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Early Implementation of Public Single-Sex Schools: Perceptions and Characteristics

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Executive Summary

For most of our nation's history, coeducation has been the norm in our public elementary and secondary schools. In recent years, however, interest in public single-sex education has increased substantially. The *No Child Left Behind Act of 2001* authorized school districts to use local or innovative program funds to offer single-sex schools and classrooms consistent with applicable laws. Subsequently, the U.S. Department of Education published amendments to the Title IX regulations in October 2006 that would provide school districts additional flexibility to implement single-sex programs. In anticipation of an increase in the number of public single-sex schools, the U.S. Department of Education contracted with RMC Research Corporation to conduct a descriptive study of existing single-sex public schools that would address the following evaluation questions:

1. What is currently known about the effects of single-sex schooling on student achievement and other outcomes?
2. What is known about the causes of those outcomes?
3. What are the characteristics of public single-sex schooling? What are the contextual, instructional, and behavioral practices unique to single-sex schools?
4. What perceived benefits or disadvantages are associated with single-sex schooling?
5. What studies, including research questions and methodology, would be most appropriate to advance the knowledge base in this field?

To address these questions the study includes a systematic review of the literature available in 2004, a survey of public single-sex schools, and a preliminary exploratory observational study of a subsample of currently operating public single-sex schools. The observational study was designed to yield three types of descriptive information about single sex schools: the schools' demographic characteristics, the professional characteristics of the teachers and principals, and the teachers' and principals' perceptions of the school characteristics. Both the survey and the observations were confined to those single-sex schools that were operational as of fall 2003.

Although the study describes characteristics that are somewhat more prevalent in single-sex schools, the results are not causal evidence that single-sex schools improve the quality of academic and behavioral interactions between teachers and students. Instead, these descriptive findings are a potential source of hypotheses for further investigations that utilize experimental or quasi-experimental designs.

Key findings that emerged from the study include:

- The results of the systematic review are mixed, though the findings suggest some support for the premise that single-sex schooling can be helpful. Among the concurrent academic accomplishment outcomes, 53 percent were null (favored neither single-sex nor coed schooling), 10 percent had mixed results across sex or grade levels, 35 percent favored single-sex schooling, and only 2 percent favored coed schooling. Among the concurrent

socio-emotional outcomes, 39 percent were null, 6 percent were mixed, 45 percent favored single-sex schooling, and only 10 percent favored coed schooling.

- The site visit observers in the eight single-sex school sites found little evidence of substantive modifications to curricula to address the specific needs of either boys or girls, although some teachers who were interviewed provided examples of using support materials specific to the interests of girls.
- In the eight elementary and middle schools visited, site visitors observed more positive academic and behavioral interactions between teachers and students in the single-sex schools than in the comparison coed schools.
- Both principals and teachers believed that the main benefits of single-sex schooling are decreasing distractions to learning, and improving student achievement.
- Teachers cited greater benefits of single-sex schooling for girls than for boys in 5 of the 10 benefit categories. That is, teachers believed that girls benefit more than boys from better peer interactions, a greater emphasis on academic behaviors, a greater degree of order and control, socio-emotional benefits, and safe behavior. Teachers believed that both sexes benefit equally from single-sex education in terms of a greater sensitivity to sex differences in learning and maturation.
- In separate focus groups, both parents and students cited essentially the same benefits as the teachers and implied that they chose the single-sex school for these reasons.
- Teachers in single-sex high schools rated problems with student behavior as less serious than teachers in coed schools, but the opposite was true in middle schools. There were no statistically significant differences between single-sex and coed school teachers' ratings of problems at the elementary school level.
- In the 10 case study schools the site visitors observed more positive student interactions for the single-sex schools than for the coed comparison schools. Compared to students in the coeducational schools, students in elementary and middle single sex schools exhibited a greater sense of community, interacted more positively with one another, showed greater respect for their teachers, were less likely to initiate class disruptions, and demonstrated more positive student role modeling than students in the coed comparison schools. (The site visits did not include a coeducational comparison high school.)
- The research team suggests that future research use prior empirical work (both qualitative and quantitative) to identify variables that should be measured and potentially used as statistical controls. Researchers should randomly assign students who wish to attend single-sex schools to single sex or coed schools and plan on following the study participants over a relatively long period of time. A longitudinal study will yield data that researchers can use to evaluate both the effects of any randomization failure and the relative effects of attending a single-sex school.

Systematic Literature Review

The systematic review of the literature on single-sex schooling[1] identified 40 quantitative studies that met criteria requiring studies to at least use comparison studies with statistical controls in addition to quasi-experimental and experimental studies. These 40 studies were the highest

[1] http://www.ed.gov/rschstat/eval/other/single-sex/index.html (2005).

quality research currently available on the topic. (Over 300 other studies were examined and excluded from the review because they did not meet the selection criteria.) The 40 studies provided 112 outcomes because most studies examined more than one outcome. Most of the 112 outcomes were in two areas: short-term academic achievement (43 outcomes) and short-term socio-emotional development (49 outcomes).

The results of the literature review were mixed, though the findings suggested some support for the premise that single-sex schooling can be helpful, especially for certain outcomes related to academic achievement and more positive academic aspirations. The literature review did not, however, include any public single-sex schools in the United States; thus the findings should not be generalized to this population. In addition, the studies had some analytical weaknesses that may have inflated the statistical significance of their findings. Overall, there were more socio-emotional outcomes favoring single-sex schools than academic outcomes favoring single-sex schools. In addition, more socio-emotional outcomes favored girls in single-sex schools (70 percent of 30 outcomes) than boys in single-sex schools (40 percent of 25 outcomes). It should be noted that the studies included in the literature review all involved matched comparison designs and none were random assignment experiments, the "gold standard" of evidence for assessing the impact of an educational intervention.

Exhibit ES1
Summary of Systematic Literature Review Findings

Outcome Measure Category and Topic	Total Outcomes	Percentage of Outcomes			
		Pro-SS	Pro-CE	Null	Mixed
Concurrent Academic Accomplishment	43	35%	2%	53%	10%
Long-Term Academic Accomplishment	4	25%	0%	75%	0%
Concurrent Adaptation and Socio-Emotional Development	49	45%	10%	39%	6%
Long-Term Adaptation and Socio-Emotional Development	10	50%	20%	30%	0%
Perceived School Culture	4	50%	0%	50%	0%
Subjective Satisfaction	2	50%	50%	0%	0%
Total	112				

Note. SS = single-sex. CE = coed.

Exhibit reads: *A total of 43 outcomes were reported across all studies in the area of concurrent academic accomplishment, and 35 percent of those outcomes were pro-single-sex education, 2 percent were pro-coeducation, 53 percent were null (indicating no differences between single-sex and coed schools), and 10 percent were mixed (supporting single-sex schools or coed schools for some but not all subgroups).*
Source: *http://www.ed.gov/rschstat/eval/other/single-sex/index.html (2005).*

Data Sources for Surveys and Site Visit Observations

Survey and observation data provided information on the characteristics of public single-sex schooling in the United States. The study team distributed surveys in February 2005 to principals and teachers in 19 of the 20 single-sex schools in operation in fall 2003.[2] The recipients included four elementary schools, five middle schools, four combined middle and high schools, and six high schools. In 17 of these schools, the students were predominantly nonwhite, and in 18 of the 19 schools most students were eligible for free or reduced price meals. Only 6 of the schools were in operation prior to 2000 (see Exhibit ES2).

All but one of the principals returned the principal survey (95 percent), and 88 percent of the teachers returned the teacher survey for a total sample size of 18 principals and 478 teachers. To draw comparisons between single-sex and coed schools, the study team analyzed Schools and Staffing Survey (SASS) data from 1999–2000 and 2003–04 from 150 demographically similar coed schools (the sample included 146 principals and 723 teachers). The study team used a propensity score analysis to derive a subsample of the nationally representative SASS sample that best matched the single-sex schools on several demographic characteristics.

To gather more qualitative information to describe the characteristics of single-sex public schools, observation teams visited eight single-sex and two coed schools. The study team attempted to recruit two single-sex schools and two matching coed schools at each level (elementary, middle, and high school) for site visit observations. Principals of the single-sex schools suggested coed schools in their districts that were most similar to their own schools in terms of student race and poverty level. However, most of the coed comparison schools contacted did not agree to participate. Due to the difficulty obtaining cooperation from comparison schools, the sample contains only two coed comparison schools (one elementary and one middle school). Due to the small number of site visit schools (two comparison and eight single sex), the sample is not representative of single sex or coeducational schools. However, this sample does include 40 percent of the single sex schools that were in existence at that time.

Staff and Student Characteristics

Overall, single-sex and coed school principal and teacher characteristics were similar across the two groups in terms of education. However, teachers in single-sex schools were less likely to be African-American and had fewer years of teaching experience than teachers in the coed schools. Teachers in single-sex schools were also less likely to have standard certification and more likely to have probationary, temporary, or emergency certification. (Note that this information was collected prior to the *NCLB* deadline for meeting Highly Qualified Teacher requirements). Student characteristics were also similar across the two samples, although fewer students in single-sex schools were eligible for free or reduced price meals. The majority of students in both single-sex and coed schools were African-American.

[2] According to the National Association for Single-Sex Public Education, there were 88 single sex schools open in the United States as of fall 2007.

Exhibit ES2
Single-Sex School Survey Respondents

School Location	Grades	Sex	No. of Students	No. of Teachers	Percent Non-White	Percent FRPM	Year Started
New York[a]	K–3	BG	192	18	97	100	2002
Washington	K–5	BG	290	22	98	87	2001
Ohio	K–6	B	250	25	99	99	2003
Ohio	K–6	G	340	30	99	99	2003
Pennsylvania	5–8	BG	1,117	70	96	91	2003
California	5–8	BG	103	7	100	97	1996
Kentucky	6–8	BG	820	49	50	93	2002
Colorado[a]	6–8	BG	320	29	42	29	2003
California	6–8	BG	1,210	42	92	90	1999
Pennsylvania	7–10	B	316	14	100	100	2002
Pennsylvania	7–10	G	268	14	100	100	2002
Illinois[a]	7–12	G	327	30	86	69	2000
New York	7–12	G	400	28	99	84	1996
Ohio	9–11	BG	590	40	94	83	2001
North Carolina	9–12	B	60	10	—	—	2003
North Carolina	9–12	G	95	9	96	90	2003
Wisconsin	9–12	G	90	6	99	94	1975
Pennsylvania	9–12	G	1,194	55	86	48	1848
Maryland	9–12	G	875	48	86	50	1844
Total			8,857	546			

[a]Charter school. FRPM = free or reduced-price meals. BG = Boys and Girls (or Dual Academy).

Exhibit reads: *The single-sex school located in New York opened in 2002 and serves 192 boys and girls in Grades K–3 and has 18 teachers. All of the students qualify for free or reduced-price meals and 97 percent are nonwhite.*
Source: *RMC Research, Single-Sex School Principal Survey, 2005.*

School Programs

The single-sex schools were more likely than the coed schools to receive Title I funds, but the coed schools were more likely to offer programs for limited English proficient students. The single-sex schools offered more extended day and parent involvement programs than the coed schools, whereas the coed schools were more likely to have drug and violence prevention programs.

Professional Development

The study found few differences in the percentage of teachers and principals who participated in various types of professional development. However, fewer than half of the surveyed single-sex school teachers received any professional development on single-sex education (33 percent at the elementary school level, 24 percent at the middle school level, and 15 percent at the high school level). Professional development on single-sex education was typically limited to a speaker visiting the school or a book presented to the teachers, although in a few cases single-sex education was discussed on a monthly basis.

Perceived Benefits of Single-Sex Schooling

Through principal and teacher surveys and site visit observations, the study team collected data on the perceived advantages and effects of single-sex schooling. Single-sex school teachers and principals listed decreased distractions to learning, improved student achievement, and the ability to address the unique learning styles and interests of boys and girls to be among the top five benefits of single-sex schooling. Generally, both teachers and principals embraced the concept of single-sex schooling.

Sex Differences in Perceived Benefits of Single-Sex Schooling. Teachers also noted differences in single-sex school benefits for boys and girls. Specifically, teachers believed that girls benefit more than boys from better peer interactions, a stronger emphasis on academic behaviors, a greater degree of order and control, socio-emotional benefits, and safe behavior. Teachers perceived that both sexes benefit equally from single-sex education in terms of a greater teacher sensitivity to sex differences in learning and maturation.

School Climate

School climate refers to the sum of the values, cultures, safety practices, and organizational structures within a school and their effects on students. Using data from the single-sex school surveys and the SASS coed school survey sample to compare the two groups on school climate, the study found that teachers in single-sex high schools rated problems with student behavior as less serious and also experienced greater instructional support than coed school teachers. In contrast, single-sex middle school teachers reported less instructional support and more student misbehavior than coed teachers. There were no statistically significant differences between single-sex and coed elementary school teachers on these factors.

Student Interactions and Behaviors

Observation data collected during the 10 site visits were more positive for single-sex schools than for the respective grade level comparison schools in this sample with regard to student interactions and behaviors. Students in the single-sex elementary and middle schools visited exhibited a greater sense of community, interacted more positively with one another, showed greater respect for their teachers, were less likely to initiate class disruptions, and demonstrated more positive student role modeling than students in the coed comparison school sample. Single-sex school staff, students, and parents also emphasized the positive socio-emotional benefits of attending a single-sex school.

Student Academic Achievement and Behaviors

Student achievement data for the single-sex schools are fairly typical of high-poverty schools in which the majority of the students do not meet state achievement standards. According to the principal survey data, 49 percent of students were at or above proficient in reading and 35 percent were at or above proficient in mathematics on state assessments at the elementary school level. At the middle school level, 28 percent of students were at or above proficient in reading and 22 percent were at or above proficient in mathematics. At the high school level these figures were 54 percent and 46 percent respectively.

Researchers visited 164 single-sex classrooms and 45 coed classrooms in eight single-sex and two coed schools. The study team found that students in the single-sex elementary schools were more likely to complete homework than were students in the coed comparison elementary school, but both types of students appeared equally engaged in academic activities. Students in the single-sex middle schools were more likely to be engaged in academic activities and to complete homework than students in the comparison middle school. In the single-sex high schools, students exhibited high levels of engagement in academic activities and homework completion; however, the study did not include a comparison high school. These results must be interpreted with caution because of the small number of schools observed.

Student Extracurricular Activities

Extracurricular activity offerings such as clubs or sports were more limited in the single-sex elementary and middle schools than in their respective coed comparison schools, although students in the single-sex schools stated that the opportunities for them to engage in activities and pursue leadership roles were ample. At the high school level, the array of extracurricular offerings was correlated with school size, and the larger of the two high schools visited offered a wider variety of activities.

Summary

The systematic review of the 40 best quantitative studies lends some empirical support to the hypothesis that single sex schools may be helpful in terms of academic achievement and socio-emotional development. The survey and observational studies found that public single-sex schools served primarily nonwhite, high-poverty students in urban areas. Descriptive evidence from the surveys and site visits suggest that single sex schools may have advantages for both boys and girls in terms of fostering socio-emotional health and promoting positive peer interactions. Other perceived benefits of single-sex schooling cited by teachers and principals include a greater degree of order and control and fewer distractions in the classroom. The study design does not support inferences about the effects of single sex schools on socio-emotional outcomes. Also, because the study was descriptive, the study team was not able to determine whether these socio-emotional benefits had an impact on student achievement. The study team did, however, identify a need for more professional development for teachers on meeting the distinct needs of boys and girls in single-sex public schools.

The report concludes with descriptions of areas of study and methodologies that could further advance research in single-sex schooling. Addressed are both the advantages of randomized trials and strong quasi-experimental designs in future studies of single-sex schooling and the challenges inherent in implementing such studies.

Introduction

For most of our nation's history, coeducation has been the norm in public elementary and secondary schools. Coeducation did not emerge from firm belief in its educational benefits, however, but from financial constraints—coed schools were simply more economically efficient (Riordan, 1990). Recently there has been a resurgence of interest in single-sex schools, both in the public and private sectors (Riordan, 2002).

Single-sex schooling refers to education at the elementary, secondary, or postsecondary level in which males and females attend school exclusively with members of their own sex. This definition also includes *dual academies*, in which males and females attend the same school facilities but all classes are separated by sex. Not included in this definition are coed schools that provide separate classes for males and females only in selected subjects.

Study Background

The *Elementary and Secondary Education Act (ESEA)*, as amended by the *No Child Left Behind Act of 2001*, authorized school districts to use local or innovative program funds to provide single-sex schools and classrooms consistent with applicable law (Title V, Part A, Subpart 3, Section 5131 (a) (23)). As a result of amendments to the regulations for implementing Title IX of the *Education Amendments of 1972* made in October 2006, the number of single-sex schools is expected to increase substantially over the next few years. In anticipation of this expansion, the U.S. Department of Education contracted with RMC Research Corporation to conduct a study of existing single-sex public schools. Initiated in October 2003, the Study of Single-Sex Schools provides the first real look into public single-sex schools in the United States.

The Study of Single-Sex Schools addressed the following evaluation questions:

1. What is currently known about the effects of single-sex schooling on student achievement and other outcomes?
2. What is known about the causes of those outcomes?
3. What are the characteristics of public single-sex schooling? What are the contextual, instructional, and behavioral practices unique to single-sex schools?
4. What perceived benefits or disadvantages are associated with single-sex schooling?
5. What studies, including research questions and methodology, would be most appropriate to advance the knowledge base in this field?

To address these questions, the study team conducted an extensive, systematic review of the research literature in 2004, a review of the theoretical arguments for and against single-sex schools, a survey of public single-sex schools in the spring of 2005, and an observational study of a small subsample of public single-sex schools operating in the fall of 2005. Both the survey and the observations included only those single-sex schools that were operational as of fall 2003.

In order to address the first evaluation question concerning the current body of knowledge about single-sex schools, the systematic review of the literature (Mael, Alonso, Gibson, Rogers, & Smith, 2005a) examined national and international research on the effects of single-sex public

and private education. In conjunction with this review, the authors prepared a separate review of studies that discussed the theoretical advantages and disadvantages of single-sex schools (Mael et al., 2005b). This paper addressed the evaluation question concerning possible causes of single-sex schooling outcomes. The study team organized the findings from this review into 14 theoretical benefits of single-sex education and used these categories to develop questions for the surveys and observations at selected schools. The surveys of teachers and principals addressed evaluation questions concerning characteristics and benefits of single-sex schooling and identified topical areas that should be explored further in the school observations. The observational study also addressed the evaluation questions regarding characteristics, advantages, and disadvantages of single-sex education. In addition, the study team commissioned a paper designed to define what studies would advance the knowledge base in the field.

Although the study describes characteristics that are somewhat more prevalent in single-sex schools, the results are not causal evidence that single-sex schools improve the quality of academic and behavioral interactions between teachers and students. Instead, these descriptive findings are a potential source of hypotheses for further investigations that utilize experimental or quasi-experimental designs.

This report begins with a brief overview of the history of public single-sex schools in the United States. It then summarizes the findings from the literature review, the principal and teacher surveys, and the site visit observations. The report concludes with descriptions of areas of study and methodologies that could further advance research in single-sex schooling. Addressed are both the advantages of randomized trials and strong quasi-experimental designs in future studies of single-sex schooling and the challenges inherent in implementing such studies.

History of Public Single-Sex Schools in the United States

Starting in the late 1980s, educational leaders began to establish single-sex classes as a potential solution to some of the problems in inner-city schools. For example, in 1989 the principal of an elementary school in Rochester, N.Y., established single-sex classrooms for both boys and girls (Riordan, 2002). Parents could enroll their children in a single-sex or coed classroom at each grade level. From the outset the district office was critical of the principal's decision even though the principal had support from teachers, parents, students, and the community. At the time, the school was one of the lowest achieving schools in the state of New York and enrolled predominantly very poor Hispanic and African-American students. In the following years, students in the single-sex classrooms showed greater gains on reading and mathematics tests, higher attendance rates, lower suspension rates, and higher parental participation rates than students in the coed classes.

Efforts to establish public single-sex schools faced opposition in the courts throughout the 1990s. In 1991 Detroit, Mich., school officials proposed to open three academies for African-American boys, but they were determined to be in violation of Title IX. In 1993 school officials in Ventura, Calif., attempted to experiment with single-sex classes, but they too failed in the face of legal challenges (Richardson, 1995; Walsh, 1996). In 1994 a school in Irvington, N.J., established single-sex classes but canceled them due to pressure from opposition groups (Walsh,1996). Opponents of single-sex schools were concerned that single-sex schools and classrooms might

violate Title IX requirements and result in better educational opportunities for one sex than were available for the other sex.

Hubbard and Datnow (2002) described an effort to open 12 pairs of single-sex schools in California in 1997. Governor Pete Wilson established these schools by offering grants to districts to open schools for both boys and girls. By fall 2000 only one pair of these schools remained in operation. Hubbard and Datnow suggested that many of these schools failed because the principals and teachers were not driven by a strong sense of why they were offering single-sex education.

