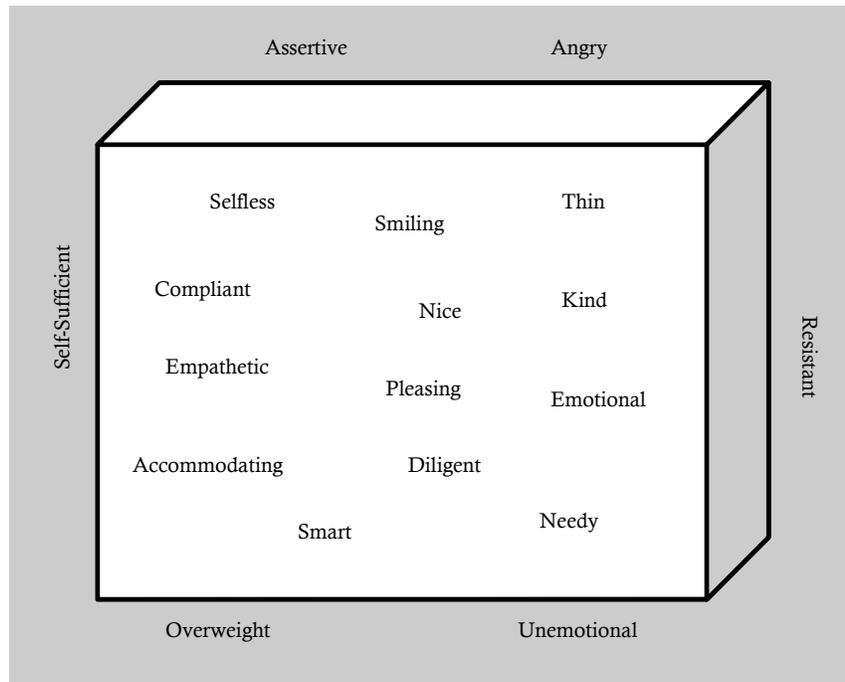
Without access to a full range of emotion, boys risk becoming emotionally illiterate, a condition in which they are unable to recognize their own or other’s feelings (Kindlon & Thompson, 2000; Pollack 1998; Real, 1997). Adherence to the boy code can also lead boys to be depressed, to bully, to abuse alcohol or drugs, or to act in an aggressive and even violent manner (Pollack, 2000). Sadly, doing well in school may be one of the qualities that lies, for many boys, outside the boy box.

Femininity

As with masculinity, femininity is defined as a set of cultural ideas that manifest in personality traits and behaviors, and socially constructed ideas about what it means to be a girl or woman. And just as for boys and men, there are different ways girls and women perform or model femininity, depending on the situation and social or cultural context. Idealized or conventional femininity is associated with caring for others, acting in ways that are relationally pleasing to others (always smiling, accommodating others’ needs), and concern about one’s appearance (e.g., body size, make-up, and clothing).

Just as there is a code for boys that can box them in, so too is there is a “girl code” operating in our schools and in our society. The girl code demands that girls be selfless, even to the point of repressing their own thoughts, wishes, and needs. They are encouraged to silence their voice so they do not “hurt” another’s feelings (Brown & Gilligan, 1992). Much focus is placed on girls’ bodies and their sexuality. Girls’ receive confusing messages from society about the importance of being sexually attractive to boys and men but if judged by others—peers and adults alike—to be too sexually attractive or assertive they risk being negatively labeled.

The Girl Box



Like boys, girls experience increased pressure to conform to conventions of femininity at middle school. It is at this age that the dynamics of hostility among girls--the meanness, harassment, and fighting in which girls engage--increases. Brown (2003) explains that these behaviors are often girls' responses to the unfairness and injustices they see around them. Still, like boys, girls are subject to prevailing (largely white and middle class) interpretations of femininity. This sense of unfairness arises out of increased pressure in middle school to conform to cultural constructs of femininity as well as increased surveillance of their behavior and their bodies by both boys and girls. These constructs and pressures prescribe how girls should think, feel, and act in order to be the right kind of girl (see also Brown, 1998; Brown & Gilligan, 1992; Tolman, 2003).

Researchers studying girls find that conventional femininity, taken in and expressed in the form of idealized or inauthentic relationships and body objectification, is associated with psychological trouble for girls (Brown & Gilligan, 1992) and correlated with lowered self-esteem and higher rates of depression (Tolman, Impett, Tracy, & Michael, in press).