Public single-sex schools have opened at an increasing rate since 1996. By fall 2003 the number of single-sex public schools had grown to 20, and by fall 2007 over 80 single-sex public schools were in existence in a number of states. Single-sex schools in the public sector have adopted different operational models. Under the classic model a school serves either boys or girls only. Often a school is established for one sex but not the other. For example, the founders of the Young Women's Leadership Schools were interested only in establishing schools for girls and did not establish corresponding schools for boys. Another model is the dual academy, in which boys and girls attend the same school but attend classes separately. Dual academies vary greatly with regard to the intermingling of the sexes during nonacademic activities: in some cases boys and girls are permitted to interact in the cafeteria, hallways, and extracurricular activities, whereas in other cases they are not.

This study examined both dual academies and fully separate schools for boys or girls, but single-sex classes within otherwise coed schools were not included. Regardless of which model a school decides to follow, interest in public single-sex education is clearly growing in the United States. Information from this study can be used to inform policy in the area of single-sex education.

Review of the Research on Single-Sex Education

The study team conducted a systematic review of the existing literature on single-sex schooling[3] to address two important evaluation questions:

1. What is currently known about the effects of single-sex schooling on student achievement and other outcomes?
2. What is known about the causes of those outcomes?

The systematic review of the literature provides a historical backdrop for this study's surveys and observations of *public* single-sex schools in the United States. The literature review includes studies from public single-sex schools in other countries and studies of Catholic and other private schools in the United States, but no studies of public single-sex schools in the United States were available for inclusion in the literature review.

Systematic Review Process

The study team (Mael et al., 2005a) began with an exhaustive search of electronic databases and other sources for citations of both published and unpublished studies. This search strategy yielded 2,221 citations. In the first stage of the review the study team excluded studies whose subjects were not schools in English-speaking or Westernized countries that served elementary, middle, or high school students who were completely segregated for all classes. Studies of dual academies that met these criteria were acceptable, but studies of single-sex classes in coed schools were not. This initial screening yielded citations for 379 publications that fit the initial inclusion criteria. The second stage of the review excluded publications such as essays, reviews, opinion pieces, or similar documents and studies that contained obvious methodological problems; only qualitative and quantitative studies likely to meet the coding standards in the third stage were retained. The second stage reduced the number of studies to 114 and coded them as quantitative (88) or qualitative (26).

In the third stage two reviewers used a quantitative coding guide to code each study independently. A quantitative study was coded for its treatment of the following broad issues: sample characteristics, psychometric properties, internal validity, effect, and bias. Each of these categories had several criteria for retention, although a study did not have to meet all of the criteria. A distinctly different coding scheme was developed to evaluate the 26 qualitative studies. Only four of the qualitative studies met the criteria for final inclusion and were reviewed separately. This report includes only the 88 quantitative studies that were part of the third stage of the review.

To be included in the quantitative review, a study had to utilize appropriate measurement and statistical methods. A primary criticism of previous single-sex literature reviews had been the confounding of single-sex schooling effects with the effects of religious values, financial privilege, selective admission criteria, or other advantages. Thus a study had to include statistical

[3]http://www.ed.gov/rschstat/eval/other/single-sex/index.html (2005).

controls for individual characteristics (e.g., socioeconomic status, individual ability, and age) and school characteristics that might explain the differences between single-sex and coed schools. Of the 88 quantitative studies identified in the third stage, only 40 published studies met the inclusion criteria and were retained. Reasons for excluding the other 48 studies included (a) failure to operationalize the intervention properly, (b) failure to apply statistical controls during the analyses, (c) work that was qualitative in nature rather than quantitative, (d) work written in a foreign language, (e) failure to draw comparisons between single-sex and coed schools, or (f) exclusion of students who were not elementary, middle, or high school age.

Systematic Review Results

Exhibit 1 shows the results of the systematic review organized by six broad topical areas. Because some studies used multiple outcome measures, the total number of outcomes is 112. For example, a typical study might examine results related to reading and mathematics achievement and self-esteem, which yield a total of three outcomes. For each of the 32 outcome measure categories, the exhibit lists the total number of outcomes and the percentages that support single-sex schooling, support coed schooling, are null, or are mixed (i.e., support both single-sex and coed schooling). Most of the outcome measures are in either the concurrent academic accomplishment (43 outcomes) or the concurrent adaptation and socio-emotional development (49 outcomes) areas. This report discusses only these two categories because of the small number of outcomes in the other categories.

If a study's findings all supported single-sex schooling for a given outcome variable, it was coded pro-single-sex. If a study's findings all supported coeducation for a given outcome variable, it was coded pro-coeducation. A study was coded null if there were no statistically significant differences between the single-sex and coeducation outcomes and coded mixed if the study had statistically significant findings in opposite directions for different subgroups. For example, a study was coded mixed if the findings supported single-sex schooling for boys but supported coeducation for girls. Or, if the findings supported single-sex schooling at one grade level but supported coed schooling at another grade level, the study was coded mixed. If a study had findings that were both pro-single-sex and null, it was coded pro-single-sex. If a study had findings that were both pro-coeducation and null, it was coded pro-coeducation.

Exhibit 1
Systematic Literature Review Findings

Outcome Measure Category and Topic	Total Outcomes	Percentage of Outcomes			
		Pro-SS	Pro-CE	Null	Mixed
Concurrent Academic Accomplishment					
All subject achievement test scores	9	67%	11%	22%	0%
Mathematics achievement test scores	14	22%	0%	56%	22%
Science achievement test scores	8	25%	0%	62%	13%
Verbal/English achievement test scores	10	30%	0%	70%	0%
Grades	1	0%	0%	100%	0%
Social studies achievement test scores	1	100%	0%	0%	0%
Subtotal	**43**	**35%**	**2%**	**53%**	**10%**
Long-Term Academic Accomplishment					
Postsecondary test scores	2	50%	0%	50%	0%
College graduation	1	0%	0%	100%	0%
Graduate school attendance	1	0%	0%	100%	0%
Subtotal	**4**	**25%**	**0%**	**75%**	**0%**
Concurrent Adaptation and Socio-Emotional Development					
Self-concept	7	57%	0%	43%	0%
Self-esteem	6	17%	33%	50%	0%
Locus of control	5	60%	0%	40%	0%
School track/subject preference	14	36%	14%	43%	7%
Educational aspirations	3	67%	0%	33%	0%
Career aspirations	2	100%	0%	0%	0%
Delinquency	4	50%	0%	50%	0%
Attitudes toward school	5	20%	20%	20%	40%
Time spent per week on homework	2	50%	0%	50%	0%
Attitudes toward working women	1	100%	0%	0%	0%
Subtotal	**49**	**45%**	**10%**	**39%**	**6%**
Long-Term Adaptation and Socio-Emotional Development					
School completion	1	100%	0%	0%	0%
Postsecondary success	1	0%	0%	100%	0%
Postsecondary unemployment	2	50%	0%	50%	0%
Eating disorders	1	0%	100%	0%	0%
Choice of college major	1	100%	0%	0%	0%

exhibit continues

Exhibit 1 (continued)

Sex role stereotyping	2	50%	50%	0%	0%
Political involvement	1	100%	0%	0%	0%
Percent married to first spouse	1	0%	0%	100%	0%
Subtotal	**10**	**50%**	**20%**	**30%**	**0%**
Perceived School Culture					
Climate for learning	1	100%	0%	0%	0%
Opportunities for leadership roles	2	50%	0%	50%	0%
School environment	1	0%	0%	100%	0%
Subtotal	**4**	**50%**	**0%**	**50%**	**0%**
Subjective Satisfaction					
Satisfaction with school environment	1	0%	100%	0%	0%
College satisfaction	1	100%	0%	0%	0%
Subtotal	**2**	**50%**	**50%**	**0%**	**0%**
Total	**112**				

Note. SS = single-sex. CE = coed.

Exhibit reads: *A total of nine outcomes were reported across all studies in the area of all subject achievement test scores, and 67 percent of those outcomes were pro-single-sex education, 11 percent were pro-coeducation, 22 percent were null (indicating no differences between single-sex and coed schools), and none were mixed (supporting single-sex schools or coed schools for some but not all subgroups).*
Source: *AIR, Single-Sex Versus Coeducational Schooling: A Systematic Review, 2005.*

Among the concurrent academic accomplishment outcomes, 53 percent were null, 10 percent were mixed, 35 percent favored single-sex schooling, and only 2 percent favored coed schooling. Among the concurrent socio-emotional outcomes, 39 percent were null, 6 percent were mixed, 45 percent favored single-sex schooling, and only 10 percent favored coed schooling. Thus the percentage of socio-emotional outcomes that favored single-sex schools exceeded the percentage of cognitive outcomes that favored single-sex schools. The researchers also provided separate results for boys and girls, and these results parallel the overall findings except that of the 30 socio-emotional outcomes that pertained specifically to girls, 70 percent favored single-sex schools. Of the 25 socio-emotional outcomes for boys, only 40 percent favored single-sex schools.

Thus, the results of the systematic review lend some support for single sex schooling, but the majority of academic outcomes were null or mixed. In addition, at least five methodological problems limit the acceptability of the studies included in the literature review:

1. The statistical significance of the outcomes in these studies that favor either single sex or coed schools are likely to be exaggerated because the students are clustered within schools. To obtain accurate standard errors, hierarchical analyses should have been used. Thus some of the studies showing statistically significant results might actually be null

under the more appropriate multilevel analyses that are now the commonly accepted methodology.

2. Some of the studies, Lee and Bryk, 1986, for example, employed one-tailed tests that inflate the significance of the results. Lee and Bryk claimed that previous evidence supported a directional hypothesis favoring single-sex schools, but Marsh (1989) challenged this claim, arguing that no basis for using one-tailed tests existed. Marsh found null results after employing two-tailed tests.
3. Fifty percent of the studies provided no information regarding the reliability of their measures.
4. Lee and Bryk may have undercontrolled for possible extraneous variables, Marsh may have overcontrolled by including just about every possible variable. This methodological problem is, perhaps, the most serious and it is difficult to determine with any degree of confidence which of the studies is correctly specified.
5. The wide heterogeneity of the 40 studies in the review hinders the drawing of firm conclusions. This heterogeneity applies to the quality of the studies, the time of the studies (they span nearly four decades), and the countries in which the studies were conducted.[4]

To supplement the literature review, the American Institutes for Research developed a paper that identified and described the possible explanations of positive or negative outcomes of single sex schools.[5] The paper (Mael et al. 2005b), "Theoretical Arguments For and Against Single-Sex Schools: A Critical Analysis of the Explanations," reviews previous studies that asked why single-sex schools should have positive (or negative) effects. These theoretical rationales are in essence the intervening variables that might account for positive (or negative) effects attributed to single-sex schools. For example, some have argued that single-sex schools reduce sexual harassment in school, which makes possible higher cognitive achievement and better socio-emotional development. These variables guided the construction of the surveys and the observations, and are described in detail in the following section.

[5] http://www.air.org/publications/pubs_ehd_education_evidence.aspx

Data Sources and Methodology

The key evaluation questions that guided the surveys and observations are:

- What are the characteristics of public single-sex schooling? What are the contextual, instructional, and behavioral practices unique to single-sex schools?
- What perceived benefits or disadvantages are associated with single-sex schooling?

To answer these questions the evaluation team administered principal and teacher surveys to 19 public single-sex schools and conducted site visits at a subsample of eight single-sex schools and two coed comparison schools. In addition, the study team analyzed existing data from the national Schools and Staffing Survey (SASS) from 1999–2000 and 2003–04 to make comparisons between the 19 public single-sex schools and a sample of 150 coed comparison schools. The study team used a propensity score analysis to derive a subsample of the nationally representative SASS sample that best matched the single-sex schools on several demographic characteristics.

Scope and Content of the Surveys

The surveys collected descriptive data on the characteristics of single-sex public schools to gain a better understanding of how these schools function and whether they exhibit any of the positive or negative outcomes commonly attributed to single-sex schooling. The principal survey collected data on school characteristics (enrollment, demographic characteristics of the students, staffing, curriculum), principal background and experience, admissions procedures, school climate, classroom instruction, student support, parent involvement, professional development, characteristics of single-sex schooling for boys and girls, and implementation challenges. The teacher survey collected data on teacher background and experience, class organization, classroom instruction and assessment, school climate, characteristics of single-sex schooling for boys and girls, and implementation challenges.

In order to allow comparisons between the single-sex schools and a sample of coed schools, both surveys included items from the 1999–2000 SASS and the 2003–04 SASS, which were developed and administered by the National Center for Education Statistics.[6] The principal survey included 30 SASS questions among its 74 questions, and the teacher survey borrowed 17 of its 46 questions from the SASS. The SASS questions were used so that comparisons could be made between the single-sex schools and a sample of similar coed schools. The principal and teacher surveys overlapped on 20 single-sex schooling questions, five background questions, three school climate questions, and one professional development question. These surveys were administered in February 2005.

The principal and teacher surveys also included items that related to the 14 theoretical benefits of single-sex education that had been identified in the background paper on explanatory variables (Mael et al. 2005b). These theoretical constructs include:

[6] See www.nces.ed.gov/surveys/sass (2000).

- Diminished strength of youth culture values.
- Emphasis on academic achievement and aspirations.
- Greater degree of order and control.
- Provision of positive same sex teacher and student role models.
- Reduction of sex differences in curriculum and student opportunities.
- Reduction of sex bias in teacher-student interactions.
- Better peer interactions (e.g., less teasing, less dominance).
- Greater leadership opportunities.
- Greater staff sensitivity to sex differences in learning and maturation.
- More opportunities for students to pursue non-sex role stereotyped activities and aspirations.
- Less sexual harassment, violence, delinquency, drugs, and predatory behavior.
- Proacademic parent and student choice to attend.
- More same sex bonding and community.
- Greater socio-emotional benefits (e.g., self-efficacy, confidence).

The surveys asked principals and teachers several descriptive questions linked to these 14 theoretical benefits, including which benefits they perceived as the greatest advantages of single-sex schooling. The study team used the survey results to identify and observe these explanatory variables (perceived benefits) during the site visits as well.

Virtually all previous studies on single sex schools have been confined to an analysis of the direct effects of school type (single sex or coed) on a variety of student outcomes such as academic achievement. As noted in literature review, the high quality studies controlled for antecedent (common cause) variables such as socioeconomic status. However, very few studies examined the mechanisms or explanations for why single sex schools might be expected to have more favorable student outcomes than comparable coeducational schools. These mechanisms (see above list) may serve as intervening variables between the independent variable of school type and the dependent variable of academic achievement. They also may operate as potential benefits of single sex schools as perceived by those people attending or working in single sex schools.

The survey questions pertaining to these explanatory variables were asked only of teachers and principals in single sex schools; thus no comparison data is available. Moreover, the responses and the behaviors of teachers and students in single sex schools may reflect the selection bias associated with their choice of attending or working in these schools. The systematic literature review summarized the effectiveness of single sex schools, but the surveys and school observations are purely descriptive.

It should be noted that because teacher survey respondents are clustered within schools in both single-sex and coed school samples, their responses to the survey questions are not completely independent of one another. This could reduce the size of the standard errors, which could then result in concluding that some differences are statistically significant when they really are not.

For this reason, the study team decided that only differences with p values < .001 would be considered statistically significant.

Survey Samples

The study team used several strategies to identify single-sex schools to participate in the study. First, the study team contacted all 20 schools the U.S. Department of Education identified as public single-sex schools in 2003.[7] Some of these schools no longer operated as single-sex schools or otherwise did not meet the inclusion criteria. For example, some schools on the list separated students by sex only for certain classes; only schools that separated students by sex for all classes were included. Second, the study team found additional schools through the National Association for Single-Sex Public Education, the National Coalition of Girls' Schools, and the International Boys' School Coalition. Surveys were distributed in February 2005 to principals and teachers in 19 of the 20 single-sex schools in operation in fall 2003 that met the inclusion criteria and agreed to participate. The 20th school did not respond to written or telephone communications soliciting their participation. The recipients included four elementary schools, five middle schools, four combined middle and high schools, and six high schools. All but one of the principals returned the principal survey (95 percent), and 88 percent of the teachers returned the teacher survey for a total sample size of 18 principals and 478 teachers (see Exhibit 2).

The study team selected a sample of coed public schools from the 2003–04 SASS database to serve as comparison schools. The study team used a propensity score analysis to derive a subsample of the SASS sample that best matched the single-sex schools on the following characteristics: the percentage of students who were African-American, the percentage of students who were Hispanic, the percentage of students eligible for free or reduced-price meals, and school locale (i.e., urban area of a large or midsized city). The single-sex schools and the comparison schools were similar on these demographic characteristics. The study team selected 50 schools at each level (elementary, middle, and high school) for a total of 150 schools, 146 principals, and 723 teachers. This sample of 150 schools represents a national sample of demographically similar schools.

[7] According to the National Association for Single-Sex Public Education, there were 88 single sex schools open in the United States as of fall 2007.

Exhibit 2
Single-Sex School Survey Respondents

School Location	Grades	Sex	No. of Students	No. of Teachers	Percent Non-White	Percent FRPM	Year Started
New York[a]	K–3	BG	192	18	97	100	2002
Washington	K–5	BG	290	22	98	87	2001
Ohio	K–6	B	250	25	99	99	2003
Ohio	K–6	G	340	30	99	99	2003
Pennsylvania	5–8	BG	1,117	70	96	91	2003
California	5–8	BG	103	7	100	97	1996
Kentucky	6–8	BG	820	49	50	93	2002
Colorado[a]	6–8	BG	320	29	42	29	2003
California	6–8	BG	1,210	42	92	90	1999
Pennsylvania	7–10	B	316	14	100	100	2002
Pennsylvania	7–10	G	268	14	100	100	2002
Illinois[a]	7–12	G	327	30	86	69	2000
New York	7–12	G	400	28	99	84	1996
Ohio	9–11	BG	590	40	94	83	2001
North Carolina	9–12	B	60	10	—	—	2003
North Carolina	9–12	G	95	9	96	90	2003
Wisconsin	9–12	G	90	6	99	94	1975
Pennsylvania	9–12	G	1,194	55	86	48	1848
Maryland	9–12	G	875	48	86	50	1844
Total			8,857	546			

[a]Charter school. FRPM = free or reduced-price meals. BG = Boys and Girls (or Dual Academy).

Exhibit reads: *The single-sex school located in New York opened in 2002 and serves 192 boys and girls in Grades K–3 and has 18 teachers. All of the students qualify for free or reduced-price meals and 97 percent are nonwhite.*
Source: *RMC Research, Single-Sex School Principal Survey, 2005.*

Eight of the 19 single-sex schools that completed surveys were dual academies; seven were elementary or middle schools, and one was a high school. Of the remaining 11 schools, three served boys only and eight served girls only. Although the majority of schools (13 of 19) had been in operation only since 2000, two of the all girls' schools had been in operation for over 150 years. In 17 of the schools most students were nonwhite, and in 16 of the schools most students qualified for free or reduced-price meals.

Scope and Content of the Site Visits

The study team developed interview, focus group, and observation protocols to explore the evaluation questions with various stakeholders in single-sex schools and coed comparison schools. The site visit teams gathered information about the schools' physical facilities; curricula and modes of instruction; climates and cultures; perceived benefits of single-sex schooling; and theoretical rationales for establishing single-sex schools as perceived by principals, teachers, students, and parents. The site visit teams conducted a principal interview; a district supervisor interview; focus groups with teachers, parents, and students; and observed classrooms and other school areas such as the cafeteria, hallways, and playground. Site visit team members were all experienced in evaluating educational programs and participated in group training on the observation protocols.

Site Visit School Sample

The study team attempted to recruit two single-sex schools and two matching coed schools at each level (elementary, middle, and high school). The study team used several criteria to select the single-sex schools: school size, charter school status, geographic diversity, and perceived willingness to participate in a site visit. Principals of the six participating single-sex schools were asked to suggest the coed schools in their districts that were most similar to their own schools in terms of student race and poverty level. The study team also searched national databases to identify similar schools. After identifying the best matches for each single-sex school, the study team contacted the potential comparison schools. Most of the comparison schools did not agree to participate. Due to the difficulty obtaining cooperation from comparison schools, the sample contains only one comparison school at the elementary and middle school levels and none at the high school level. The sample size for the comparison schools is not sufficient to generalize to coed schools, but the sample of single sex schools represents 40 percent of the schools in existence at the time. The purpose of employing coeducational comparisons schools was limited and exploratory, and the study design does not support inferences about the impact of single-sex schooling.

When it became clear that the study team would not be able to recruit six comparison schools, a pair of single-sex elementary schools located in the same district was added to the study. At the direction of the district superintendent, these once coed schools had in 2003 become single-sex schools, one enrolling boys and the other girls. The study team was interested in studying how the two schools had responded to this mandate and whether the schools exhibited differences in terms of programs and outcomes.