Because traditionally masculine qualities are imbued with power in our culture, researchers suggest that girls have increasingly crossed traditional gender lines. A spate of studies in the 1980s and 1990s revealed many negative psychological, social, and educational consequences of the socialization and many gender biased school practices that disadvantaged girls. Awareness of these studies resulted in parents who wanted their daughters to have access to equal benefits and experiences, encouraging girls to become more outspoken, competitive, and entitled. The modern construct of femininity is increasingly marked by this fluidity and diversity in gender expression (Fine & Macpherson, 1992; Fordham, 1993).

The Intersection of Gender and Socioeconomic Status

Gender research is becoming more complex as other influences upon the development of students' concepts of masculinity and femininity begin to be addressed. The intersection of culture, gender, and the fact of one's biological being is only just beginning to be sorted out, but much of what girls see in the popular media and from adults in their lives encourages and rewards particular forms of feminine expression. It has been noted that girls who stray too far from these feminine ideals--particularly those that focus on sexuality, assertiveness, and physical appearance--draw adult concern and negative peer attention (Brown, 2005). The culture of Maine's traditional, rural, low-SES and working class communities has also been perceived to limit the opportunities of young women in the past. This may be changing, albeit slowly.

In *Raising Their Voices* (1998), Lyn Brown did a comparative social class analysis of suburban, middle-class and rural, low-SES girls in Maine. Her findings were that the low-SES girls had a definition of femininity that included being outspoken and having survival skills (which sometimes included fighting--physically--for what they needed or to protect themselves and others of their group). For this reason, they were often in trouble in school.

The middle-class, suburban girls also struggled with a limiting stereotype of femininity, but for different reasons; they felt pressure to adopt an idealized identity and to hide signs of anger and aggression. The difference was that they were already good at doing this outside of school. The low-SES girls had a much different home and community training and thus their social or cultural capital didn't assist in their struggles at school; it often put them at odds with their teachers and school rules.

Lisa Delpit, in her book *Other People's Children* (1988), gives the following example of possible misunderstanding arising out of cultural differences of the types described above. A middle class female teacher says to middle class girls, "Would you like to open a window?" Those girls know that this is not a question but a request to open the window. When the same question is asked of working class girls, they think they are being given a choice. If they say no, then they are in trouble. But they don't really understand why

The “Nature versus Nurture” Debate

In discussions of differences in the academic performance of boys and girls, the “nature versus nurture” debate has traditionally entered the conversation. This is coming to be seen as a simplistic separation of two forces that mediate each other in modern boys and girls. The distinction has been framed as being between those characteristics of a person that are a biological reality and those aspects of personality that are developed through exposure to a culture. One perspective presumes that male hormones (biology) are a stronger determinant of character than how we raise and care for our boys. This may be an issue of particular importance in middle school, when boys are maturing both sexually and socially. Often the

“boys will be boys” assertion is not applied until boys enact stereotypical masculine behavior. However, while male hormones might have an effect on boys’ activity level, this does not necessarily mean that they lead to aggression. William Pollack (1998), an assistant clinical professor of psychology at Harvard Medical School, Director of the Center for Men and Young Men at McLean Hospital, and author of *Real Boys: Rescuing our Sons from the Myths of Boyhood*, states that

The level of testosterone in any boy—and the way the testosterone affects him—has less impact on his behavior than how the boy is loved, nurtured, and shaped by his parents and by the context of the society within which he lives. The hormone may well predict a certain type of energy in boys. But the way in which that energy is funneled and expressed lies in our hands. (p. 56)

But the “nature versus nurture” debate is far from a closed subject. In recent years, the increasing sophistication of brain scan technology has made it possible to examine neural activity linked to emotion and behavior. In addition, emerging research suggests that physiological differences account for subtle differences in boy and girl behavior, and that those differences must be taken into account in developing truly responsive educational environments for boys and girls. Upon a review of a draft of this report in November of 2006, Dr. Pollack indicated that emerging research suggests that social and biological influences mediating the learning process for boys and girls are complex and interrelated.