The final site visit sample comprised three groups: five elementary schools, three middle schools, and two high schools. The single-sex schools included four completely single-sex schools (Schools B, C, I, and J), three dual boys' and girls' academies housed in the same building (Schools A, F, and G), and one dual academy with some coed classes (School D). Due to unequal numbers of boys and girls in Grades 4 and 5, the school grouped students by ability into coed groups for reading, mathematics, and science instruction. Two schools, one elementary

and one middle, served as coed comparison schools.[8] The schools in the sample ranged in size from 850 students at School I to 150 students at School B, where low academic performance and parental school choice had resulted in decreased enrollment. Only one of the schools indicated that fewer than 50 percent of the students were eligible for free or reduced-price meals, and all but one had student populations that were predominantly nonwhite. Consequently, this sample primarily informs on single-sex schools serving at-risk populations.

With the exception of School I, which has been in existence for 150 years, all of the single-sex schools and dual academies are relatively new and many are undergoing rapid change. For example, School D added a coed component between the time the sample was selected and the site visits were conducted to address an inequity in class size, School G planned to split into two separate schools in the 2006–07 year, and School A planned to do so in 2007–08. In general, the schools also noted they had limited and diminishing resources for meeting the needs of students.

Exhibit 3
Site Visit School and Student Characteristics

School Characteristics						Student Characteristics (Percentages)					
School ID	Grades Served	No. of Students	SS Girls	SS Boys	Coed	FRPM Eligible	African American	Asian	Hispanic	Native American	White
A	K–4	237	Dual academy			100	86		10		3
B	K–6	150		X		80	97				3
C	K–7	340	X			92	95		< 1		4
D	K–5	297	X	X	X	93	63	15	19		2
E	K–6	840			X	84	90		9		< 1
F	6–8	320	Dual academy			30	8	6	12	13	58
G	6–8	850	Dual academy			92	50	4	4	< 1	43
H	6–8	670			X	71	16	5	46	2	31
I	9–12	850	X			50	82	3	1		14
J	7–12	400	X			67	40	1	56	1	1

Note. School D offers mostly single-sex classes but some classes in Grades 4 and 5 were coed.
FRPM = free and reduced-price meals
Numbers in Exhibits 2 and 3 may differ somewhat because survey data and site visit data were collected in two different school years.

Exhibit reads: *School A served 237 boys and girls in Grades K–4. All of the students were eligible for free or reduced-price meals; 86 percent were African-American, 10 percent were Hispanic, and 3 percent were white.*
Source: *RMC Research, Single-Sex School Principal Interview, 2005.*

[8]Originally, plans called for two coed comparison schools at each level for a total of six schools. Coed schools were reluctant to participate in the project and it was necessary to reduce the number of comparison schools back to one at each level. Then, at the last moment, the coed high school dropped out.

Characteristics of Public Single-Sex Schooling

The study team analyzed survey data from 19 single-sex schools and 150 coed comparison schools to examine demographic and background characteristics of the schools, principals, teachers, and students. Interviews and observation data from the school site visits provided more detail on staff and student characteristics, school programs, beliefs about single-sex schooling, school climate, student interactions, academic achievement, and extracurricular activities. The findings from these data sources describe characteristics of single sex schools that could be considered a potential source of hypotheses for further investigations that utilize experimental or quasi-experimental designs.

Staff and Student Characteristics

Principals and Teachers

The principals of the public single-sex schools were similar to the principals of the coed comparison schools in terms of ethnic background and educational credentials. **Teachers in the single-sex schools were more likely than teachers in the comparison schools to have earned certification beyond a master's degree but less likely to have standard certification. On average, teachers from single-sex schools had fewer years of experience in the classroom.**

Like their students, the majority of the school principals were African-American. However, the majority of the teachers in both single-sex and comparison schools were white (see Exhibit 4).

The most common educational attainment for both single-sex and comparison school principals was a master's degree. On average, the single-sex school and comparison school principals were similar in terms of their years of experience.

There were several statistically significant differences between the single-sex school teachers and the comparison school teachers on background characteristics including race, educational attainment, years teaching at their current school, total years of teaching experience, and certification levels. Although teachers at the single-sex and comparison schools were equally likely to have a master's degree, a greater percentage of single-sex school teachers had earned certification beyond a master's degree. However, teachers at single-sex schools had fewer years of teaching experience (See Exhibit 5).

Teacher credential data also differed between the single-sex and comparison schools. Single-sex school teachers were more likely than comparison school teachers to have probationary certification, temporary certification requiring additional course work, or emergency certification. Differences in certification between single-sex and coed school teachers may partly be a function of the fact that three of the single-sex schools (16 percent) are charter schools. Only 51 percent of the single-sex charter school teachers were fully certified compared to 75 percent

of the single-sex non-charter school teachers. (Note that this information was collected prior to the *NCLB* deadline for meeting Highly Qualified Teacher requirements).

Exhibit 4
Racial and Ethnic Background of Survey Respondents

	Principals		Teachers	
Race/Ethnicity	**SS Schools**	**Coed Schools**	**SS Schools**	**Coed Schools**
White	28%	36%	60%	54%
Black or African American	72%	63%	34%	40%
Asian or Pacific Islander	0%	1%	4%	6%
American Indian or Alaska Native	6%	0%	2%	2%
Hispanic Origin	0%	6%	6%	4%

Note: The single-sex school teacher survey findings are based on responses from 92 elementary, 187 middle, and 199 high school teachers ($N = 478$), and comparison school teacher survey findings are based on responses from 151 elementary, 206 middle, and 366 high school teachers ($N = 723$).

Exhibit reads: *Twenty-eight percent of the single-sex school principals, 36 percent of the coed school principals, 60 percent of the single-sex school teachers, and 54 percent of the coed school teachers were white.*
Source: *RMC Research, Single-Sex School Principal and Teacher Surveys; SASS Surveys.*

According to site visit interviews, the principals of the single-sex schools acquired their positions by applying for a leadership position in the school, being assigned to the school by the district, or by remaining in the principal position when the school transitioned from a coed school to a single-sex school. In all but one instance the principals embraced the single-sex school concept and articulated a vision that included modifying instruction to address the predominant learning styles of boys or girls, although site teams observed no major modifications to curricula in the classrooms. As part of this vision, principals cited fostering a school climate that minimizes instructional distractions resulting from interaction with the other sex in the classroom and creating a supportive school community.

Exhibit 5
Educational Background and Experience of Survey Respondents

	Principals		Teachers	
Education or Experience Level	**SS Schools**	**Coed Schools**	**SS Schools**	**Coed Schools**
Bachelor's degree	6%	0%	40%	47%
Master's degree	44%	47%	44%	45%
Education specialist or certification	28%	43%	11%	5%
Doctorate or professional degree	22%	10%	3%	1%
Standard teacher certification	—	—	72%	80%
Years of teaching experience	13.5	14.7	11.2	15.1
Years of principal experience	7.0	6.6	—	—
Years as principal or teacher in *this* school	3.6	4.0	5.2	7.7

Exhibit reads: *Six percent of the single-sex school principals had no education beyond a bachelor's degree, but all of the coed school principals had at least a master's degree.*
Source: *RMC Research, Single-Sex School Principal and Teacher Surveys; SASS Surveys.*

Students

Overall, the single-sex public schools served student populations similar to those in comparable coed public schools, although fewer students with disabilities attended single-sex elementary and high schools.

Student racial breakdowns varied by school level. In the single-sex schools the largest racial classification at all three levels was African-American (86 percent of elementary; 50 percent of middle; and 71 percent of high school students). African-Americans also composed the majority of the student population in the comparison schools (92 percent of elementary, 69 percent of middle, and 69 percent of high school students).

Compared to coed schools, a smaller percentage of elementary, middle, and high school students attending single-sex public schools were eligible for free or reduced-price meals. Average daily attendance was similar for single-sex and comparison schools at all school levels. Single-sex elementary and middle schools had slightly lower percentages of students with special education individualized education programs (IEPs) and slightly higher percentages of students who were limited English proficient than the coed comparison schools. Single-sex high schools had a slightly higher percentage of students with IEPs compared to coed schools (see Exhibit 6).

Exhibit 6
Student Background by School Level

Characteristic	Mean Percentage of Students					
	Elementary		Middle		High	
	SS	Coed	SS	Coed	SS	Coed
Eligible for free or reduced-price meals	65	89	67	84	65	74
Attending daily	95	94	86	92	87	89
With IEP	6	11	13	19	22	14
Limited English proficient	12	5	18	10	1	4

Note: Single-sex school sample size: 19. Coed comparison school sample size: 150.
IEP = individualized education program.

Exhibit reads: *At the elementary school level, 65 percent of students in single-sex schools were eligible for free or reduced-price meals, compared to 89 percent of coed school students.*
Source: *RMC Research, Single-Sex School Principal Survey, 2005.*

School Programs

Overall, single-sex schools were more likely to receive Title I funds and to offer more extended day and parent involvement programs. Coed schools were more likely to offer programs for limited English proficient students.

According to the principals surveyed, the single-sex elementary and middle schools were more likely than the comparison schools to receive Title I funds; all of the single-sex elementary schools, 86 percent of the middle schools, and 43 percent of the high schools received Title I funds, but only 76 percent, 48 percent, and 48 percent, respectively, of the coed schools did. In contrast, the coed schools were more likely to offer programs for limited English proficient students. Although the differences between the single-sex and comparison schools at the middle and high school levels were few, at the elementary school level single-sex schools were less likely than comparison schools to have any type of formal school improvement plan (75 percent versus 96 percent).

The single-sex schools were asked several questions about school programs that did not appear on the SASS survey.

- Among the single-sex schools, 25 percent of the elementary, 86 percent of the middle, and 29 percent of the high schools had been identified for school improvement under *No Child Left Behind*.
- Twenty-five percent of the elementary single-sex schools and 43 percent of the single-sex schools at the middle and high school levels were implementing a specific school reform model.

- The majority of the teachers in the single-sex schools used state or district standards to guide instruction to a moderate or great extent (88 percent at the elementary, 79 percent at the middle, and 72 percent at the high school level).
- In-class instruction in small groups, pullout instruction during school hours, and individual tutoring outside of class time were the most common supplemental services provided to students with additional learning needs in the single-sex schools.
- Most of the single-sex schools (89 percent) offered before- or after-school enrichment programs.
- Many of the single-sex schools offered parent education workshops or courses (61 percent), written contracts between school and parents (94 percent), and opportunities for parents to serve as volunteers in the school on a regular basis (89 percent).
- Almost half of the single-sex schools (47 percent) had formal adult-student mentoring programs, and 33 percent had formal peer mentoring programs.
- Sixty-seven percent of single-sex schools offered alcohol, drug, or tobacco prevention programs and 61 percent offered violence prevention programs.

Curriculum and Instruction

The site visit teams found little evidence of substantive modifications to curricula to address the specific needs of either boys or girls, although some teachers provided examples of using support materials specific to the interests of girls. At one all girls' high school, teachers stated that they taught the same as they would if they were teaching boys or a coed class. Direct instruction with student interaction was the predominant pedagogical approach in all of the single-sex schools.

In both the elementary and middle school samples, more positive academic and behavioral interactions between teachers and students (both boys and girls) were observed in the single-sex schools than in the coed comparison schools. Boys' and girls' academic time on task at both the elementary and middle school levels was also higher in the single-sex schools.

Exhibits A1 and A2 in Appendix A display evidence that the observed instructional interactions between teachers and students in the single-sex schools differed from the interactions observed in the two coed comparison schools. The site visit teams rated the single-sex elementary schools higher than the coed comparison schools in the areas of setting high academic expectations, showing sensitivity to sex differences in learning or maturity, maintaining order and control, and providing opportunities for non-sex stereotyped activities (see Exhibit A1). At the middle school level there were fewer differences between the single-sex and comparison schools (see Exhibit A2). Exhibit A3 displays similar data for the two single-sex high schools observed, although no comparisons with coed classes were possible. The counts of positive academic interactions between teachers and students in these high schools are lower than those in the elementary and middle schools observed.

Professional Development

The survey data revealed few differences in the numbers of teachers and principals who participated in various types of professional development. The principals of single-sex schools were, however, more likely to participate in professional development with their teachers than were the principals of coed schools (100 percent and 87 percent, respectively).

The study team compared data from the single-sex school principal and teacher surveys with SASS data on professional development and found small differences between these groups. The principals of both single-sex and coed comparison schools were equally likely to participate in university courses, observational visits to other schools, and research on topics of professional interest. The principals of coed schools were more likely to participate in a principal network, but the principals of single-sex schools were more likely to present at workshops and conferences. Teachers in the single-sex schools were equally likely as teachers in the coed comparison schools to take university courses related to teaching, make observational visits to other schools, attend conferences, and present at conferences (see Exhibit 7).

At the elementary level single-sex school teachers were most likely to participate in professional development activities related to reading (62 percent) and mathematics (58 percent). At the middle school level the most common professional development topics were reading (65 percent) and student discipline (51 percent), and at the high school level the most common topics were student assessment (50 percent) and reading (44 percent). The single-sex school teachers at the elementary level were the most likely to receive professional development on single-sex education (33 percent), followed by middle school teachers (24 percent) and high school teachers (15 percent).

In the site visits, one of the girls' high schools and most of the dual academies said they provided professional development for teachers specifically related to single-sex schooling, although in most instances the listed offerings occurred only once or twice. Staff at the all-girls' elementary school participated in professional development on how girls learn, and discussed JoAnn Deak's book, *Girls Will Be Girls: Raising Confident and Courageous Daughters*. All School D teachers were required to read Mychal Wynn's *Empowering African-American Males: Teaching, Parenting, and Mentoring Successful Black Males.* At School J, which had the most comprehensive professional development on single-sex education, teachers annually attended talks given by experts in the field and were involved in book discussion groups related to girls' education. In this school, teachers spoke of the ways in which they modify their materials and pedagogy to meet the specific needs and interests of girls.

Exhibit 7
Participation in Professional Development Over Past 12 Months

Type of Professional Development	Percent Participating			
	Principals		Teachers	
	SS	Coed	SS	Coed
University courses related to role	44	39	47	42
Observational visits to other schools	83	74	27	25
Observational visits to other classrooms in own school	—	—	50	—
Individual or collaborative research on a topic of professional interest	67	82	—	—
Mentoring or coaching of principals as part of a formal arrangement supported by the school district	72	60	—	—
Participation in a principal network (e.g., a group of principals organized by an outside agency or through the Internet)	39	64	—	—
Reading professional articles or books related to education	—	—	83	—
Presenting at workshops or conferences	72	49	30	31
Attending workshops or conferences as a participant only	89	94	91	88

Note: Single-sex schools: $N = 19$. Coed schools: $N = 150$. Dashes indicate that the question was not included on that survey.

Exhibit reads: *Forty-four percent of principals and 47 percent of teachers in single-sex schools attended a university-level course related to their role, whereas 39 percent of principals and 42 percent of teachers in coed schools said they received this type of professional development.*
Source: *RMC Research, Single-Sex School Principal and Teacher Surveys, 2005; SASS Surveys.*

Single-Sex Schooling

Results from the principal surveys show that the most common admission criterion for single-sex schools was residence in the attendance area (53 percent), followed by student academic records (47 percent), special student needs (41 percent), and parental involvement or commitment (41 percent).

One elementary school and two high schools in the site visit sample (Schools A, I, and J) had admission procedures that may have resulted in populations that were not identical to the general school population. The selection criteria included prior academic performance, recommendations, and interviews. At least one site visit school (School B) had a declining student population and inadequate numbers of applicants. One school (School C) noted that girls

who did not fulfill its behavioral expectations were asked to transfer out; others (Schools A and I) required adequate academic progress for students to remain enrolled.

Reasons for Establishing Single-Sex Schools

According to the 18 principal survey respondents, the primary reasons for establishing single-sex schools were to increase the focus on academics (53 percent), to better address individual student needs (29 percent), and to reduce discipline issues or dropouts (18 percent).

Almost half (47 percent) of the schools were coed before becoming single-sex schools. About one-fourth of the principals and teachers had been at their school before it had become a single-sex school; most of these teachers (83 percent) and principals (73 percent) supported the conversion to single-sex schooling.

Perceived Benefits of Single-Sex Schooling

Principals and teachers perceived that the main benefits of single-sex schooling were decreased distractions to learning, improved student achievement, and the opportunity to address the unique learning styles and interests of boys and girls.[9]

The study team collected data on the perceived advantages of single-sex schooling through the principal and teacher surveys and the site visits. The study team developed items for the principal and teacher surveys using the 14 theoretical benefits of single-sex education that emerged from the literature review. Exhibit 8 illustrates the order of importance respondents placed on these 14 benefits.

Teachers in the site visit sample focused on the ways in which single-sex classrooms decrease distractions to learning. Teachers in some schools said that single-sex classes enable them to deal separately with "emotional" girls or "aggressive" boys. Teachers dealing with at-risk and challenging students stated that single-sex classrooms reduce the complexity of the environments they manage.

[9] The Title IX regulations prohibit recipients from offering single-sex classes or extracurricular activities that are based on the overbroad generalizations of the different talents, capacities, or preferences of either sex.

Exhibit 8
Perceived Benefits of Single-Sex Schooling

Benefit	Percent of Teachers		Percent of Principals	
	Most Important	Included in Top 5	Most Important	Included in Top 5
Single-sex schooling . . .				
Decreases distractions to learning.	32	72	29	76
Improves student achievement.	15	53	41	82
Addresses the unique learning styles and interests of boys or girls.	14	55	6	59
Improves student self-esteem.	7	49	0	41
Decreases the academic problems of low achieving students.	6	24	0	35
Reduces student behavior problems.	4	40	0	47
Allows for more opportunities to provide social and moral guidance.	4	33	6	24
Provides choice in public education.	4	31	12	29
Provides more leadership opportunities.	4	30	6	35
Decreases sex role stereotyping.	3	21	0	18
Decreases sex bias in teacher-student interactions.	3	20	0	12
Reduces sexual harassment among students.	2	21	0	18
Promotes a sense of community among students and staff.	1	16	0	12
Provides more positive student role models.	0	14	0	0

Exhibit reads: *Thirty-two percent of the teachers and 29 percent of the principals ranked "decreases distractions to learning" as the most important benefit of single-sex schools; 72 percent of the teachers and 76 percent of the principals ranked this benefit in their top five benefits.*
Source: *RMC Research, Single-Sex School Principal and Teacher Surveys, 2005.*

Sex Differences in the Perceived Benefits of Single-Sex Schooling

The principals and teachers who responded to the surveys rated the extent to which they agreed or disagreed with 10 of the 14 theoretical benefits of single-sex schooling. Internal consistency reliabilities (Cronbach's alpha) were calculated for only 10 of the benefit subscales because there were insufficient numbers of items to constitute real subscales for four of these rationales or

explanatory categories (see Exhibit 9). The reliabilities ranged from .56 to .89.[10] Teachers responded to the same set of survey items for both boys and girls if they taught both sexes. If they taught only one sex, they responded to the survey items for that sex only.

Exhibit 9
Perceived Differences Between Boys and Girls on Explanatory Category Scores From Teachers Who Instruct Both Sexes

Benefit	Mean		*t*	*p*
	Girls	Boys		
1. Diminished strength of youth culture values (diminished emphasis on sex, sports, anti-academic values and behaviors)	2.32	2.32	0.29	.776
2. Greater emphasis on academic behaviors	2.71	2.38	7.28	< .001
3. Greater degree of order and control	2.90	2.74	6.86	< .001
4. More successful same sex student and teacher role models[a]	3.46	3.46		
5. Better peer interactions (e.g., less teasing, less dominance)	3.11	2.70	8.88	< .001
6. More leadership opportunities	1.89	1.73	2.80	.006
7. Greater sensitivity to sex differences in learning and maturation	3.10	3.10	0.13	.900
8. Less sexual harassment, violence, delinquency, drugs, and predatory behavior	3.28	3.22	3.47	.001
9. Requirement of pro-academic parent and student choice	2.37	2.21	3.10	.002
10. Greater socio-emotional benefits (e.g., self-efficacy, confidence)	3.01	2.71	5.67	< .001

Note: n = 136 (teachers who responded for both boys and girls). Mean ratings are based on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*). A scale mean of 2.5 or higher indicates that, on average, the respondents agreed that the benefit was applicable.
[a]Because items on this scale were not asked separately for teachers of boys and teachers of girls, no *t* test was conducted.

Exhibit reads: *The exhibit presents the mean scale scores for 10 theoretical benefits of single-sex schooling for teachers who taught both sexes separately. The t-values represent the magnitude of the differences between teacher perceptions of the benefits for boys and girls. The p-values indicate whether or not these differences are statistically significant. For the first benefit, diminished strength of youth culture values, the mean rating for both boys and girls was approximately 2.32, so the difference was not statistically significant.*
Source: *RMC Research, Single-Sex School Teacher Survey, 2005.*

[10]Alphas were greater than .65 in all but two of the explanatory categories; these alphas were lower (.56 and .62) because these scales were limited to two items.

Teachers reported significantly greater benefits of single-sex schooling for girls than for boys in five of the 10 benefit categories. That is, teachers believed that girls benefit more than boys from better peer interactions, a greater emphasis on academic behaviors, a greater degree of order and control, socio-emotional benefits, and safe behavior. Teachers believed that both sexes benefit equally from single-sex education in terms of a greater sensitivity to sex differences in learning and maturation. One purported benefit, the provision of more leadership opportunities, was clearly not supported by the teachers in this sample.

There are some important differences in how teachers valued the 10 theoretical benefits of single-sex education for boys and girls and also some important similarities. The decrease in sexual harassment and violence appears to be one of the greatest advantages of single-sex schooling for both boys and girls, according to teachers. Teachers also perceived that students benefit from better peer interactions, greater teacher sensitivity to sex differences in learning and maturation, and from having same-sex student and teacher role models.[11]

School Climate

Overall, teachers in single-sex high schools rated problems with student behavior as less serious than teachers in coed schools, but the opposite was true at the middle school level. There were no differences between single-sex and coed school teachers' ratings of problems at the elementary level.

School climate refers to the sum of the values, cultures, safety practices, and organizational structures within a school and their effects on students (McBrien and Brandt, 1997). The study team examined school climate through both the survey results and the site visits because previous research has shown positive correlations between school climate and student achievement (Brookover, Beady, Flood, Schweitzer, and Wisenbaker, 1977; Bulach and Malone, 1994; Rutter, 1981; Rutter, Maughan, Mortimore, Ouston, and Smith, 1979; Wynne, 1980). Hoyle, English, and Steffy (1985) stated, "School climate may be one of the most important ingredients of a successful instructional program. Without a climate that creates a harmonious and well functioning school, a high degree of academic achievement is difficult, if not downright impossible to obtain" (p. 15).

The study team compared school climate-related data from 11 items on the single-sex schools surveys with data from similar items in the SASS database. These data addressed problems related to student behavior, parent involvement, and teacher behavior, and teachers rated the extent to which they perceived these areas to be problems in their school (scale reliability is .87). Exhibit 10 shows that the single-sex school teachers rated all of the 11 problems as less serious than the coed school teachers rated them. The study team developed an 11-item problem scale to determine whether the single-sex school teachers differed from the comparison school teachers on their perceptions of problems as a whole. Findings indicated that, as a whole, teachers from single-sex schools perceived problems to be less serious than did comparison school teachers (Ms = 2.50 and 2.71 for single-sex and comparison schools, respectively, $t = 6.16$, $p < .001$).

[11] None of the schools in this study hired or assigned teachers on the basis of sex, which would be illegal under Title IX of the *Education Amendments of 1972* and other employment laws.

Teachers in the single-sex high schools (M = 2.42) believed school climate problems overall to be less serious than the teachers in the coed high schools (M = 2.99). In contrast, single-sex middle school teachers reported problems overall to be more serious (Ms = 2.74 and 2.56, respectively). Elementary single-sex and coed school teachers rated problems similarly (Ms = 2.18 and 2.26, respectively). (See Exhibits A4, A5, and A6).

Exhibit 10
Teacher Perceptions of School Climate Problems

	Teachers' Mean Rating	
Problem Area	**SS**	**Coed**
Student tardiness	2.90	3.02
Student absenteeism	2.81	3.00
Student class cutting	2.21	2.48
Student pregnancy	1.90	1.98
Students dropping out	1.62	2.11
Student apathy	2.72	2.87
Lack of parental involvement	2.98	3.24
Students unprepared to learn	3.14	3.41
Poor student health	2.31	2.44
Teacher absenteeism	1.84	2.05
Poverty	3.14	3.24

Note. Single-sex schools n = 478; coed schools n = 723. Mean ratings are based on a scale from 1 (*not a problem*) to 4 (*serious problem*).

Exhibit reads: *Teachers in coed schools rated student tardiness a more serious problem than teachers in single-sex schools.*
Source: *RMC Research, Single-Sex School Teacher Survey, 2005; SASS, 2004.*

Teachers also rated the extent to which they agreed or disagreed with a series of statements related to school climate. The study team combined related survey items to develop three climate constructs for leadership, student misbehavior, and instructional support (see Exhibit A7 for construct items and scale reliabilities). Mean differences between the ratings made by the single-sex school teachers and coed teachers on these climate scales are presented in Exhibit 11. Teachers in single-sex high schools reported significantly greater instructional support and less student misbehavior than the coed school teachers ($p < .001$). In contrast, single-sex middle school teachers indicated that there was significantly less instructional support and more student misbehavior than the coed school teachers ($p < .001$). There were no significant differences between single-sex and coed elementary school teachers on these factors.

Exhibit 11
Teacher Perceptions of School Climate

School Climate Construct	Teachers' Mean Rating					
	Elementary		Middle		High	
	SS	Coed	SS	Coed	SS	Coed
Leadership	3.38	3.23	3.04	3.16	3.13	3.18
Student misbehavior	2.29	2.34	2.98*	2.53	2.36*	2.78
Instructional support	2.72	2.58	2.38*	2.53	2.68*	2.49
Number of respondents	*91*	*151*	*187*	*206*	*198*	*366*

Note. Single-sex schools $n = 475$; coed schools $n = 723$. Rating scale: 1 = *strongly disagree*, 4 = *strongly agree*.
* Difference between single-sex and coed teacher ratings statistically significant at $p < .001$.

Exhibit reads: *The exhibit compares the mean ratings of single-sex and coed elementary, middle, and high school teachers on three school climate constructs: leadership, student misbehavior, and instructional support. There were no differences between single-sex and coed teachers at any school level on student leadership.*
Source: *RMC Research, Single-Sex School Teacher Survey, 2005; SASS, 2004.*

The study team also analyzed the mean differences between the ratings of the single-sex school teachers and the comparison school teachers on the series of statements related to school climate (See Exhibit 12).

Exhibit 12
Teacher Ratings of School Climate

School Climate Statement	Teachers' Mean Rating	
	SS	Coed
a. There is a great deal of cooperative effort among the staff members.	3.05	3.05
b. I make a conscious effort to coordinate the content of my courses with that of other teachers.	2.96	3.08
c. I sometimes feel it is a waste of time to try to do my best as a teacher.	1.64	1.62
d. I am generally satisfied with being a teacher.	3.24	3.29
e. I am satisfied with my teaching salary.	2.20	2.20
f. I worry about the security of my job because of the performance of my students on state and/or local tests.	2.18	2.21

Note: Single-sex schools $n = 475$; coed schools $n = 723$. Rating scale: 1 = *strongly disagree*, 4 = *strongly agree*.

Exhibit reads: *The exhibit shows the extent to which single-sex and coed school teachers agreed or disagreed with each statement about school climate. There were no differences between single-sex and coed school teachers on their perceptions of cooperative effort among staff members.*
Source: *RMC Research, Single-Sex School Teacher Survey, 2005; SASS, 2004.*

Teachers in coed schools reported significantly more coordination of the content of courses with other teachers than the teachers in single-sex schools. No statistically significant differences were evident in the teachers' responses to the other statements. Teacher ratings disaggregated by school level appear in Exhibits A8, A9, and A10.

In conclusion, survey data from 478 teachers in 19 single-sex schools and similar data from a subsample of 723 coed school teachers selected from the SASS database suggest that school climate is somewhat more positive in single-sex schools than in coed schools. Data from the middle school sample do not, however, follow the same positive trends observed in the elementary and high school samples. In contrast to single-sex elementary and high school teachers, single-sex middle school teachers perceived there were more serious problems, more student misbehavior, and less instructional support.

Student Interactions and Behaviors

Overall, the site visit teams observed more positive student interactions in the single-sex schools than in the coed comparison schools in the sample.

Students in the single-sex elementary and middle schools in the site visit sample exhibited a greater sense of community, interacted more positively with one another, showed greater respect

for their teachers, were less likely to initiate class disruptions, and demonstrated more positive student role modeling than students in the coed comparison school sample. Single-sex middle school students were slightly more likely to engage in leadership activities than their coed comparison school counterparts. Students in the two single-sex high schools exhibited high levels of sense of community, positive interactions with one another, respect for teachers, positive student role modeling, and engagement in leadership opportunities and low levels of class disruptions. Exhibit 13 shows the site visitors' mean ratings of each of several student interactions and behaviors in the eight single-sex and two coed comparison schools visited.

Exhibit 13
Classroom Observation Summary: Student Interactions

	Observers' Mean Rating				
	Elementary		Middle		High
Student Characteristic	**SS**	**Coed**	**SS**	**Coed**	**SS**
Exhibit a sense of community	2.98	2.55	2.31	2.04	3.18
Interact positively with each other	3.34	3.00	2.63	2.41	3.45
Show respect for the teacher	3.55	3.14	3.39	3.00	3.36
Initiate class disruptions	1.74	2.60	1.63	1.82	1.63
Exhibit positive role modeling	2.82	1.86	1.88	1.57	3.06
Engage in leadership opportunities	2.00	2.00	2.00	1.85	2.65
Number of classroom observations	16.5	17	27	28	21

Note. Rating scale: 1 = *very little*, 4 = *extensive*.

Exhibit reads: *The exhibit shows the observers' mean ratings for single-sex and coed elementary, middle, and high schools on several student characteristics. The last row of the table indicates the average number of classrooms that were observed at each school level.*
Source: *RMC Research, Classroom Observations, 2005.*

Elementary Schools. The site visitors observed consistently positive interactions in the four single-sex elementary schools. During focus group sessions, girls in the single-sex elementary schools expressed feeling a greater sense of community in their current school than they had in a coed setting. Girls said that making friends and learning without boys around is easier. Parents at one school cited increased confidence and assertiveness in their daughters, which they attributed to the girls' school experience. They also believed that their daughters have more leadership opportunities in a single-sex setting. Parents of the boys in another school said that their sons are more eager to learn and compete academically than they had been in the coed setting. The site visitors did, however, observe more positive boy-girl interactions in the coed comparison school than in the dual academies when boys and girls interacted, such as between classes.

Middle Schools. The site visitors noted predominantly respectful interactions between students and teachers at one single-sex middle school but fewer positive interactions at the other. Peer

interactions were generally healthy. In both single-sex middle schools girls tended to have more positive same-sex peer interactions than boys. The site visitors found that the interactions between students and teachers in the coed middle school ranged from positive to troubling. Peer interactions were positive in the comparison middle school, and as in the single-sex schools the site visitors observed more positive same-sex peer interactions between girls than boys.

High Schools. Girls in the two single-sex high schools that were visited said they felt close to one another and to the teachers; students, teachers, and parents believed that a high level of support was available to the students[12]. Peer and student-teacher interactions in the classroom were positive, and the site visitors observed that interactions in the hall and the cafeteria at both schools were lively but orderly. Students and parents stated that higher quality teacher and student interactions are possible because the girls are not distracted by boys. Students described an increase in self-esteem since attending the single-sex school, and parents and administrators also suggested that single-sex schooling had increased the girls' confidence. Parents also asserted that single-sex schooling had provided their daughters' leadership skills and maturity. The availability of peer and adult role models was another benefit cited by multiple stakeholders. The girls admired their peer role models for their academic achievement and leadership skills and received social and moral guidance from teachers (male and female) in a way that they believed would not be possible in a coed setting.

Student Academic Achievement and Behaviors

Academic achievement outcomes for single-sex schools in the site visit sample were mixed, which may reflect differences in the populations they serve. Site visitors observed that students at single-sex schools were engaged in academic activities and tended to complete their homework.

The principal survey results indicate that student achievement in the single-sex schools was lowest at the middle school level: 28 percent of the students were at or above proficient in reading and 22 percent were at or above proficient in mathematics. At the elementary school level these figures are 49 percent and 35 percent respectively, and at the high school level they are 54 percent and 46 percent respectively.

The site visitors collected data on student achievement on state assessments, high school graduation rates, and college acceptance rates. Data on state assessments appear in Exhibits A11, A12, A13, and A14. None of the single-sex or coed elementary schools visited performed as well as their respective state averages. However, School C, an academy for girls, was above the district average in Grades 3 and 6 reading and in Grade 6 mathematics, even though 92 percent of the students were eligible for free or reduced-price meals compared to a district average of 58 percent.

Students in School F, a middle school dual academy, performed at or above the state averages in both reading and mathematics in all three grades served. Students in the other dual academy and the coed middle school performed well below the state averages. Only 19 percent of the students

[12] No all boy high schools were visited for this study.

at the higher performing dual academy were eligible for free or reduced-price meals compared to 92 percent at the other dual academy and 71 percent at the coed school. Also, all of the single-sex elementary and middle schools were only in their third, fourth, or fifth year of operation at the time of the site visits. The single-sex high schools, by contrast, had been operating between nine and 150 years.

At the high school level School I performed higher than both the district and state averages for both Grade 10 reading and mathematics. Scores in Grade 11 and 12 reading and mathematics were available for School J and its district. This girls' high school performed above the district average in Grade 11 reading and Grade 12 reading and mathematics. Both girls' high schools reported high graduation rates (89 percent and 97 percent) and nearly 100 percent college acceptance for the previous year's graduating classes.

The site visitors observed academic behaviors in 164 single-sex classrooms and 45 coed classrooms in the single-sex and coed schools visited (see Exhibit 14). Students in the single-sex elementary schools were more likely to complete homework than were students in the coed comparison elementary school, but they did not differ from students in the comparison school on engagement in academic activities. Students in the single-sex middle schools were more likely to be engaged in academic activities and more likely to complete homework than students in the comparison middle school. Students in the single-sex high schools exhibited high levels of engagement in academic activities and homework completion. The study did not include a comparison high school.

Exhibit 14
Classroom Observation Summary: Academic Behaviors

	Observers' Mean Rating				
	Elementary		Middle		High
Student Characteristic	**SS**	**Coed**	**SS**	**Coed**	**SS**
Engaged in academic activities	3.40	3.40	3.26	2.93	3.49
Completed homework	3.00	1.33	3.35	2.25	3.92
Number of classroom observations	16.5	17	27	28	21

Note. Rating scale: 1 = *very little*, 4 = *extensive*.

Exhibit reads: *The exhibit shows the observers' mean ratings for single-sex and coed elementary, middle, and high schools on two academic behavior characteristics. The last row of the table indicates the average number of classrooms that were observed at each school level. Observers in elementary school classrooms found no difference between single-sex and coed schools on engagement in academic activities, but observers at middle schools rated single-sex school students higher than coed school students. High school students were rated the highest among the three school levels on academic engagement.*
Source: *RMC Research, Classroom Observations, 2005.*

Student Extracurricular Activities

Extracurricular activities in the single-sex elementary schools visited were limited, and extracurricular activities at the middle and high school levels varied by school size.

The girls' elementary school offered after-school basketball and cheerleading in the 2004–05 school year, but the students were unsure whether those opportunities would be available again in 2005–06. Some students said they participated in after-school activities at the YMCA. The boys' school did not offer extracurricular activities but did receive some support from a local men's fraternity whose members took students to visit a local college campus and acted as mentors. One dual academy, which had offered choir, band, drama club, cheerleading, and dance prior to budget reductions, no longer offered those activities (although the neighboring YMCA's after-school program included several athletic, academic, and art activities). The other dual academy offered Boy Scouts, Girl Scouts, and a school-sponsored after-school program. Parents believed, however, that the after-school program lacked structure and enrichment opportunities.

In contrast, the coed elementary school visited by the study team offered several extracurricular activities for its students including several that were for one sex only. For girls the school offered Girl Scouts, cheerleading, basketball, and a social club. For boys the school offered Boy Scouts, basketball, and a social club. Students could also participate in the student council and be selected for the Principal's Club. In addition, the school provided a structured, comprehensive after-school program that offered dance, soccer, chess club, bake sales, swimming, and fashion shows through a partnership with a local community center. Students and parents noted that this school offered more academic and extracurricular choices than other public elementary schools.

Students in one single-sex middle school reported ample extracurricular activities and cited few sex-related differences in access to these activities. Most extracurricular activities were coed, with the exception of volleyball and cheerleading, which were open to girls only; flag football, which was open to boys only; and basketball, which had separate teams for boys and girls. Athletic team captainship and a student council offered leadership opportunities. Most of the student council leadership positions were filled by girls, although each grade level had a boy and girl representative.

The other single-sex middle school visited had fewer opportunities for participation in extracurricular activities. The school offered a few athletic activities, art, STARS[13] Club, and chess, but students were unsure about how to access the STARS Club. Additionally, the school had a student council that allocated an equal number of positions to boys and girls and separate leadership positions for boys and girls at each grade level. The school provided the site visitors with data on four athletic activities: dance, boys' basketball, girls' basketball, and cheerleading. Boys were involved in only one of these activities.

Of the three middle schools visited, the coed school offered the widest range of extracurricular opportunities including 11 non-athletic and seven athletic activities. Students and parents indicated that extracurricular activities were accessible and ample and that leadership

[13] STARS stands for Students Taking Action to Reach Society.

opportunities were open to both boys and girls. The athletic teams were coed, with the exception of one sport (basketball), for which the school offered separate teams for boys and girls.

Both of the single-sex high schools visited offered extracurricular activities that served a range of interests. The larger of the two high schools offered 35 activities, and the other high school offered 21. Staff in both schools believed that the activities provided leadership opportunities and allowed students to deepen friendships while pursuing their interests. The students stated that they were more willing to try to become activity leaders because they did not compete with boys to do so.

Implications for Further Study

The 19 single-sex schools studied for this evaluation varied greatly in terms of their organization and operation. Eight of the single-sex-schools were dual academies that served both boys and girls but separated students for all classes. Of the remaining 11 schools, three served only boys and eight served only girls. Thirteen of the 19 schools were the only single-sex or dual academies in their districts; the remaining six schools were three pairs of matched boys' and girls' schools. This study did not include schools that had only a few of their classes separated by sex; thus no generalizations should be made from this study to that type of school program.

The number of single-sex schools has increased substantially in recent years as a result of language in the *No Child Left Behind Act of 2001*, which authorizes school districts to use local or innovative program funds to offer single-sex schools and classrooms consistent with existing laws. In addition, in 2006 the U.S. Department of Education published amendments to the regulations for implementing Title IX of the *Education Amendments of 1972*, which provide school districts additional flexibility to offer nonvocational single-sex classes, extracurricular activities, and schools at the elementary and secondary levels.

This study sought to identify what is currently known from scientific research on the effects of single-sex schooling on academic achievement and other student outcomes, to summarize the characteristics of the public single-sex schools that were in operation in the United States in 2003, and to suggest future studies that could advance the knowledge base in the field. To achieve these purposes the study team conducted a systematic review of rigorous studies, a survey of principals and teachers in 19 of the 20 single-sex schools operating in 2003, and site visits to a sample of eight of these 19 schools.

The literature review identified approximately 14 theoretical benefits of single-sex schooling, and many of the survey and site visit interview questions were designed to explore staff beliefs about these purported benefits. Compared to a national sample of demographically similar coed schools, single-sex elementary and high schools reported a more positive school climate. Single-sex middle schools reported a more negative school climate than the national sample of coed middle schools.

Findings from site visits to two single-sex schools in the same district suggested that simply turning two schools into single-sex schools is not sufficient for improving student achievement. In this pair of schools, the girls' school made substantial improvements in student achievement, but the boys' school did not. The girls' school staff spent more time planning and researching how to best serve the needs of girls, enjoyed more stability in school leadership, and fostered more positive staff attitudes toward single-sex schooling. Staff at the girls' school also put more effort into recruiting families and marketing their school as a positive academic choice for girls. The girls had female role models at their school, whereas all of the teachers at the boys' school were female.

Future Studies of Single-Sex Schooling

The present study[14] was descriptive in nature and not designed to address questions of impact. To better understand the differences between single-sex schools and coed schools in terms of their impact on student outcomes, a series of experimental studies or strong quasi-experimental studies need to be conducted in public single-sex schools in the United States. None of the studies included in the systematic literature review were conducted on public schools in this country.

Conducting good experimental research on single-sex schooling is difficult and two issues are particularly troublesome: random assignment and the multilevel nature of schooling. In all experiments in the social sciences, understanding the effect of some intervention requires an understanding of what would have happened in the absence of the intervention. Without random assignment, however, it is impossible to separate the effects of the intervention (single-sex schooling) from other omitted variables (e.g., family background, motivation, teacher quality, school climate) that might also affect the observed outcome. Randomly assigning students may violate the *Equal Educational Opportunities Act,*[15] unless all assigned students are willing to attend either type of school. Also, under Title IX and other employment laws, it would be illegal to assign teachers to particular classes based on the teachers' sex. In addition, random assignment of students may meet with political and community resistance and therefore be difficult to implement.