As science reveals more about the function of the brain, educators and parents will need to reassess traditional understandings of the “nature versus nurture” debate. Attributing difference to biology alone risks removing responsibility for ensuring that all children succeed academically and are physically and emotionally healthy (AAUW, 2000). Michael Kimmel (2001), professor of sociology at State University of New York-Stony Brook and author of several books on masculinity including *The Gendered Society and Manhood in America: A Cultural History*, summed it up best when he said,

“I can think of no trait whatsoever that only boys categorically have and girls don’t or that girls categorically have and boys don’t. What we know is that girls as well as boys are hardwired to be competent, creative, and competitive. What we know is that boys as well as girls are hardwired to be caring, nurturing, and compassionate. The question is not whether or not we are hardwired. I agree that there are hardwired traits. The question is which traits do we value and nurture in which gender that makes these relatively related people seem so different.” (p.25)

The “nature versus nurture” debate will no doubt persist as scientists and researchers continue to uncover more about human behavior and its underlying physiological basis. It will be important for educators and policymakers alike to monitor research findings that could have an impact on educational practice. Most importantly, educators and parents must ensure that each child be permitted to develop, free from restrictive gender stereotypes. If such stereotypes and beliefs are allowed to govern expectations about boys and girls, the ability to find the unique capacity in each child will be restricted, and that capacity diminished.

The Task Force promotes the beliefs that: (1) good educational practice honors and supports the possible range of traits in both girls and boys suggested by the material presented in this report; and (2) educators need to challenge stereotypical thinking and behaviors in order to help students expand their thinking about what is possible for them to achieve.

Gender Equity In Education: What Does It Mean?

The ultimate goal of this report is to suggest policies and strategies to promote gender equitable education. Given this goal, it is important that we understand what we mean by “gender equity.”

Gender equity is often confused with gender equality. Achieving gender equality in school requires that we provide the same resources and opportunities to all students regardless of their gender. This is a relatively simple task in comparison to creating gender equity in our education system. Gender equity goes beyond the expectations for gender equality. Gender equity ensures that boys and girls are given the necessary supports to achieve the same standards of excellence. Equity acknowledges that boys and girls may need different supports to achieve these outcomes. Furthermore, different subgroups of boys and girls, such as those of low socioeconomic status or those from different racial/ethnic backgrounds, may need further supports to achieve the same outcomes.

Gender equity ensures that all students have the support and resources needed to achieve the same standards of excellence.

Characteristics of Gender Equitable Schools

- (1) Students have the same opportunity to learn irrespective of gender, socioeconomic status, or race and ethnicity.
- (2) Boys are actively encouraged to engage in language arts, and their interests are represented in curriculum materials; girls are actively encouraged to engage in advanced Mathematics, Science, and technology courses, and their potential for success in careers in these fields is emphasized.
- (3) Students feel safe and comfortable in school, and respected by other students and staff regardless of gender, socioeconomic status, or race and ethnicity.
- (4) Stereotyping of persons through traditional constructs of masculinity and femininity is discouraged.
- (5) Educators and administrators are knowledgeable about gender issues and strategies for creating gender equitable classrooms and school environments, and are supported in implementing these strategies.
- (6) Gender diversity exists among staff and administrators.

Barriers to Gender Equity

Achieving gender equity is a sizable challenge to which there are many barriers. The issues described below—lack of awareness, privilege, and social capital—are some of the variables that add to this challenge.

Lack of Awareness

Conventional ideals of masculinity and femininity are invisible not only to young people but also to many adults. Most individuals or groups rarely examine or challenge these ideals, which limit boys and girls, as well as men and women. They are taken for granted as they are “normal.” Unless one has been encouraged to examine the ways our society constructs masculinity and femininity, it is difficult to comprehend the many ways in which these social constructs and the pressure to conform to them can limit individuals. Furthermore, if educators are not aware of how gender affects the students they teach and the environment in which they teach, it’s likely that they will unwittingly reinforce stereotypical behavior and attitudes regarding masculinity and femininity.

Privilege

Privilege is a concept that is integral to understanding diversity issues, including gender. Privilege is a benefit or advantage one has in comparison to other individuals or groups. These benefits and advantages come in two forms: “unearned entitlements” and “conferred dominance” (McIntosh, 1990). Entitlements are rights that all people should have by virtue of being human—such as feeling safe and free from violence and harassment, the ability to earn a fair wage for one’s labor, etc. These entitlements become a form of privilege—what McIntosh calls “unearned advantages”—when they are restricted to certain groups of people. “Conferred dominance” occurs when one group has social, political, or economic power over another group or groups, based on cultural assumptions about who should be in power, in control, occupy high-status positions, etc. These cultural assumptions, moreover, are often entrenched in social and political structures and systems that serve to maintain longstanding patterns of hierarchy, dominance, and control.