The second problem in education experiments is that schooling is, by nature, a multilevel statistical problem. Students attend school in classrooms and classrooms are grouped by school building, and this reality must be taken into account. Failure to do so will result in a potentially serious underestimation of the standard error of the test statistic (e.g., a *t*-test or *F*-test). Put more simply, ignoring the multilevel structure of the data would cause probability values from the statistical tests to be too small, which in turn could lead a researcher to erroneously conclude that one condition is better than the other when in reality the conditions did not differ. Thus, the multilevel nature of schooling increases the statistical power requirements for studying the effects of single-sex schooling.

Options for Conducting Experimental Research on Single-Sex Schooling

Several potential models could be employed to study the relative effects of single-sex schooling. In each model, the assumed reason for conducting the study is to answer the question "What are the effects of attending a single-sex school relative to attending a comparable coed school?" The intent is to isolate the effects of single-sex schooling from other variables that might also affect student outcomes such as teacher quality, student background characteristics, principal leadership, and so on.

Although randomized assignment can eliminate selection bias, it is difficult to implement in a school setting. First, parents must agree to allow their children to be randomly assigned to either

[14] This section is derived from a paper written by Jeffrey Valentine (2006).
[15] See 20 U.S.C. §1703(c).

the treatment or control group. Teachers must also agree to random assignment and be prepared to teach a single-sex or coed class. In addition, the study must take into consideration students who decide to opt out of the program before completion. Attrition biases the results of the study, often overestimating the effect of the intervention due to the premature loss of students who are dissatisfied with the program. Finally, researchers would need to recruit at least three schools located in close proximity to each other to participate in the study: one all boys', one all girls', and one coed school. A high-quality randomized controlled experiment would include several multiples of three to reduce the chances that the study is measuring a localized effect.

Longitudinal study of single-sex schooling. Another possibility for studying single-sex schooling involves a longitudinal approach that follows a sample of students over an extended period of time to measure pre and post trends. This type of study uses student background information in conjunction with a detailed academic history to arrive at relatively precise estimates of what school achievement might have been had single-sex schooling not been implemented. Although such a design would not yield an unambiguous answer to the question "What are the effects of attending a single-sex school relative to attending a coed school?" it does represent a reasonable step in the research process.

Analyses of large datasets. The federal government and many states maintain extensive databases of information on student background, academic achievement, and school behavior, among other variables. If public single-sex schooling grows, it should be possible to utilize these databases to address the question of how single-sex schools affect the achievement of the students who attend them. The great strength of these databases is their comprehensiveness and relative accessibility. Relying on aggregated school- or district-level data found in these large datasets—even if they include some information about individual students—increases the chance that omitted variables may bias the results of the evaluation. The analyses tend to be sensitive to beginning assumptions, which if altered slightly may have a notable impact on the study's conclusions. Critics may reasonably disagree about which analysis is the right one (e.g., see the debate between Lee and Bryk [1986] and Marsh [1989] on the effects of single-sex schooling). In addition, analysis of these types of datasets is likely to yield little insight into the question of whether practices in single-sex schools differ from those in coed schools. Despite these limitations, analysis of existing datasets would contribute to the discussion about the effects of single-sex schools.

Other models of single-sex schooling. Although this section has focused only on experimental designs in which boys and girls attend school in separate buildings, other models could also be studied. Of the 19 schools that participated in the survey portion of the current study, eight (including all of the middle schools) were organized as dual academies. This model could also be examined in future studies, but the findings from this study suggest that these schools provide qualitatively different experiences to students than schools that serve only one sex.

Treatment definition and intensity. Several of the schools visited for the current study did very little to prepare teachers to teach in a single-sex setting. If the U.S. Department of Education funds future research studies of single-sex schools, the study team suggests that a training and technical assistance component for grantees be included to ensure that the treatment is more than the segregation of boys and girls. If proven strategies exist, they should be shared with teachers in both single-sex and coed conditions. Doing so would enable researchers to determine whether

the absence of the other sex is key to improving academic achievement or whether sex-specific strategies can be applied equally effectively in coed classrooms.

Summary

Although random assignment would help researchers untangle the complex relationships in a study of single-sex schooling, faithful implementation of a randomization scheme is likely not viable. The realities are such that a randomization scheme would nearly certainly be undermined, probably to a significant extent. Three strategies for dealing with these problems seem most sensible. First, researchers should design a qualitative component to the experimental study that is geared to understanding why the randomization mechanism was undermined. This aspect of the research will be essential. Absent a good understanding of the processes leading to a breakdown of random assignment, researchers will be unable to address this problem analytically. In addition, researchers should use prior empirical work (both qualitative and quantitative) to identify variables that should be measured and potentially used as statistical controls (similar to the manner in which one would conduct a quasi-experimental study on single-sex schooling). Researchers should plan on following the study participants over a relatively long period of time because a longitudinal study will yield data that researchers can use to evaluate both the effects of the randomization failure and the relative effects of attending a single-sex school.

Ultimately, the problems of the likely undermining of the randomization scheme and the difficulties inherent in conducting field-based research of this magnitude mean that any single study is not likely to provide a satisfactory answer to the question “Do single-sex schools raise student achievement more than coed schools?” Instead, that answer will emerge slowly from relatively small experiments that are informed by the lessons learned in previous studies.

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Appendix A:
Supplementary Exhibits

Exhibit A1
Classroom Observation Summary: Elementary Schools

Measure	Observers' Ratings by School					
	A	B	C	D	SS Mean	E
Number of Classroom Observations	13	24	3	28	16.5	17
Teacher Characteristics						
Sets high academic expectations	3.54	3.25	3.33	3.32	3.34	3.00
Shows sensitivity to sex differences in learning or maturity	3.57	2.88	3.00	2.89	3.00	2.57
Maintains order and control	3.54	3.30	3.67	3.40	3.41	3.29
Reinforces sex role stereotypes	—	—	1.00	1.00	1.00	3.29
Promotes students' self-esteem	3.38	2.71	3.67	2.50	2.84	2.85
Provides opportunities for non-sex stereotyped activities	3.86	3.67	—	3.67	3.72	2.83
Positive Interactions With Boys						
Academic	17.00	19.92	—	17.71	18.74	4.82
Behavioral	8.67	4.83	—	4.47	5.19	2.35
Other	0.83	0.17	—	0.00	0.19	0.12
Negative Interactions With Boys						
Academic	0.00	1.29	—	4.12	2.15	2.59
Behavioral	8.67	2.04	—	8.53	5.23	7.00
Other	0.00	0.04	—	0.00	0.06	0.06
Positive Interactions With Girls						
Academic	21.71	—	40.33	17.24	20.96	5.35
Behavioral	6.86	—	2.67	1.88	3.26	3.12
Other	0.29	—	0.00	0.12	0.15	0.12
Negative Interactions With Girls						
Academic	0.00	—	0.33	2.88	1.85	2.41
Behavioral	5.43	—	1.33	4.76	4.56	4.65
Other	0.00	—	0.00	0.18	0.11	0.59
Boys' Academic Time on Task						
81–100%	82%	70%	—	53%	66%	59%
61–80%	10%	16%	—	27%	20%	25%
41–60%	8%	9%	—	9%	8%	8%

exhibit continues

Exhibit A1 (continued)

	A	B	C	D	SS Mean	E*
Girls' Academic Time on Task						
81–100%	91%	—	82%	73%	80%	62%
61–80%	9%	—	9%	12%	11%	25%
41–60%	0%	—	5%	9%	5%	4%

* School E is the coed comparison school for School A.
Note: Rating scale: 1 = low, 4 = high. Interaction scores represent counts of relevant teacher-student interactions. Dashes indicate that data were not available.

Exhibit A2
Classroom Observation Summary: Middle Schools

Measure	Observers' Rating by School			
	F	G	SS Mean	H[a]
Number of Classroom Observations	30	24	27	28
Teacher Characteristics				
Sets high academic expectations	2.77	2.48	2.63	2.75
Shows sensitivity to sex differences in learning or maturity	2.11	2.21	2.16	2.00
Maintains order and control	3.33	2.96	3.17	3.11
Reinforces sex role stereotypes	1.40	1.00	1.29	1.00
Promotes students' self-esteem	2.58	2.33	2.47	2.21
Provides opportunities for non-sex stereotyped activities	3.25	2.71	3.00	3.27
Positive Interactions With Boys				
Academic	25.59	10.64	19.71	5.00
Behavioral	2.41	1.91	2.21	0.89
Other	1.47	1.55	1.50	1.43
Negative Interactions With Boys				
Academic	1.76	0.55	1.29	0.57
Behavioral	4.53	2.45	3.71	1.86
Other	0.35	0.00	0.21	0.14
Positive Interactions With Girls				
Academic	17.60	7.77	13.04	4.04
Behavioral	1.53	1.23	1.39	0.43
Other	1.80	1.38	1.61	0.96
Negative Interactions With Girls				
Academic	1.07	0.69	0.89	0.29
Behavioral	2.00	5.38	3.57	1.07
Other	0.00	0.00	0.00	0.04
Boys' Academic Time on Task				
81–100%	77%	51%	64%	44%
61–80%	16%	35%	24%	38%
41–60%	6%	10%	9%	12%

exhibit continues

Exhibit A2 (continued)

Girls' Academic Time on Task	F	G	SS Mean	H[a]
81–100%	85%	49%	64%	52%
61–80%	12%	17%	15%	34%
41–60%	2%	19%	14%	11%

[a]School H is the coed comparison school for School F.
Note: Rating scale: 1 = low, 4 = high.

Exhibit A3
Classroom Observation Summary: High Schools

	Observers' Rating by School		
Measure	**I**	**J**	**Mean**
Number of classroom observations	20	22	21
Teacher Characteristics			
Sets high academic expectations	3.06	3.00	3.03
Shows sensitivity to sex differences in learning or maturity	—	2.00	2.00
Maintains order and control	3.30	3.27	3.29
Reinforces sex role stereotypes	—	—	—
Promotes students' self-esteem	2.77	2.89	2.84
Provides opportunities for non-sex stereotyped activities	—	—	—
Positive Interactions With Girls			
Academic	8.25	8.59	8.43
Behavioral	0.20	0.55	0.38
Other	0.00	0.73	0.38
Negative Interactions With Girls			
Academic	1.10	0.95	1.02
Behavioral	2.30	1.91	2.10
Other	0.00	0.27	0.14
Girls' Academic Time on Task			
81–100%	70%	69%	68%
61–80%	25%	25%	25%
41–60%	5%	6%	6%

Note. Rating scale: 1 = low, 4 = high.

Exhibit A4
Perceptions of School Problems: Elementary Schools

	Teachers' Mean Rating	
Problem Area	**SS**	**Coed**
Student tardiness	2.46	2.71
Student absenteeism	2.45	2.58
Student class cutting	1.27	1.40
Student pregnancy	1.03	1.05
Students dropping out	1.07	1.09
Student apathy	2.37	2.27
Lack of parental involvement	3.13	3.14
Students unprepared to learn	3.11	3.19
Poor student health	2.47	2.39
Teacher absenteeism	1.25	1.81
Poverty	3.46	3.24
Number of respondents	92	151

Note. Rating scale: 1 = *not a problem;* 4 = *serious problem.*

Exhibit A5
Perceptions of School Problems: Middle Schools

	Teachers' Mean Rating	
Problem Area	**SS**	**Coed**
Student tardiness	3.07	2.77
Student absenteeism	3.11	2.73
Student class cutting	2.60	2.34
Student pregnancy	1.77	1.54
Students dropping out	1.67	1.64
Student apathy	2.97	2.72
Lack of parental involvement	3.35	3.16
Students unprepared to learn	3.57	3.44
Poor student health	2.45	2.33
Teacher absenteeism	2.30	2.14
Poverty	3.29	3.30
Number of respondents	187	206

Note. Rating scale: 1 = *not a problem;* 4 = *serious problem.*

Exhibit A6
Perceptions of School Problems: High Schools

	Teachers' Mean Rating	
Problem Area	**SS**	**Coed**
Student tardiness	2.93	3.30
Student absenteeism	2.70	3.33
Student class cutting	2.27	3.01
Student pregnancy	2.41	2.61
Students dropping out	1.82	2.81
Student apathy	2.64	3.21
Lack of parental involvement	2.55	3.33
Students unprepared to learn	2.74	3.48
Poor student health	2.11	2.52
Teacher absenteeism	1.68	2.10
Poverty	2.86	3.22
Number of respondents	199	366

Note. Rating scale: 1 = *not a problem;* 4 = *serious problem.*

Exhibit A7
Climate Constructs and Scale Reliabilities

Construct	Cronbach's a
Leadership	.87
The principal lets staff members know what is expected of them.	
The school administration's behavior toward the staff is supportive and encouraging.	
My principal enforces school rules for student conduct and backs me up when I need it.	
Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.	
Most of my colleagues share my beliefs and values about what the central mission of the school should be.	
The principal knows what kind of school he/she wants and has communicated it to the staff.	
In this school, staff members are recognized for a job well done.	
Student misbehavior	.66
The level of student misbehavior in this school interferes with my teaching.	
The amount of student tardiness and class cutting in this school interferes with my teaching.	
Instructional support	.59
Necessary materials such as textbooks, supplies, and copy machines are available as needed by staff.	
Routine duties and paperwork interfere with my job of teaching.	
I am satisfied with my class size.	
I am given the support I need to teach students with special needs.	
I receive a great deal of support from parents for the work I do.	

Exhibit A8
School Climate: Elementary Schools

School Climate Item	Teachers' Mean Rating	
	SS	Coed
a. There is a great deal of cooperative effort among the staff members.	3.24	3.17
b. I make a conscious effort to coordinate the content of my courses with that of other teachers.	3.22	3.28
c. I sometimes feel it is a waste of time to try to do my best as a teacher.	1.42	1.42
d. I am generally satisfied with being a teacher.	3.45	3.33
e. I am satisfied with my teaching salary.	2.20	2.08
f. I worry about the security of my job because of the performance of my students on state and/or local tests.	2.53	2.26

Note. Rating scale: 1 = *strongly disagree;* 4 = *strongly agree.*

Exhibit A9
Teacher Ratings of School Climate: Middle Schools

School Climate Item	Teachers' Mean Rating	
	SS	Coed
a. There is a great deal of cooperative effort among the staff members.	2.89	2.97
b. I make a conscious effort to coordinate the content of my courses with that of other teachers.	2.95	3.03
c. I sometimes feel it is a waste of time to try to do my best as a teacher.	1.81	1.64
d. I am generally satisfied with being a teacher.	3.05	3.18
e. I am satisfied with my teaching salary.	2.10	2.06
f. I worry about the security of my job because of the performance of my students on state and/or local tests.	2.28	2.30

Note. Rating scale: 1 = *strongly disagree;* 4 = *strongly agree.*

Exhibit A10
Teacher Ratings of School Climate: High Schools

School Climate Item	Teachers' Mean Rating	
	SS	Coed
a. There is a great deal of cooperative effort among the staff members.	3.12	3.04
b. I make a conscious effort to coordinate the content of my courses with that of other teachers.	2.85	3.01
c. I sometimes feel it is a waste of time to try to do my best as a teacher.	1.60	1.70
d. I am generally satisfied with being a teacher.	3.32	3.33
e. I am satisfied with my teaching salary.	2.28	2.32
f. I worry about the security of my job because of the performance of my students on state and/or local tests.	1.92	2.15

Note. Rating scale: 1 = *strongly disagree;* 4 = *strongly agree.*

Exhibit A11
Dual Academy Elementary Schools: Students At and Above the Proficient Level

	Percent of Students Proficient and Above in 2003–04			
State Test Indicator	**School D**	**State Average**	**School E**	**State Average**
Grade 4 Reading	50.0	79.5	29.0	63.0
Grade 4 Mathematics	30.6	60.8	48.0	79.0

Note. Achievement test data for School A was not available. School E is a comparison school for School A.

Exhibit A12
Single-Sex Elementary Schools: Students At and Above the Proficient Level

	Percent of Students Proficient and Above in 2004–05				
State Test Indicator	**School B**	**School C**	**District B and C**	**Similar Districts**	**State B and C**
Grade 3 Reading	41.9	68.3	66.4	63.8	77.3
Grade 3 Mathematics	22.6	39.0	47.8	48.6	70.4
Grade 4 Reading	50.0	35.7	62.9	58.6	76.6
Grade 4 Mathematics	31.3	26.2	49.6	49.7	65.5
Grade 5 Reading	39.3	53.3	59.5	56.2	76.9
Grade 6 Reading	12.9	89.4	60.6	52.3	69.8
Grade 6 Mathematics	6.5	59.6	46.8	43.0	62.5

Note. The state requirement is for 75 percent of students to be at or above the proficient level.

Exhibit A13
Middle Schools: Students At and Above the Proficient Level

	Percent of Students Proficient and Above in 2004–05				
State Test Indicator	**School G**	**State Average G**	**School F**	**School H**	**State Average F and H**
Grade 6 Reading			65	55	65
Grade 6 Mathematics			49	38	49
Grade 7 Reading	17	60	65	52	
Grade 7 Mathematics			53	22	
Grade 8 Reading			77	57	
Grade 8 Mathematics	10	33	51	27	

Note. School H is a comparison school in the same district as School F. State scores reported for Schools F and H are the average of Grades 6–8.

Exhibit A14
High Schools: Students At and Above the Proficient Level

State Test Indicator	Percent of Students Proficient and Above in 2003–04				
	School I	District Average-I	State Average-I	School J	District Average-J
Grade 10 Reading	76.4	46.4	67.6		
Grade 10 Mathematics	37.8	36.0	57.5		
Grade 11 Reading				80.0	53.8
Grade 11 Mathematics				48.6	52.8
Grade 12 Reading				81.0	29.2
Grade 12 Mathematics				59.5	55.5

Appendix B:
Site Visit Reports

Dual Academy Elementary Schools

A team of educational researchers conducted three-day site visits at three elementary schools during October and November 2005. The data in this report were gathered in interviews, observations, and focus groups with the schools' leaders, founding members, teachers, staff, students, and parents. Additional information was gathered from the schools' state report cards, Web sites, and charter applications. (For more information, see Data Sources and Methodology section).

School Overview

The study team visited two dual academy elementary schools and one coed comparison school. All of the schools were located in high-poverty, urban communities and served predominately African-American, at-risk students. All of the schools required student uniforms. Enrollment at the three schools ranged from 237 to 840 students, and the percentage of students who qualified for free or reduced-price meals ranged from 50 percent to 100 percent. Exhibit B1 displays descriptive data for each of the three schools.

School 1 was a kindergarten through Grade 4 charter school located in a midsized city in the northeastern United States. The school was divided into two distinct charter schools—an all girls' school and an all boys' school—but they functioned as a single school, sharing the same facilities, principal, teachers, staff, and educational program.

School 2 was a prekindergarten through Grade 5 district school located in a large city in the Northwest. The school transitioned from a coed to a single-sex school in 2001. Initially, all of the classes were single-sex, but at the time of the site visit several classes had reverted to coed in an effort to equalize class sizes.

School 3 was a kindergarten through Grade 6 charter school located in the same city as School 1. This coed school, which was managed by Edison Schools, Inc., served as a comparison school for this study.

Exhibit B1
Descriptive Data on the Observed Elementary Schools

Variable	School 1	School 2	School 3
Year established	2002	2001	1999
Charter or District	2 Charter (1 for girls, 1 for boys)	District	Charter
Type	Dual academy	Dual academy	Coed
Grades	K–4	Pre-K–5	K–6
Enrollment	237	297	840
Percent Receiving Free or Reduced-Price Meals	100%	93%	49%
2003–2004 demographics	▪ 86% African-American ▪ 3% Caucasian ▪ 10% Hispanic ▪ 1% Middle Eastern	▪ 63% African-American ▪ 19% Hispanic ▪ 15% Asian ▪ 2% Caucasian	▪ 93% African-American ▪ 6% Hispanic ▪ Less than 1% Caucasian and Native American
Leadership	1 Principal for both charter schools 1 Business manager	1 Principal	1 Principal 2 Academy directors

Educational Program

The principals at these schools had primary responsibility for making personnel decisions, although selection committees at each school also played a role in hiring new teachers. Most of the teachers were white and female. Two of the three schools noted high teacher turnover rates. An administrator at School 3 (the coed comparison school) cited a yearly turnover rate of about 75 percent. School 2 had a similarly high turnover rate, which the principal primarily attributed to a reduction in staff allocations. School 3's principal commented that it was difficult for his school to match the district's union benefits, tenure, and contract systems and, consequently, to attract highly qualified teachers. In contrast, School 1 had relatively low teacher turnover rates, which a founding member attributed to teacher pay that is higher than the union wage scale, the same benefits package that district teachers receive, and a nonunion environment in which concerns are addressed immediately. School 1 teachers more often stated that the school had actively recruited them.