Privileged groups often do not recognize their own privilege and even deny having privilege. Allan Johnson (2001) explains that we often fail to recognize our own privilege because when we compare ourselves to other groups we tend to look on each side of us and above us, not at those below us in the hierarchy.

With respect to gender, boys and men have traditionally enjoyed a wide range of social, political, and economic privileges, advantages, and forms of dominance in our society that girls and women do not. For example, young men entering the workforce with a college degree will often earn more than a young woman entering the workforce with the same level of education even if they have the same field of study (Peter & Horn, 2005). A social instance of gender privilege occurs when a woman’s contribution to a group discussion is ignored but later recognized by the group when a man repeats the suggestion.

Social Capital

First used as an economic construct in the early 1900s, social capital was described as “tangible assets that count for most in the daily lives of people: namely, good will, fellowship, sympathy and social intercourse among the individuals and families who make up a social unit” (Winter, 2000, as cited in Pooley, Cohen & Pike, 2005, p. 72). Contemporary theorists now utilize the concept of social capital in a variety of fields and contexts.

Most research on the subject agrees that social capital is the integration of relationships between individuals and groups or networks involving concepts such as trust, reciprocity, density and membership in groups, and positive emotion. Social capital also refers to individual competencies—an individual’s self-esteem and self-efficacy, and the individual’s capacity to interact with his or her environment from which individuals and/or groups can gain resources (Brisson, 2005; Paxton, 1999; Pooley et al., 2005). These connections, in turn, affect well-being or quality of life, including social mobility, homeownership, educational attainment, and young adult success (Brisson, 2005; Paxton, 1999; Pooley et al., 2005; Furstenberg & Hughes, 1995; Stone, 2000).

Income status can have an effect upon social capital in many parts of the country. Students from higher socioeconomic status families often have greater opportunities and incentives that directly promote educational attainment. Parents in professional or managerial careers can guide children toward higher education and develop and maintain social networks that enhance well-being and contribute to academic success (Coleman, 1988). Furstenberg & Hughes’ (1995) longitudinal study suggests that social capital does help students find their way out of low-SES settings: “Access to social capital might account for within group differences as well as explaining, at least in part, why children growing up in particular families or certain communities are more likely to find their way out of disadvantaged circumstances” (p. 582).

An understanding of social capital and its influence on healthy relationships and individual development is essential for educators to ensure that each student, no matter what his or her gender or socioeconomic status, has the best chance of achieving success in school. Low-SES boys and girls may share certain qualities related to social capital, but may also manifest unique characteristics as well; that is, low-SES boys might have certain key differences from low-SES girls. Given the significant impact of socioeconomic status on academic achievement and social well being, educators’ appreciation of the influence of social capital as a factor for mitigating the impact of SES should be a very high priority.

Chapter 6

Recommendations for Promoting and Achieving Gender Equity

A panel of educators convened by the Maine Department of Education reviewed the Task Force's report, and recommendations drawn from Task Force discussion of both the data represented in this report and national and international research on gender equity in education and contributed to the refinement of the following recommendations:

1. Ensure that educators⁵ are knowledgeable about gender, the ways in which it is socially constructed, and its impact on student achievement and well-being.

- Educators should develop learning circles in their schools or districts. Participants in learning circles read common books and articles and then come together to discuss and reflect on these readings including relationships with their teaching, students, and school environment.
- School administrative units should offer meaningful workshops with follow-up on gender issues that address the ways in which socioeconomic status and race/ethnicity complicate gender issues. These workshops should focus on the exploration of local data and the development of sensitivity to gender issues by drawing attention to behaviors specific to their schools.
- The state should promote collaboration of higher education with elementary and secondary institutions in addressing the academic performance of low-achieving students. This collaboration should result in expanded opportunities for pre-service educators to study the interaction of gender and other factors, including socioeconomic status, in authentic settings.

In conducting research on gender issues at the local level, the process should begin by analyzing school-level data and educational environments, as well as community practices, to identify equity issues.

The results of such research must ultimately be shared with school staff, using the results to prompt discussion. Educators at all levels should work together to identify the key points of the staff's discussions and develop strategies to address troubling disparities and to share these findings and strategies with the community.

2. Build resiliency in young people.

- Educators should help young people identify, name, oppose, and replace harmful messages about femininity and masculinity by the creation of "hardiness zones."

⁵ The panel defined "educator" to include administrators, teachers, aides, consultants and other school staff having regular contact with students.