While the curriculum and instructional materials at each school differed, all three followed a standard curriculum and required teachers within each grade level to use the same instructional materials. The charter schools (Schools 1 and 3) had more autonomy over their curriculum and instructional materials. School 1, a single-sex charter school, had selected Core Knowledge Standards, Accelerated Math, Saxon Math, Accelerated Reader, Write One Source (writing and penmanship), and Open Court (language arts). Students at School 1 also participated in a visual and performing arts program, physical education, and computer classes. School 2 had selected Addison-Wesley and Turk Investigations for mathematics and Houghton-Mifflin for reading and language arts, from a district list of approved materials. In general, School 2's curriculum was

the same as it had been prior to the conversion to single-sex classrooms. Students at School 2 also participated in computer science and physical education classes. School 3, the coed charter school, used Chicago Mathematics and Success for All for reading and language arts. School 3 received a Reading First grant that supports intensive reading instruction for students in kindergarten through Grade 3 and professional development for the teachers. Students at School 3 also participated in physical education, music, and art classes.

All three schools had provided staff with general training on such topics as the curriculum, academic expectations, and cultural issues. Both single-sex schools said they provided training or staff development specifically geared toward single-sex schooling. School 2 required its teachers to read the book *Empowering African-American Males* by Mychal Wynn. Administrators and teachers at both single-sex schools expressed a need and desire for professional development on teaching and learning in single-sex environments.

School 1's administrators, teachers, and parents expressed the most satisfaction with their school's effectiveness. A founding member attributed the school's success in part to its leadership approach: the principal served as the academic leader and a business manager was responsible for fiscal matters. School 1 hired consultants to assist with the design of the building and hired subject-based teachers for all grades, including two certified classroom teachers for each lower grade classroom. Administrators at School 2 unanimously asserted that the lack of resources to support music, art, and extracurricular activities had negatively impacted the school's effectiveness. An administrator who participated in a leadership team focus group at School 3 commented, "This school has the opportunity to be extremely successful and we have the tools. We shoot ourselves in the foot time and time again."

Student Interactions and Behaviors

Interview, focus group, and observational data consistently indicated positive teacher-student and student-student interactions at the single-sex schools. The majority of students who participated in focus groups believed that fellow students were supportive and positive role models, making friends was easy, and less teasing and fighting occurred in their schools than in other public schools. Students did mention bullies and cliques, but suggested that their presence was minimal. Students—regardless of sex—expressed a preference not to be required to wear a school uniform. Most students complained that uniforms limit their freedom of expression, but some cited practical problems such as white shirts that easily show dirt.

The observational data revealed that teachers and staff more often responded to students positively than negatively. School 1 had the highest mean score on all items related to positive teacher-student interactions and demonstrating sensitivity to sex differences in learning or maturation. The majority of the teachers in School 1 thought that boys and girls learn differently and should be separated into single-sex classes to address those differences. Only one teacher in this school said that her interactions with students were based on abilities—not sex. In focus groups, teachers in Schools 1 and 2 (the single-sex schools) exhibited more sensitivity to perceived sex differences in learning and maturation. School 2 teachers remarked that boys need more time to learn and complete reading, writing, and thinking tasks and girls need more prompting. They believed that boys compete to answer questions as quickly as possible—regardless of whether the answer is right or wrong—but girls want to give only correct answers.

The teachers also stated that boys want to be praised for working hard, whereas girls want to be praised for doing what the teacher asks of them. The teachers also described boys as more physical and having shorter attention spans than girls.

In contrast, teachers in School 3 were less likely to mention sex differences, describing instead individual needs and how they address them. A few teachers did, however, comment that boys are more aggressive and girls tend to "respond more emotionally."

Teachers at all three schools believed that boys are more difficult to control in the classroom because they are more active than girls. A teacher in School 2 asserted that in coed classes girls counteract the competitive nature of the boys, which makes the classes more manageable. Teachers in all three schools repeatedly said that classroom disruptions caused by boys tend to be more physical and distracting than the disruptions caused by girls, which tend to be the result of chattiness. Staff members and parents in School 3 suggested that the lack of a playground and recess period negatively impacted student behavior. Stakeholders at all three schools believed that lack of teaching experience or large class sizes diminished teachers' ability to maintain classroom order.

The site visit teams observed more aggressive behavior in boys than girls across the schools. Boys in School 2 received the lowest mean score on aggressiveness and boys in School 1 received the highest score. No aggressive behavior was observed among the girls in School 2 and minimal aggression was observed among the girls in Schools 3 and 1. Girls also were observed teasing other students less than boys.

Observation of teachers' interactions with students in the classroom revealed that teachers engaged in more positive academic interactions with girls than boys—with the exception of School 2, where the opposite was true. In all cases, girls had fewer behavioral interactions with teachers than boys. Teachers at Schools 1 and 2 believed that same-sex teachers are important role models for students, particularly boys. The principal stated, "Classroom climate and character changes when [boys] have a male leader."

Student Achievement and Behaviors

School leaders, teachers, and parents in all of the schools described their students as achievement oriented. They also described girls as more academically oriented and better behaved than boys. Teachers in all three schools were observed setting high academic expectations, though Schools 1 and 2 (the single-sex schools) received higher scores than School 3 on this item. Students expressed an awareness of their school's academic expectations and believed that their teachers want them to succeed. They also articulated an understanding of the relationship between academic achievement and future success. Teachers, parents, and students all mentioned the importance of incentives for academic achievement: all three schools offered students various rewards for academic success and good behavior.

Exhibit B2 displays overall fourth-grade state achievement data for Schools 2 and 3 (School 1 lacked a fourth-grade class the year of the test administration). For both schools, the percentages of students who performed at or above proficiency in reading and mathematics were lower than their state averages. State achievement data were not available for other grades.

Exhibit B2
Students At and Above the Proficient Level

	Percent in 2003–2004			
State Test Indicator	**School 2**	**State 2**	**School 3**	**State 3**
Grade 4 Reading	50.0	79.5	29.0	63.0
Grade 4 Mathematics	30.6	60.8	48.0	79.0

Note. Data for School 1 not available. School 2 is a comparison school for School 1.

Across the schools, the teachers' instructional approach was primarily interactive whole class direct instruction. Small-group instruction, heterogeneous small-group activities, independent work, and experiential activities were observed most often in School 2. The learning objectives for lessons were most clear in School 1 and least clear in School 3. During the classroom observations, students in School 1 were engaged in academic activities more than students in the other schools. Parents in all of the schools expressed satisfaction with their children's level of academic engagement. Across the schools teachers remarked on the critical role parents play in ensuring that students satisfactorily complete homework, and students in School 1 were rated highest in terms of homework completion. Teachers generally described parents' expectations regarding their children's academic achievement as average, though slighter more parental involvement was reported at School 1. Parents stated that they were very involved and interested in their children's academic success.

To track student achievement, all of the schools regularly test their students. School 1 tested its students on particular benchmarks every 6 weeks. School leaders and teachers received the results within 48 hours of test administration, and teachers adapted their instruction to students' individual needs. School 3 closely followed Edison's monthly benchmarks in language arts, reading, mathematics, social studies, and science to monitor student achievement. Stakeholders in all of the schools noted that the girls were achieving at higher levels than the boys on standardized and curriculum-based tests. Girls' achievement at School 2 had increased steadily since the school converted to single-sex classrooms. The boys' scores increased initially but steadily decreased in recent years. One teacher in School 3 asserted that the girls are more focused on academics than the boys, and girls take the benchmarks more seriously.

Longitudinal data on School 1 show distinct differences between girls' and boys' reading and mathematics achievement. Upon entering the school, the girls were in the 50th percentile in reading and improved to the 69th percentile. In contrast, the boys entered at the 20th percentile in reading and had improved each year but were still below the achievement level of the girls. However, the boys entered the school with much higher mathematics scores than the girls. School leaders contended that single-sex classrooms allowed teachers to address the distinct remediation needs of girls and boys in these subjects.

In all three schools girls were observed on task more than boys (60 percent and 53 percent of the time or more, respectively). Students of both sexes spent more time on task in School 1 than in the other two schools. Students who participated in the focus groups at Schools 1 and 2 said they learned better in single-sex classes. Girls stated that boys interfere with learning by teasing and

frustrating them in class. Boys described girls as loud, overly talkative, and distracting. Both boys and girls expressed a strong preference for single-sex schools and for their own school.

Student Extracurricular Activities

School 2 offered the fewest extracurricular activities. Prior to budget reductions, the school's offerings had included choir, band, drama club, a dance group, cheerleading, and other activities. At the time of the site visit School 2 students could participate in computer activities, gym, art, soccer, football, basketball, and kickball through a neighboring YMCA's after-school program. School 1 offered Girl Scouts, Boy Scouts, and an after-school program from 4 until 6 pm. Parents stated that the after-school program could be better and suggested hiring trained professionals to operate the program (rather than classroom teachers). They also believed that the after-school program lacked structure and opportunities for enrichment. A parent whose child transferred to School 1 from School 3 commented that School 3 had a better after-school program.

In contrast to the single-sex schools observed, School 3 listed the most extracurricular activities for students including some single-sex activities. For girls the school offered Girl Scouts, cheerleading, basketball, and the Delicate Diamonds social club. For boys the school offered Boy Scouts, basketball, and the Distinguished Gentlemen social club. Girls and boys could also participate in the Student Council or be selected for the Principal's Club. The school also offered a structured, comprehensive after-school program that partnered with a community center to offer dance, soccer, chess club, bake sales, swimming, and fashion shows. Students and parents in School 3 remarked that the school offered more academic and extracurricular choices than other public schools.

Conclusion

The schools described in this report all served low-income predominately minority students, but they were distinct in terms of their educational programs, extracurricular opportunities, and student achievement. The schools used various curricular and instructional materials, but the charter schools had more control over their materials. Staff at all of the schools expressed a strong desire for more training and professional development on single-sex education—two of the schools had not received any training on the different learning styles of boys and girls.

The data on student interactions and behaviors revealed that teachers more often engaged in positive academic and behavior interactions with girls than with boys. In terms of achievement, the girls outperformed the boys, particularly in reading. In the case of School 1 the achievement gap between the sexes was decreasing and in the case of School 2 the gap was increasing. Finally, the schools varied in their extracurricular offerings. Due to budget cuts, School 2 offered very few extracurricular activities, whereas School 3 offered many—including single-sex opportunities.

Single-Sex Elementary Schools

A team of educational researchers conducted three-day site visits at two elementary schools in the same district during October and November 2005. The data in this report were gathered in interviews, observations, and focus groups with the schools' leaders, founding members, teachers, staff, students, and parents. Additional information was gathered from the schools' state report cards and Web sites.

This pair of elementary schools is discussed separately from the other three elementary schools visited because they represent a unique model in terms of the origin of single-sex schooling. In this district, the superintendent announced in the spring of 2003 that two of the district's elementary schools would become single-sex the next year: one would become an all girls' academy and the other would become an all boys' academy. The superintendent hoped to appeal to the population that the district was losing to charter schools and wanted to offer two more academically focused schools. School staff were not consulted in this decision, and the staff at each school addressed the change in markedly different ways. By the fall of 2005 the girls' school had increased enrollment and student achievement, whereas these same measures declined markedly at the boys' school.

School Overview

The girls' and boys' academies were both central city elementary schools that were housed in older buildings in African-American neighborhoods. Any student in the district could choose to attend these schools and the district provided transportation. Nearly all of the students qualified for free or reduced-price meals. The schools competed for students with over 50 charter schools, and over half of the students at each school lived outside of their school's attendance area. In fall 2005 the girls' school enrolled 340 students, and the boys' school enrolled only 150 students. The boys' school had had three principals in the 2½ years prior to the site visit and was to have a fourth principal before the 2005–06 school year ended. In contrast, the girls' school had had the same principal for several years. Both schools had experienced some staff turnover in recent years because the district's declining enrollment had forced layoffs of less senior teachers.

The two schools differed in ways beyond the stability of the leadership. The teachers and administrators at the girls' school supported the change to an all girls' school and had spent many hours over the summer of 2003 planning. Staff decided to raise the bar on attendance, discipline, academics, and parent involvement and to require students to wear uniforms—the first school in the district to do so. Staff actively marketed the school through an attractive brochure, yard signs, newspapers, television, radio, churches, civic organizations, and word of mouth. In contrast, staff at the boys' school had spent little time preparing to teach in an all boys' setting and believed their school was perceived as the place to send problem boys. The sharp decline in enrollment at the boys' school was attributed to its low level of academic achievement, the fact that the school was on a list of schools that might close in the near future, and the district's lack of support for the school.

Educational Program

The girls' academy served students in kindergarten through Grade 7 in two classrooms at each grade level, except for Grade 1, which had three classrooms, and Grade 7, which had one classroom. The boys' academy served students in kindergarten through Grade 6 in two classrooms per grade level, except for kindergarten and Grades 5 and 6, which had only one classroom each. In addition, the schools had two special education classrooms: one at the primary level and one at the intermediate level. Students benefited from a variety of teacher specialist offerings each week: art, music, mathematics, physical education, computer lab, and band and orchestra for Grades 5 through 7. Other part-time staff included counselors, school psychologists, nurses, and speech therapists. Most of the staff at the two schools were female, but the principal and two of the intermediate grade teachers at the girls' school were male. Teacher hiring was handled at the district level, and declining enrollment across the district resulted in teachers with more seniority displacing two of the newer teachers at the girls' school in 2005. A sharp drop in enrollment at the boys' school in fall of 2005 resulted in the loss of a kindergarten and Grade 5 teacher. In spite of the lack of control over hiring decisions, the girls' school administration had maintained a cohesive staff with positive attitudes about their school. In contrast, two of the teachers at the boys' school expressed very negative attitudes toward teaching at an all boys' school but had been unable to transfer to another school. All of the staff at both schools were fully certified to teach at the elementary level, and about 40 percent of teachers at the girls' school and 33 percent of teachers at the boys' school had masters' degrees.

Staff at the girls' school had worked hard to accommodate the learning needs of the girls. JoAnn Deak provided an in-service training on how girls learn, and staff read and discussed her book, *Girls Will Be Girls.* Staff spent many hours in the summer of 2003 planning the school's new policies and procedures. Staff also participated in professional development on the state's learning standards, assessment strategies in mathematics and reading, the computer curriculum software, differentiated learning, and interactive decision making. Regular grade level meetings provided opportunities to discuss single-sex schooling issues. During the site visit both administrative and teaching staff indicated an interest in learning more about teaching girls.

Teachers at the boys' school said they had received some professional development on teaching boys about a week before the school opened. They did not feel that the training was productive and expressed a need for more information on effective methods and strategies for teaching African-American boys. Some of the staff had attended a recent event at which Michael Gurian spoke about his new book, *The Minds of Boys.* One staff member mentioned that the school improvement plan called for more professional development, but it had not yet been implemented. Grade level meetings were scheduled weekly after school because the schedule of special classes (art, music, physical education, etc.) did not allow for common planning time during the school day.

The core instructional materials for both schools were consistent across classrooms because the materials were all mandated by the district. Supplementary materials varied by classroom. On the state report cards, the girls' school had advanced to the middle designation of "continuous improvement" in 2004. Staff attributed this improvement to the inviting school climate, concerned teachers who know what and how to teach, strict discipline, achievement orientation among the students, and the lack of distractions from boys. The boys' school had received the

state's lowest possible rating, "academic emergency." One of the most beneficial aspects of the boys' school was the small class sizes at all grades except kindergarten and Grades 5 and 6. Several classrooms had fewer than 10 students. One staff member noted that most teachers had made the adjustment to teaching all boys and found it easier to keep them on task without girls in the classroom. Since the change to all boys' classes teachers had tried to implement more hands-on activities and read stories of interest to boys. The teachers remarked that boys have shorter attention spans than girls so teachers tried to deliver instruction in shorter segments. The boys' school schedule did not offer any recesses or outdoor play opportunities.

At the boys' academy, a full-time teacher staffed the Responsible Thinking Classroom, where boys were sent if they could not manage their classroom behavior. The Responsible Thinking program aimed to help students develop the confidence they needed to solve their own problems. When a student was disruptive or broke the rules in some way, he was asked a series of questions: "What are you doing? What are the rules? What happens when you break the rules? Is this what you want to happen? What do you want to do now? What will happen if you disrupt again?" If the student disrupted again, he took his work to the Responsible Thinking Classroom for a period of time. The study team observed several instances of use of the approach in different classrooms, and teachers indicated a high level of satisfaction with its effectiveness.

The girls' academy enjoyed strong support from several community organizations. The Links organization provided tutoring in reading and mathematics, female guest speakers, and refreshments for student recognition day. A local church sponsored a trip to the opera for the oldest students, provided scholarships to a science camp, and helped pay for student uniforms. The local sheriff's department offered a mentoring program, provided funds for various purposes, and provided transportation for tutors from a private girls' high school to the school site. Under a grant from the county mental health board, the boys' academy had a full-time African-American counselor who worked with students and families in the Families and Students Together (FAST) program, which provided prevention services to children and families at risk of mental health or substance abuse problems. The boys' academy also received some support from a local men's fraternity whose members took boys to visit a local college campus and served as mentors. Students from an all boys' private high school in the area provided tutoring to the boys.

Student Interactions and Behaviors

The study team had limited opportunities to conduct classroom observations at the girls' academy—the school administration permitted extended observations in only three of the 16 classrooms. The study team rated the students in these observations very high on showing respect for the teacher (4.0 on a 4-point scale), engaging in leadership opportunities (4.0), and interacting positively with each other (3.3). Students also exhibited positive role modeling (3.0), and a sense of community (2.7). Nearly all of the teachers' academic comments to girls were positive, and two out of three comments about student behavior were positive. The observers rated the teachers high on maintaining order and control (3.7) and promoting student self-esteem (3.7). These three teachers did not appear to reinforce sex role stereotypes (1.0). Unfortunately, these limited observations cannot be generalized to the entire school.

In contrast, the study team conducted 22 classroom observations at the boys' academy, visiting most classrooms twice during the three-day site visit. On average, students were rated high (3.4

on a 4-point scale) in terms of interacting positively with each other, exhibiting a sense of community (2.9), and showing respect for the teacher (3.6). The study team observed a very high level of order and control throughout the school, resulting in few classroom disruptions. Teachers made twice as many positive as negative comments to students about their behavior. The observers noted only one accommodation to the perceived needs of the boys: in one classroom boys were allowed to stand next to their desks instead of sitting in their chairs if they preferred. Teachers commented that the boys did not seem to worry about giving incorrect answers and displayed their emotions more freely in the absence of girls.

The study team conducted three girls' focus groups with students representing all grade levels. The students cited a variety of reasons for attending the girls' academy, ranging from "my mother made me come here because it's an all girls' school" to "the school has a good academic program." Some students noted that a relative had attended or was currently attending the school. Most of the students believed it is easier to learn without boys around, and they also believed that making friends is easier. Although the girls agreed that there were cliques at the school, staff noted that the cliques were usually based on the housing project the students lived in, the bus they rode, or the church they attended.

Girls of all ages said they had good role models at the school. Some girls identified other students as role models because they were nice, smart, or made good decisions. Some students identified adult role models at the school because they were comforting, shared their personal feelings with students, and treated students like family. The younger students seemed to prefer female teachers, but the older students' preferences were mixed. Most girls agreed that it is easier to talk with female teachers about problems. Most of the students did not like the strict uniform policy but indicated that their parents did. Several students noted that they liked coming to school more since their school began serving girls only. The study team was not able to conduct student focus groups at the boys' academy.

Parents liked the girls' school because they believed girls learn differently than boys and receive more attention in an all girls' school. They remarked that the school focused more on academics than other public schools and provided the girls with more encouragement. Parents also believed that the teachers wanted to be at the school and the sense of community was stronger. One parent remarked that the students took care of each other and seemed more inclined to discuss their problems. Parents praised the firm discipline practiced at the school and appreciated receiving regular communications from the teachers. They noted that their daughters had more self-confidence, were more assertive, had more leadership opportunities, and felt more empowered by being in an all girls' school.

Parents of the boys cited the absence of distractions caused by girls as a factor that has caused their sons to be more academically focused. They unanimously agreed that their sons were more eager to learn and more eager to compete academically in the all boys' setting. One parent did, however, describe having some initial reservations about her son being in an all boys' school because the structure does not reflect the realities of society and because she had concerns about the perceived sexual orientation of boys in an all boys' environment. One staff member expressed concern that many of the students were from female-headed single parent homes and that by attending a school staffed mostly by females they had limited exposure to positive male

role models. This staff member remarked that many of the staff's efforts to maintain control ran counter to the boys' need to move freely in the classroom and exercise outdoors.

Student Academic Achievement and Behaviors

Although the girls' academy staff permitted extended observations in only three classrooms, the observers gave these teachers high ratings in terms of setting high academic expectations (3.3 on a 4-point scale) and showing sensitivity to sex differences in learning or maturation (3.0). Nearly all of the academic and behavior comments the teachers addressed to the students were positive in nature. Students also received high ratings in terms of engagement in academic activities (3.7). Generalizing from these limited observations to an entire school is not, however, possible.

In focus groups the girls said that without boys in the classroom, they received more attention and are called on more often. They commented that in coed classrooms teachers spent so much time on discipline that they had little time to teach the students who want to learn. The girls agreed that they experienced fewer distractions without boys in the classroom. They believed that their teachers expected them to work hard, do their best, pay attention, and achieve good grades. The teachers noted that the girls participated more in class because they were excited to be at school and were not afraid of being laughed at.

The study team rated the teachers at the boys' academy high on setting high academic expectations (3.3), and rated students high on engagement in academic activities (3.4). The most prevalent instructional model observed was interactive direct instruction with the whole class. However, the team had difficulty discerning what the instructional objectives were for many of the instructional segments observed.

Exhibit 1 shows that the girls' academy scored above the district average in Grade 3 and 6 reading and Grade 6 mathematics, although they met the state requirement of 75 percent of the students at proficiency only in Grade 6 reading. Students at the girls' academy scored below the district average in the other areas listed. In contrast, the boys' academy scored well below the district average at all grade levels and did not meet the state proficiency requirement.

Exhibit B3
Students At and Above the Proficient Level

	Percent of Students in 2004–05		
State Test Indicator	**Academy for Girls**	**Academy for Boys**	**District**
Grade 3 Reading	68.3	41.9	66.4
Grade 3 Mathematics	39.0	22.6	47.8
Grade 4 Reading	35.7	50.0	62.9
Grade 4 Mathematics	26.2	31.3	49.6
Grade 5 Reading	53.3	39.3	59.5
Grade 6 Reading	89.4	12.9	60.6
Grade 6 Mathematics	59.6	6.5	46.8

Student Extracurricular Activities

These elementary school academies offered limited extracurricular activities. The girls indicated that in 2004–05 the school had offered after-school basketball and cheerleading, but they were unsure whether those opportunities would be available again in 2005–06. Some students said they participated in after-school activities at the YMCA.

Other Issues and Observations

As designated academies within their district, both schools were able to place more requirements on students and their families. If the girls could follow the rules, they were expected to transfer to another school. The girls' school requested that parents volunteer at least 10 hours each year, but this time could be logged on evenings and weekends by making telephone calls or handing out school flyers at church. Staff recorded volunteer hours and hosted a volunteer recognition event at the end of the year. Staff indicated that the school's reputation in the community had improved subsequent to its becoming an all girls' school and did not report any complaints, lawsuits, or teacher's union issues. Staff expressed support for each other and believed that they communicated effectively with each other, liked working at the school, and shared in the goal of making their all girls' school work.

Teachers at the boys' academy suggested that a lack of parent interest and involvement was a serious issue. One staff member countered this assertion with the observation that the white, middle class staff were not culturally sensitive to the population they serve and did not understand the issues that the parents and students faced and how they affected the boys' ability to learn. A parent echoed this statement with the comment that many parents felt uncomfortable talking with staff, who were better educated. She suggested that teachers make more effort to communicate with parents by calling on the telephone rather than sending home notes.

The boys' principal expressed a desire to increase enrollment by organizing open houses and cookouts in the spring and by contacting parents who transferred their sons to other schools. However, she named as her first priority raising the achievement level to ensure that parents will want their sons to attend the boys' academy. She believed that the school had previously focused on improving school spirit and needed to shift the focus to improving instruction. The primary difficulty in achieving this goal might be the strength of the teacher's union and the principal's inability to enforce reforms.

The boys' academy principal believed that the primary benefits of an all boys' school are decreasing distractions to learning, allowing more opportunities to provide social and moral guidance, and addressing the unique learning styles of boys. The assistant principal named reducing sexual harassment among students, decreasing sex role stereotyping, and addressing the unique learning styles of boys as the primary benefits. When asked to identify the three most important benefits of single-sex schooling, the girls' principal cited improving student achievement, providing choice in public education, and addressing the unique learning styles of girls. The assistant principal cited decreasing distractions to learning, providing more leadership opportunities, and decreasing sex bias in teacher-student interactions.

Conclusions

Examination of the data presented here suggests that simply turning two elementary schools into single-sex schools is not sufficient for improving student achievement. In this case, the girls' school made substantial improvements in student achievement but the boys' school did not. Parents, students, and staff at both schools believed that removing the distraction of the other sex from the education equation allows the students to focus more on academics. Both schools enforced strict behavioral rules and had uniform dress codes, but the girls' academy spent more time planning and researching how to best serve the needs of girls, enjoyed more stability in school leadership, fostered more positive staff attitudes toward single-sex schooling, and employed teachers with stronger instructional skills. Staff at the girls' academy also put more effort into recruiting families and marketing their school as a positive academic choice for girls and fostered a greater sense of community among staff and students. The girls benefited from positive female role models at their school, whereas the boys' school had only a counselor and a part-time physical education teacher to serve as male role models. As is the case for any school reform effort, for single-sex education to be successful a school needs a strong leader who has the support of the teaching staff, ongoing professional development on implementing the reform effort, and teachers who are skilled at providing instruction that addresses state learning goals.

Middle Schools

The study team visited three middle schools in October and November 2005. In School 1 the team observed 30 classrooms; performed five general school observations; and interviewed the principal, the vice principal, the charter organization's CEO, teachers, parents, and students. In School 2 the team observed 24 classrooms; performed six general school observations; and interviewed the principal, the coordinator of the family resource youth service center, two groups of girls' teachers, and students. In School 3 the team observed 28 classrooms; performed nine general school observations; and interviewed the principal, a guidance counselor, the district superintendent, teachers, parents, and students. The team also reviewed key records at each school.

School Overview

School 1 was a charter school dual academy that served 320 boys and girls in single-sex classrooms. The 2005–06 school year was School 1's third year of operation. Title II, IV, and V funds support the school, and although its district qualified for Title I funds, the district did not make those funds available to School 1. Further support came from a state-sponsored charter start-up grant and a large grant from the Walton Foundation.

School 3, a coed school located across town from School 1, was in its second year of operation. A bond financed the construction of a new building, which replaced a run-down facility. School 3 had a diverse student population, and 65 percent of the students were eligible for free or reduced-price meals. School 3's reputation had improved since the school moved into the new building. Parents and administrators thought that the new facility had boosted student morale. Teachers suggested that the school's philosophy of learning had also contributed to the school's improved reputation.

The city in which Schools 1 and 3 were located was predominantly middle class, but the school district was an exception, serving one of lowest socioeconomic populations in the state. The CEO of School 1 estimated that 70 percent of the students in the district were nonwhite. The demographics of Schools 1 and 3 are changing rapidly due to a high level of student migration. Two military bases, 80 religious organization headquarters, and several major corporations in the area also influence demographics. Parents are allowed by state law to enroll their children in any public school, and School 3's district had experienced a net outflow of 400 to 500 students a year. Despite the loss of students in the district, School 3 expected to expand from 640 to 800 students as 12,000 soldiers move into the area. In addition, the Hispanic population in the district is growing at a rapid pace.

School 3, the coed comparison school, paralleled the district average in that 69 percent of its student were nonwhite. Exhibit B4 shows that School 1's population was roughly the inverse: 27 percent nonwhite. Sixty-five percent of the students at School 3 and 30 percent at School 1 received free or reduced-price meals, which indicates that School 1 served a less disadvantaged population. School 1's target population was hard to discern. Its charter CEO stated that the

school's mission is to give a college preparatory experience to diverse populations of students, but the school had not drawn many neighborhood students. The school's location on a highly trafficked street in a nonresidential section of the city with no bus transportation might have limited the ability of lower income students to attend.

Exhibit B4
Student Demographics

	School		
School Characteristic	**1**	**2**	**3**
Nonwhite	27%	70%	69%
Free/reduced price meals	30%	92%	65%

School 2, a dual academy that served 850 students in Grades 6 through 8, was located in a mid-South city. Aside from some small donations from local businesses, Title I funds and the district allotment funded the school budget. Before becoming a dual academy three years prior to the site visit the school was coed. Although School 2 was located in a middle class neighborhood surrounded by an upper class neighborhood of elegant houses, it served a low socioeconomic population. Almost all of the students were bused from public housing projects three miles away. According to the principal, desegregation efforts resulted in the school serving more low-income students. At the time of the site visit 92 percent of School 2's students, compared to 56 percent of the middle school students in the district, received free or reduced-price meals. School 2's building was old and dilapidated, and students thought that the school had a negative reputation in the community.

According to school administrators, the district did not actively publicize School 1 (a charter school) or prominently list it on the district Web site. The principal described the district as nonsupportive, but claimed that the district valued the school because its standardized test scores were above the district and state averages. Positive news coverage of School 1's achievement test scores had improved the school's reputation and demand was outstripping the school's capacity. In part due to its lean budget, the school required parents to volunteer 20 hours a year. The principal described the school's parents as highly involved and parents participating in focus groups agreed. One School 1 teacher noted that a parent missing a teacher conference "would be the exception, not the rule."

School 2's principal and teachers agreed that parent involvement at the school was marginal. Teachers at School 3 also indicated that parents were not highly involved, although two groups of parents did participate in focus groups. The difference between Schools 1 and 2 in terms of parent involvement could be traced to differences in socioeconomic levels or perhaps to the origins of single-sex schooling at each school. School 1 parents were pivotal in the establishment of single-sex schooling, whereas School 2 parents were not. A grassroots group of parents and charter founders established School 1 as a single-sex school from the outset. The charter's high school was already in operation and parents wanted a middle school to provide a consistent educational philosophy. Local parents also observed that boys were excelling in mathematics and science and girls were excelling in language arts. They believed that single-sex classes at the

middle school would eliminate this achievement gap. Though neither parents nor the district resisted single-sex classes, ensuring federal Title IX compliance has proved taxing. School 1's stakeholders have studied Title IX carefully to ensure compliance.

In the case of School 2, administrators—not parents—initiated the change to single-sex schooling for two primary reasons: to improve academic achievement and to reduce disciplinary problems. Administrators were concerned by inappropriate sexual behavior, low attendance, the highest suspension rate in the district, and an attitude among boys that they did not need an education. Detachment from school and low self-efficacy were also evident among the girls. Acknowledging that professional development was not solving the problem, the administrators turned to single-sex schooling. The principal stated that most teachers and district administrators supported the approach after a group visited single-sex schools with similar demographics and reported favorably on their findings.

The levels of sex separation at Schools 1 and 2 were similar. At School 1 all academic classes were separated by sex. For every course a teacher generally had a section of boys and a section of girls. Boys and girls ate lunch separately but did interact during transitions in the hallways. One nonacademic period during the regular school day, focus period, was coed. During this period students could choose to participate in such activities as band, choir, and art. At School 2 boys and girls attended separate classes, occupied separate floors, and waited for buses in separate gymnasiums. Only in choir and band did boys and girls intermingle during school. All after-school sports were separated by sex and each sport, except cheerleading, was offered to both boys and girls. At both Schools 1 and 2 boys and girls had opportunities to interact at dances, concerts, drama performances, and field trips outside of the school day.

Educational Programs

School 1's principal has an unequivocal definition of an effective teacher and used her hiring autonomy to recruit teachers who fit her vision. She cited her foremost requirement as "teachability." By design, 26 of the school's 29 teachers in 2005–06 were new. The principal said he did not allow teachers to perform beneath the school's standards. "If they're not performing in a way that shows improvement or if they're not showing that teachable spirit, then we put them on the improvement plan," remarked the principal. Although the school required much from its teachers, their salaries were only 80 percent of the district average.

Structure, intentionality, and schoolwide coherence characterized School 1's educational program. Pedagogy and instruction at School 1 were distinctive. Teachers strove to utilize every minute of instructional time, and the most common instructional approach was interactive direct instruction. The school opposed constructivist learning theory, and its pedagogy, the "effective teaching cycle," included a warm-up, a review of old material, a review of new material, and guided practice of new material. One emphasized teaching practice was energetic teacher call and student choral response.

School 1's professional development efforts were the most systematic, thorough, and successful. To build teachers' knowledge of and skill implementing the school's distinctive instructional methods, School 1 provided much professional development. The principal conducted a preservice training on sex-specific learning differences based on research from the Gurian

Institute. In addition, teachers received at least four types of ongoing training: CHAMPS classroom management, Direct Instruction, Quantum Learning, and Core Knowledge. CHAMPS contributed to teachers' orderly classrooms, and the school's call and response methods are promoted by Quantum Learning. Every Friday, school dismissed early to allow teachers to meet with lead teachers or participate in professional development. In addition, School 1 systematically and randomly evaluated teachers on their use of the school's teaching practices, and teachers discussed the evaluation results with a trainer. School 1 also encouraged its teachers to take content courses at a local college. The teachers who participated in focus groups were generally enthusiastic about the professional development they had received.

School 2 struggled with teacher retention. A strong union afforded School 2's principal little hiring control. For example, a teacher from a nearby school who was assigned to teach mathematics at School 2 was certified in mathematics but had never taught the subject**.** One source estimated that 50 teachers had left the school in the four years prior to the site visit. School 2 had several "master teachers," as the principal described them, but not enough.

The principal described the instruction at School 2 as primarily "old school, stand and deliver." Because many teachers struggled to control their classes, they avoided nontraditional instructional strategies. As a result, interactive direct instruction was the most common instructional method observed, and small group instruction was virtually nonexistent. The instructional quality at School 2 was highly variable. The principal believed that short tenures contribute to teachers' superficial understanding of the curriculum and ineffective instructional approaches. In addition, collegiality was low among teachers and administrators, and staff struggled to communicate and interact productively. The level of collegiality had, however, improved since the school transitioned to a dual academy. "Before single-sex schooling," commented the principal, "teachers would scream and yell at each other."

School 2's professional development included weekly visits by district content coaches and guest speakers, but these activities had not had the intended effect of building unity and morale. Because the school was under pressure to improve its performance on standardized tests, much of the professional development involves constructing graphic displays of state test standards for classrooms. Due to low test scores, School 2 was on the verge of reconstitution and district and state observers spent considerable time in the school. The principal explained the effect: "My teachers feel put upon. They have people coming in and out and inspecting them every day."

School 3's principal hired 12 new staff members for the 2005–06 school year. He admitted turnover had been high the previous year and proclaimed a "mission to clean house" and raise the level of teacher quality. With nearly complete control over teacher hiring, the principal strove to recruit experienced teachers who meet *No Child Left Behind*'s "highly qualified" teacher criteria. Many of School 3's new teachers arrived directly from teacher training with no previous teaching experience. The principal also expressed a desire to recruit teachers with experience working in teams. The district experiences high teacher turnover due to the transient nature of the military population. Nonetheless, teacher turnover at School 3 was below the district average.

School 3 made no distinction between teacher planning and staff development time. Every teacher had two planning periods each day: one for individual planning and another for planning with grade level teams and content coaches. The system did not allow for content planning

across grade levels. The principal admitted that the team planning meetings occasionally devolved into "gripe sessions." Administrators were rarely involved in team meetings, but on Wednesdays a delayed class start allowed teachers and administrators to spend one hour and 45 minutes discussing common assessments, common curricula, and student learning. On some Wednesday mornings teachers and administrators participated in book study group discussions of strategies for improving instruction or classroom management. These groups were part of the principal's effort to alleviate certain teachers' reliance on "command and control" to manage classrooms.

Student Interactions and Behaviors

The site visits revealed several salient similarities and differences between the schools. The observed interactions between teachers and students at School 3 (the coed comparison school) ranged from positive to troubling. School 1 stood out in terms of healthy interactions: overall, students showed respect for the teachers. At School 2 the interactions between staff and students were complex. The researchers witnessed several instances of strife between teachers and students, and teachers were observed yelling at students to regain control during both academic and nonacademic activities.

Boys and girls in Schools 1 and 3 noted the presence of positive role adult models in their schools. The presence of role models was also cited by boys in School 2. Across all three schools students described role models similarly: kind, caring, and supportive of students' academic and personal struggles. No strong trends correlating students' sex to a preference in the sex of their role model emerged. Across the schools, students themselves rarely exhibited positive role modeling, leadership, or a sense of community. Combined data for these three indicators show no definitive trend toward higher ratings in single-sex classrooms than in coed classrooms.

Peer interactions in the schools were generally healthy. Among both boys and girls in Schools 2 and 3 moderate levels of aggressive behaviors were, however, observed. Negative behaviors such as sexual harassment and violence were not observed in the schools. At all three schools, students and teachers thought the dress code had improved peer interactions. Some students commented that the dress code shifted the focus from style to education. Students often expressed dislike of the policy—citing that it thwarted individuality or led to discomfort—but in general they acknowledged its positive results.

Student Academic Achievement and Behaviors

Exhibits B5 and B6 compare the schools' performance on state standardized tests. Of the three schools, School 1 had the highest academic performance. On the 2003 state standardized tests School 1 students outperformed both the district and state. Caution should be exercised when interpreting the performance of schools compared to their district and state because the economic status of students at each school differed from that of their respective state and district. In the case of Schools 2 and 3, the average economic status of students was lower than the district average. In the case of School 1, the average economic status of students was greater than the district average. On the 2004 state standardized tests School 3 students fared nearly the same as the district averages but notably below the state averages.

Girls' and boys' standardized test scores at School 1 indicate a trend toward sex parity. For Grade 6, 7, and 8 reading and mathematics, in only two cases are the differences between the percentages of girls and boys at or above proficient more than five points.[16] In all other cases girls and boys alternate in terms of which sex scored higher.

Exhibit B5
Students At and Above the Proficient Level

	Percent of Students in 2004			
State Test Indicator	**School 1**	**School 3**	**District**	**State**
Grade 6 through 8 Reading	68%	57%	53%	64%
Grade 6 through 8 Writing	59%	43%	41%	52%
Grade 6 through 8 Mathematics	55%	28%	31%	45%

Note: School C is the coed comparison school in the same district as School 1.

School 2 used several formative assessments to enhance its data-driven instructional approach. Despite its struggles, School 2's reputation and effectiveness were improving. According to the principal, more students were making the honor roll, fewer were being retained, attendance was up slightly, and students were gaining admission to magnet schools at markedly increased rates.

Exhibit B6
Students At and Above the Proficient Level

	Percent of Students in 2004		
State Test Indicator	**School 2**	**District**	**State**
Grade 6 Reading	23%	45%	56%
Grade 6 Language Arts	22%	43%	53%
Grade 6 Mathematics	24%	45%	55%

Two pictures emerge when classroom orderliness, academic engagement, and on-task behavior are compared among the single-sex and coed schools (see Exhibit B7). At School 1 the researchers found orderly classrooms and high levels of on-task behavior. Students were engaged in academic activities, teachers maintained classroom order and control, and students initiated few interruptions. In Schools 2 and 3, orderly classrooms were more common than disorderly classrooms, academic engagement was average, and student-initiated disruptions were few.

Although variation on these indicators was low at School 1, it was high at Schools 2 and 3. Orderly classrooms, for example, might have been more common than disorderly classrooms, but several classrooms at each school exhibited disturbing levels of disorder and off-task behavior. In School 3 (the coed school) off-task students were sometimes highly distractive,

[16]Grade 7 reading (Girls = 76 percent, Boys = 54 percent) and Grade 6 mathematics (Girls = 56 percent, Boys = 44 percent).

wandering around the room during lessons, talking loudly during silent reading, and interrupting teachers. Overall, in School 3 boys were observed to be more likely off task than girls, and, in both Schools 2 and 3, students were less focused and orderly than students in School 1. In the focus groups, nearly all of the School 1 and School 2 students claimed that single-sex schooling had improved their academic achievement by eliminating opposite sex distractions. Girls mentioned active distractions including boys "showing off," "boys touching you," and "boys acting tough to impress." Both girls and boys said they felt more confident because did do not need to worry about what the opposite sex thought. A few boys did, however, mention that single-sex classrooms deprived them of access to girls' ways of thinking.

Exhibit B7
Student Interactions and Academic Behaviors

	Mean Ratings by School			
Student Characteristic	**1**	**2**	**SS Mean**	**3**
1. Exhibit a sense of community	2.46	2.14	2.31	2.04
2. Are engaged in academic activities	3.50	2.96	3.26	2.93
3. Interact positively with each other	2.79	2.43	2.63	2.41
4. Show respect for the teacher	3.62	3.09	3.39	3.00
5. Initiate class disruptions	1.33	1.95	1.63	1.82
6. Have completed homework	3.50	2.75	3.35	2.25
7. Exhibit positive role modeling	2.11	1.57	1.88	1.57
8. Engage in leadership opportunities	2.13	1.83	2.00	1.85

Note. Rating scale: 1 = *very little*, 4 = *extensive*. Number of classroom observations: School 1 = 30, School 2 = 24, School 3 = 28.

Variation across and within the schools narrows on the topic of students' disposition toward grades and learning. Students in all of the focus groups professed that good grades are important. Several students in School 3 did, however, report that although grades were important to them, they were not important to their peers. School 3 students also had the lowest mean rate of completed homework. Students in School 2 correlated good grades with eligibility to participate in extracurricular activities and college admission. Eighth-grade boys in School 2 also indicated feeling pressure to achieve because the school is on an improvement plan. Students in School 2 reported spending 30 to 60 minutes a night on homework. School 1 students also cited extracurricular eligibility and added that a desire to be in good standing with their parents motivated them to earn good grades.