Hardiness zones are safe supportive places where young people can explore and develop ideas, commit to making changes, and be challenged to take action (Debold, Brown, & Weesen, & Brookins, 1999). Young people need these hardiness zones in order to explore, discuss, and challenge gender constructs and the impact these constructs have on their lives. Every school should create hardiness zones.

- School administrative units should vigorously promote participation in activities other than sports. Recognition of academic achievement and participation in academically oriented extra-curricular activities should occur in the community served by a school; in particular, the participation of boys in such activities should generate at least the same amount of pride for students and their schools as their performance on the athletic field.
- The state should promote the teaching of higher order media literacy skills.

3. Educate students about gender, including social construct of masculinity and femininity.

- Schools and the communities they serve should provide opportunities for students to participate in ongoing discussions about gender issues. At all levels, but particularly at the middle school level, offer same-sex discussion groups for boys to explore masculinity and girls to explore femininity.
- Schools and the communities they serve should challenge students' stereotypical constructs of masculinity and femininity in schools by facilitating discussions and structuring lessons and assignments to address gender issues.
- Schools and the communities they serve should promote resiliency in boys and girls by supporting them in identifying, naming, opposing, and replacing narrow construct of masculinity and femininity.

4. Focus efforts to increase boys' and girls' motivation to succeed academically.

- Educators should vary instructional strategies, including the use of visual, logical, analytical approaches to learning, in order to address the needs of every individual student.
- Educators should allow students to exercise choice and control, support students when they are not successful, challenge students with information that builds upon prior learning, and encourage students to seek solutions to problems and situations. Educators must accept that students have different interests and are motivated in different ways, and they need to challenge openly the norms of masculinity that encourage boys to view schooling and engaged learning as a feminine behavior.

- Educators should make learning experiences active rather than passive wherever possible, providing a variety of tasks, activities, learning opportunities, and materials for student to explore. These experiences might include:
 - debates, role-plays, and simulations to build motivation and interest; and
 - a “modularized” curriculum for boys who need short-term learning goals.
- Educators should provide older role models of the same gender for students who typically perform at a lower level in specific subjects; for instance, males who have excelled in fields involving reading and writing or females who have excelled in math or science should be enlisted to share with students their experiences in school and out.

5. Encourage boys’ engagement in reading and writing.

The following strategies drawn from literacy research are recommended to enhance boys’ engagement in the English language arts, but it is likely that many of these suggestions will also support low-SES girls who are struggling with literacy. These recommendations are directed primarily to classroom teachers.

- Educators should tie reading materials to students’ interests.
- Educators should choose traditional literature carefully, considering length, relevance, and more material that is humorous (have fun with literacy). Honor students’ interests when selecting texts even at the expense of canonical literature.
- Educators should create classroom libraries to make books and other materials readily available for all readers. Offer a broad range of diverse reading materials including a television program’s story treatment, a screen play manuscript, job resumes, comics, former students’ portfolios, children’s books, chapter books, poetry created by previous classes, and brochures from colleges, technical schools, ski resorts, far-away places, car dealerships, sports events, and concerts. Encourage students to become involved in building the library.
- Educators should provide more choice of reading materials including informational texts, magazines, newspaper articles, graphic novels and comic books, books about hobbies and sports, science fiction, and fantasy.
- Educators should capitalize on popular books and movies to engage reluctant readers.
- Educators should read aloud and include more science fiction and high action in the choices of reading material.

- Educators should make an effort to recruit male educators or male role models who can model engaged reading. Encourage males in boys’ lives—including fathers, brothers, family friends, and tutors, etc.—to model literacy by reading together with these boys.
- Educators should make reading social.
- Educators should explore diverse ways of having students explore books, beyond just pencil and paper exercises.
- Educators should tackle boys’ avoidance strategies by finding ways of challenging the status politics of peer group culture.
- Educators should plan programs aimed at boys. For example, they could encourage coaches of boys’ sport teams to participate in a Guys Read program and have athletes read to younger children.
- Educators should promote book talks in the classroom about books that include nonfiction selections.
- Educators should bring the study of cultural symbolism into the schools in the form of digital technology.
- Educators should design programs that examine the forms of leisure reading valued by a range of adolescents in the contemporary digital culture.
- Educators should communicate to parents that it is as important to read to young sons as it is to read to young daughters.
- Educators should check homework regularly and provide frequent feedback on progress toward learning goals.

Educators across the curriculum and at all grade levels should review current literature on the teaching of Writing, especially the suggestions made by the National Council of Teachers of English (NCTE).

The strategies listed above are a collection of recommendations based upon the works of Brozo, 2005; Burke, 1999; Freedman, 2003; Kent, 2004; Love & Hamston, 2003; McFann, 2004; Mose, 2000; and Smith & Wilhelm, 2004.

6. Encourage girls to consider career fields in Science, Mathematics, and Technology fields.

The following strategies drawn from research are recommended to enhance girls’ engagement in science and mathematics, but it is likely that many of these suggestions

will also support low-SES boys who are struggling with these subjects and technology. These recommendations are directed primarily to classroom teachers.

- Educators should communicate high expectations and encourage girls to pursue high-level classes in mathematics and science.
- Educators should place mathematics instruction in problem-solving contexts that are socially relevant for both boys and girls.
- Educators should provide female models of women in science, mathematics, engineering, and technology fields.
- Educators should emphasize teamwork and collaboration in the classroom.
- Educators should connect science and mathematics by applying them in relationship to people and to social issues.
- Educators should ensure that curriculum content in mathematics, science, and technology includes examples of women’s accomplishments.
- Educators should practice gender equitable classroom management and instructional practices, following these general guidelines:
 - Promote equal participation by boys and girls in classroom discussions. Vary which students are called on to respond to questions and to share. Do not rely only on those who are quickest and loudest in sharing their contributions;
 - Ensure that girls and boys have equal hands-on contact with equipment; and
 - Challenge both boys and girls to expand upon and communicate their conceptual thinking by presenting and supporting their ideas.

The strategies listed above are drawn from a number of reports, including AAUW, 1995; Britton, 2002; Martin, 1999; Tindall, 2004; and Watt, 2000.

7. Develop strategies to address the social, physical, and emotional issues of gender.

These recommendations, drawn from research, are directed primarily to classroom teachers.

- Educators should create frequent opportunities for girls to discuss body image and nutrition issues, preferably in a single-sex environment.
- Educators should monitor carefully school climate, hallway, and playground behaviors to ensure that overt and subtle forms of harassment are identified and addressed.

- Educators should proactively work with boys to create awareness of stereotypical attitudes and behaviors, in particular those that affect school safety and encourage harassment.
- Educators should utilize community and parent communications to highlight the social, physical, and emotional needs of students of both genders, and develop collaborative programs that provide a consistent set of messages and actions across schools, community, and families.

8. Develop specific strategies across K-12 and post-secondary educational institutions to address the gender gap for young men and to ensure actions are taken to ensure that all college majors are open to both genders.

- Educators should utilize technological tools, including blogs and chat rooms, to stimulate more frequent communication between current male college students and high school boys.
- School administrative units should develop specific programs in high schools that provide role models of current male college students to speak to and mentor boys as they form plans for post-secondary options.
- The state should assist school administrative units in identifying and publicizing schools that show atypical success in addressing the underperformance of specific groups of students in specific subjects.
- The state should include among the highest priorities of the PK-16 Council, the permanent body to replace the PK-16 Task Force, the issue of post-secondary application, enrollment, and graduation, leading to the development of a multi-faceted approach to addressing and correcting the gender disparity.
- The state should promote the identification of males as a target audience in all statewide public information and messaging efforts, including the Maine Readiness Campaign, and ensure that images and models of young men aspiring to and attending college are prominently featured.

It is recommended that, where schools or districts undertake the initiatives listed above, they set realistic, tiered goals – possibly targeting specific grades and then moving on to others. As with all programs for change, it is essential that any professional development of educators be relevant to the context of their schools and that sustained follow-up be a part of the plan. Intrinsic to the recommendations presented here is the belief that schools will need to transform themselves to address the issues raised by this report; an approach to educating every child based upon the individual needs of that child will go a long way towards reversing historic trends of underachievement by certain groups of students. Further, it seems fundamental that promoting higher academic achievement for boys and low-SES girls in the English language arts will require a redefinition of the subject area; reading must be seen as

an integral part of all the disciplines and professions, and writing must be seen as a tool for learning all subjects.

Tracking of students perceived as not having the potential to succeed in college must end, and promoting readiness for higher education, military service, and/or fulfilling work must be a part of the entire elementary and secondary curriculum.

These recommendations will be most effective when considered in the context of an organized and comprehensive approach to dissemination, planning, and implementation. Once this report is published, the Maine Department of Education should conduct a series of regional informational and planning workshops to assist school administrative unit personnel in examining local data in light of this report and in planning for action.

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