School 2 teachers rated students' academic motivation as low and believed that complacency was prevalent. The classroom observations found that teachers held a wide range of expectations for students. School 1's results were mixed. Despite student reports of high teacher expectations, the observers did not rate teachers high in this area. This discrepancy might derive from the school's emphasis on factual and procedural recall rather than higher order thinking.

The principals of both single-sex schools believed that sex separation enhanced student academic achievement. Across all three schools, teachers thought that boys and girls have different learning needs and gave a variety of examples. The classroom observations revealed, however, low levels of sensitivity to sex-based learning differences. The greatest academic difference between the three schools was the number of questions and comments classroom teachers posed to students (see Exhibit B8). Boys were more likely to receive both academic and behavioral comments than girls. In the coed classroom these differences indicate that boys garnered more energy from the teacher, which might have affected the learning opportunities for girls.

Exhibit B8
Classroom Observation Summary

	Mean No. of Interactions by School		
Measure	**1**	**2**	**3**
Positive Interactions With Boys			
Academic	25.6	10.6	5.0
Behavioral	2.4	1.9	0.9
Positive Interactions With Girls			
Academic	17.6	7.8	4.0
Behavioral	1.5	1.2	0.4

Note. Number of classroom observations: School 1 = 30, School 2 = 24, School 3 = 28.

Consistent with School 1's energetic instructional style, boys and girls both received an exceptionally high number of academic comments and questions from their teachers. Although the difference in the number of comments addressed to boys and girls is noteworthy, both sexes engaged in high numbers of academic interactions with teachers and girls appeared to receive equally diligent instruction and attention. On average, School 2 boys and girls each received a respectable number of comments and questions from their teachers.

In all three schools parents and students were asked to discuss their reasons for attending the school. School 1 parents cited academics as the dominant force behind their choice. They mentioned standardized test scores, the Core Knowledge curriculum, the no-nonsense environment, the uniforms, and the single-sex classrooms. School 2 parents were unavailable for focus groups, but many students expressed ambivalence about attending the school because of its poor reputation. Students suggested that attending School 2 was a mandate rather than a choice. School 3 parents and students highlighted the proximity and quality of the school building. Other reasons for attending included friendly teachers, organized classrooms, and a variety of extracurricular activities.

Student Extracurricular Activities

Data on extracurricular activities at the schools are almost exclusively from student focus groups and records shared with the study team by school administrators. School 3's boys and girls equally enjoyed access to the widest range of extracurricular activities, including 11 nonathletic extracurricular activities and seven sports. School 3 students invariably indicated that the extracurricular activities were accessible and leadership opportunities were open to boys and girls. School 3 parents praised the breadth and quality of the extracurricular activities. Similarly, School 1 students cited few sex-related differences in terms of access to extracurricular activities. Students cited ample opportunities for extracurricular involvement, but made few comments about leadership opportunities. Access to extracurricular activities was apparently lowest at School 2. Students cited only a few extracurricular activities and expressed some confusion about access. At School 2 all athletic activities were separated by sex.

Schools 1 and 3 also offered a variety of nonathletic extracurricular activities to boys and girls. All School 1 students could choose to participate in such activities as choir, art, and model building during the final period of the day. At the time of the site visit the positions of president, vice president, secretary, and treasurer in School 1's student council were held by girls. Each sex in each grade had, however, a representative on the council. School 3 students participated nearly equally in the science, mathematics, and research clubs and student council. Among the 11 nonathletic extracurricular options at School 3, only the National Junior Honors Society had considerably more female than male members. At School 2 student council positions were allocated equally because each grade level had separate representatives for boys and girls.

Conclusions

The many differences between the three middle schools described herein leave little room for generalized conclusions. The coed school was in a new building and had a nearly new staff. One of the dual academies was a new charter school with a strong system of accountability and teachers who received extensive and ongoing professional development. The schools also varied greatly in terms of student demographics. The single-sex environment appeared to alleviate distractions, increase confidence, and promote higher academic expectations more than the coed environment. Teachers at all of the schools expressed sensitivity to boys' and girls' different learning styles, and teachers in the dual academies felt better able to reach students when teaching only one sex at a time. In contrast, only at the charter school had teachers received explicit professional development on the learning differences of boys and girls. At the other single-sex school, teachers had received no such professional development, and it appeared that modification of instructional practice and content for the needs of either boys or girls was left to each teacher.

High Schools

A team of three researchers visited Schools 1 and 2 during October 2005. During that time the team observed classrooms; performed general school observations; interviewed school administrators, district administrators, teachers, parents, and students; and reviewed multiple key documents and data.

School Overview

School 1 and School 2 were all girls' secondary schools located in East Coast urban centers. Both were committed to providing a high-quality, college preparatory education to their students. They benefited from strong reputations in their communities for their high academic and behavioral standards. Despite their similarities, the schools differed in terms of history and operations. School 1 served 850 students in Grades 9 through 12 and is among the oldest single-sex public schools in the country. Its demographics, similar to those of its district, were 82 percent African-American and 14 percent white, and the school drew students from throughout the city. Fifty percent of the students qualified for free or reduced-price meals. In contrast, School 2 served 400 students in Grades 7 through 12 and was only nine years old. The student population was 62 percent Hispanic and 34 percent African-American, which reflected the neighborhood from which the school drew its students. Eighty-four percent of the girls were eligible for free or reduced-price meals, 7 percent had individual education plans, and almost two-thirds came from homes in which the predominant language was Spanish.

Both schools employed a selective admission process that considered prior academic performance, recommendations, and personal interviews. School 1 placed a heavier priority on prior academic achievement and had a relatively strict minimum score requirement, whereas School 2 accepted students within a wider range of prior performance. The admission processes at both schools took into account the level of student interest in the school because administrators believed that a desire to be in a single-sex environment is important to long-term success at the schools.

The schools were located in well-maintained facilities that reflected pride in the schools. School 1 was housed in a large brick building and had a campus that included a gym, a large cafeteria, and sports fields. In contrast, School 2 occupied floors 7 through 11 of an 11-story office building. Whereas School 1's capacity was twice its current enrollment, School 2 was extremely pressed for space. As a result, School 1 was contemplating adding grades and increasing enrollment, but School 2—despite district pressure to increase enrollment to meet the high demand—was unable to do so due to space constraints.

Both schools received the bulk of their funding through their respective districts. School 1 supplemented these monies to a small degree through private fundraising and grant writing. School 2 was very committed to raising additional funding, and its budget was supplemented by a foundation that benefits the five all girls' schools in its network. Both schools had established

strategic partnerships with organizations in their respective cities through which they received grants or services and offered additional educational opportunities to their students.

Some of the more notable differences between the schools are attributable to their different histories. School 1 has existed for over 160 years and is well known in its city. Prominent alumnae are active in city politics and culture and continue to support the school. The school was started by the district to teach skills particular to women of the age (such as homemaking), and it evolved over time into a college preparatory school. At the time of the site visit School 1 had little discretion over its curriculum and professional development, and its operations did not differ from coed schools in the district. The staff was experienced—many of the teachers had been at the school for more than 20 years. The school received its teachers through a transfer system, as did all other schools in the district.

School 2, in contrast, was only nine years old at the time of the site visit. It was founded in 1996 through the efforts of a private individual who perceived a need to provide an all girls' school choice for families unable to pay for private school. The neighborhood was chosen because of its history of academic underperformance and the limited resources of its population. The founders believed that a high-quality education would help break the cycle of poverty for the girls and their families. School 2 had much more autonomy in its curriculum and professional development, and to a certain extent teacher hiring. The teachers were generally young—averaging around seven years of teaching experience—but enthusiastic and committed.

Although both schools enjoyed strong reputations, some interviewees at School 1 believed that its reputation had weakened in recent years. They suggested two reasons: past low enrollment that resulted in lowered academic standards for enrollment and rumors in the community that the school educates lesbians. The school had addressed these issues, but some feared that the school's outstanding reputation had been tarnished. School 2 had an excellent reputation, although students admitted being teased by peers at other schools that they attended a lesbian school. The rumor was more pronounced at School 1, but this bias is something the girls attending these schools must contend with. Both schools' reputations, academic records, and well-connected advocates had helped them survive numerous political battles, yet stakeholders in both schools expressed concern that their respective districts might do away with single-sex schooling.

Educational Program

Both schools aimed to provide students with a high-quality college preparatory educational experience, including preparation for standardized tests. Both schools had rigorous graduation requirements and offered advanced placement classes for excelling students, although due to its smaller size and younger age School 2 offered fewer electives and advanced courses. School 1's educational program was dictated almost entirely by the district. The school followed the district-mandated curriculum and district professional development calendar. The curriculum content did not vary from classroom to classroom, and the school made no sex-based modifications to content or delivery. Due to School 1's reputation of academic achievement and order, many teachers in the district seek to transfer to the school. Teachers tend, however, to stay at the school for many years and historically turnover has been relatively low compared to other district schools.

In contrast, School 2's district had dictated little regarding curriculum and professional development. Professional development was based on the results of needs assessments and the teachers' own interests. In addition, teachers reported participating in citywide presentations and professional conferences as appropriate. The school had near autonomy in choosing its teachers due to an agreement reached in contract negotiations between the city and the teacher's union. Under this agreement, a school personnel committee selects teachers according to criteria chosen by the school rather than seniority. The school must reapply for this increased autonomy every two years. Teacher turnover at the school was relatively low for an urban school in a high-need area: at the time of the site visit 75 percent of the staff had been with the school for five years. However, in the first five years of the school's history turnover was very high.

Both schools seemed to provide an interactive learning experience, and classroom observations revealed high levels of student engagement. In School 1 administrators described the desired model of pedagogy as "teacher as facilitator." The predominant teaching style observed during the site visit was interactive direct instruction. Some teachers relied heavily on a more traditional lecture style, and some classes included individual or group activities. With few exceptions the desks were placed in rows. Aggregate classroom observation data indicate that 69 percent of the time 80 to 100 percent of the students were engaged in academic work. Twenty-five percent of the time 60 to 80 percent were on task. In general, students were well behaved in the classroom, and many teachers tolerated a high level of chatter. School 1 administrators rated the quality of the staff as high but admitted to some exceptions.

The instructional styles observed in School 2 varied, but most instructors engaged students in inquiry-based, interactive direct instruction. Observers also noticed hands-on activities, independent and group work, and teacher lecture. The students were grouped at tables. The data show that 70 percent of the time 80 to 100 percent of the students were engaged in academic work. Most teachers maintained order and control while allowing for student interaction. Some classrooms were noisier than others, and some teachers more proficient than others at both generating interest and maintaining control. Although administrators expect a certain degree of student interaction to be a natural part of the "participatory learning" process, stakeholders in both schools shared the belief that girls are more prone to chatty behavior.

In general, School 2 had more deliberately modified its curriculum and pedagogy to meet the distinct emotional and academic needs of girls. Most teachers chose the school because they wanted to teach girls, and they were eager to learn more about sex differences in learning. School 2 provided annual professional development on single-sex education, and teachers participated in book groups to further investigate the issue. Some teachers described modifying the curriculum by choosing books by women authors or highlighting women in history, and others described modifying instructional delivery by providing more positive feedback and focusing on the learning process rather than correct answers only.

Although teachers in School 1 expressed appreciation for the school's single-sex nature, it was generally not the reason they were at the school. Almost all of the benefits of single-sex schooling cited by the teachers were social—such as more leadership opportunities and fewer distractions—and very few teachers believed that in terms of academics teaching girls differs from teaching boys. Teachers in School 1 could not identify many sex-based adaptations to the curriculum or pedagogy. In fact, some believed strongly that "teaching is teaching," regardless of

the students' sex. Their support for single-sex schooling was based on the belief that it increases student achievement by eliminating distractions from the other sex. Administrators did discuss sex-based learning differences but asserted that the primary benefits of single-sex schooling are cultural and social. Teachers received no professional development on single-sex education, and few staff expressed interest in the topic.

Student Interactions and Behaviors

The opportunity for positive student interactions is among the most heralded benefits of single-sex education. Students in both schools exhibited a strong sense of school identity and spoke eloquently about the ways in which the schools had helped them grow as young women, scholars, and citizens. In School 1 students spoke of a "sisterhood," and this sense of community was palpable. The girls reported feeling very close to one another and the teachers and believing they are part of something special. Students claimed that their self-esteem had increased at the school—a benefit administrators and parents also highlighted. Parents indicated that School 1 clearly expects a high level of maturity from the girls. Another benefit emphasized by multiple stakeholders was positive student and teacher role models. Girls expressed admiration for peer role models who demonstrate academic achievement and leadership abilities. In addition, the girls reported receiving social and moral guidance from teachers of both sexes. Students and parents suggested that higher quality teacher-student interactions are possible because boys are not present to distract the girls.

Although some past sexual harassment incidents were mentioned, the absence of male peers had dramatically reduced the level and type of sexual harassment that occurred. Parents in School 2 mentioned some bullying that had occurred at the beginning of the year, but students perceived there were lower levels of bullying in the school than in local coed schools. The visitors did not witness any violence during visits to either school, and interviewees believed the schools to be safe. Stakeholders stated that because the girls do not feel pressure to impress boys in the classroom, they can better engage in academics. Furthermore, they asserted that the all girls environment decreases sex bias in teacher-student interactions and ensures that teachers do not spend disproportionate time responding to boys' disruptive behavior in the classroom. These factors together enhanced the quality of student interactions. In School 2 the observations recorded high levels of positive student interactions and sense of community.

Multiple stakeholders in School 2 articulated appreciation for the school's positive effect on the students' self-esteem and peer interactions. Students cited ease in making friends and reported that their friendships thrived because boys did not distract them. Students described admiring peer role models in School 2 for their academic success and extracurricular involvement. Students also identified teachers who were regarded as role models due to their willingness to support students academically and socially. Teachers and students in School 2 expressed appreciation for the lack of distractions caused by the other sex in the classroom. Many of the same benefits of single-sex schooling cited by School 1 stakeholders were echoed at School 2.

The observations indicated that both schools were relatively orderly. Interactions in the halls and the cafeterias were lively but controlled. In general, the interactions observed between adults and students were constructive and respectful, although some instances of rude behavior toward staff and fellow students occurred in both schools. Observations in both schools indicated youth

culture influence in such areas as jewelry, clothing, and use of cell phones. The influence was stronger in School 1, the larger of the two schools. Because School 2 required uniforms, youth culture dress was minimized to dyed hair, jewelry, and shoes.

Student Academic Achievement and Behaviors

Both schools place a high priority on providing a rigorous, college-preparatory program—a primary reason parents and students chose the schools. Both had performed well on city and state tests and generally had higher achievement scores than their respective districts. Both also had high graduation rates and boasted 100 percent college acceptance rates for the previous school year. Students expect—and are expected—to attend college after gradation. The emphasis on college was evident in both the support provided to students and in displays throughout the schools emphasizing postsecondary education.

School 1's commitment to academic rigor was one its defining characteristics. Students were expected to be studious, and entrance into and continued enrollment in the school were dependent on academic performance. The school offered two tracks for students: college preparatory and accelerated college preparatory, which included advanced placement or college-level classes in Grade 12. Honors and accelerated courses were offered for students in Grades 10, 11, and 12. School 1 had a 97 percent graduation rate in 2005; of the graduates, 72 percent planned to attend a four-year college and 13 percent planned to attend a two-year college. The school has consistently performed among the top schools in the district on city and state tests (see Exhibits B9 and B10).

Exhibit B9
Students At and Above the Proficient Level in 2005

	Percent of Students Proficient		
State Test Indicator	**School 1**	**District**	**State**
Geometry	59%	19%	51%
English	86%	34%	57%

Exhibit B10
2003–04 Adequate Yearly Progress

	Percent Proficient		
State Test Indicator	**School 1**	**District**	**State**
Reading	76%	46%	68%
Mathematics	38%	36%	58%
Adequate Yearly Progress	Met	Not met	Not met

School 2 had a college counselor on staff who scheduled college visits for students and invited college recruiters to the school to talk with the students. Parents appreciated the college focus and observed the desire for college take root in their daughters. Some parents did, however, mention a desire for more academic consistency across classrooms and more rigor in the school's general offerings. School 2 had regularly achieved adequate yearly progress and was deemed a "school in good standing" by the state department of education. Exhibit B11 shows School 2's test results reported on the 2003–04 school report card.

Exhibit B11
Student Performance on High School Exams (2003–04)

	Percent of Students Scoring			
	No. Tested	**55–100[a]**	**65–100**	**85–100**
English				
School 2	68	93	85	66
Similar Schools[b]	9519	92	85	38
City Schools	64,533	81	66	21
Mathematics A				
School 2	16	100	56	6
Similar Schools	10,324	95	86	24
City Schools	72,537	87	68	15

[a]A 55 is required to pass the secondary level state test. [b]"Similar schools" is a state-determined comparison group based on the grade levels served by the school, the rates of student poverty and limited English proficiency, and the income and property wealth of the district residents.

The site visitors rated both schools high in terms of homework completion, engagement in academic activities, and positive peer interaction. Staff and students in both schools asserted that the single-sex makeup of the student body allowed for more opportunities for the girls to excel in the classroom. Teachers, parents, and administrators credited the single-sex environment with helping the girls focus on academic achievement by eliminating the distraction of boys and allowing for healthy competition. Girls mentioned being less afraid of failing than they had been in coed schools, and teachers remarked that the girls were more willing to problem solve. Teachers commented that in coed environments they had often witnessed girls deferring to boys academically. Parents believed that their daughters were enthusiastic about school and achieved more academic success in the single-sex school than they would have in a coed school.

Student Extracurricular Activities

Both schools offer extracurricular activities that addressed a range of interests including science, theater, and service. School 1, the larger school, offered 35 clubs, and School 2 offered 21, and participation was high. These clubs offered many non-sex-stereotyped activities and excellent leadership opportunities, both formal and informal. Students said they were more willing to seek leadership roles in the clubs because they did not compete with boys to do so.

Other Issues and Observations

Staff and students in School 1 expressed concern that the school would be closed or merged with another school. There was fear that the school is vulnerable because its space was underutilized and some district officials appeared to be unsupportive of the school. During the site visit the district held a community forum that drew hundreds of the school's supporters. The topic of the meeting was the future of the district's high schools, many of which may be broken up into smaller learning communities. Although district administrators sought to dispel rumors that the school may close or merge, the school's supporters remain concerned that district leaders do not value the benefits of single-sex schooling.

Administrators and staff in School 2 expressed concern that the girls who attend the school were not experiencing positive peer interactions with boys in school, and many of the girls did not have this opportunity outside of school either. Some staff—but not parents or students—expressed concern that girls from the school might be targeted by inappropriate boys in the neighborhood and that the girls might accept these advances because they do not have the opportunity to meet boys at school. They claimed that the inability to interact with boys in a nonthreatening classroom environment contributes to a mystique surrounding boys. In response to these concerns staff were considering ways to increase the amount of positive interaction the girls have with boys, such as partnering with an all boys' school for field trips or offering coed after-school activities.

Conclusion

Both schools prided themselves on having high academic and behavioral standards to which their students aspired, and both provided a supportive environment in which students were able to achieve these high standards. An integral aspect of that setting was the single-sex nature of the schools. Although the focus on sex differences in academics was more pronounced at School 2, both schools believed that the single-sex nature of their program was foundational to their success. Stakeholders in both schools expressed enormous respect and excitement for their efforts. Increased opportunities for leadership, increased student achievement, improved self-esteem, and fewer distractions are among the main benefits of single-sex schooling cited in School 1. School 2 cited fewer behavioral problems, the opportunity to address the learning styles of girls, and the provision of a choice in public education for parents in the neighborhood. At both schools, the single-sex nature was credited in helping the schools to more adequately address the needs of the students who come to them, and the ability to focus on "girl issues" had allowed the schools to put the appropriate supports in place that might not be available in coed schools. Parents were impressed with the way the schools had helped the maturation process of their daughters, reporting that their students took more initiative and made more decisions on their own. Students spoke about how they had grown in self-esteem and confidence since they began attending the schools, and how the support of the administration and peers had allowed them to take risks and try new things. The girls believed they had been "given a voice" through their attendance at these schools, and they spoke with a confidence and passion that they attributed to their schools.

Appendix C:
Data Collection Instruments

Form Approved
OMB No. 1875-0234
Expiration Date: 01/31/2008

Single Sex Schools
Principal Survey

Date Completed: _____/____/____

About This Survey

This survey contains questions concerning your school such as student characteristics, classroom instruction, school climate, and your opinions about single sex schooling. Some questions may ask that you respond separately for boys and girls.

Please write your answers directly on the survey by checking the appropriate boxes or by writing your response in the space provided.

We expect that it will take approximately 1 ½ hours to complete the survey.

We have taken several steps to ensure that the information you provide is not connected with your name or school name:

- Your survey will include an ID number only.
- We have enclosed a self-addressed stamped envelope for you to mail your survey directly to RMC Research. Surveys will be seen only by the researchers and will be identified only by the ID number.
- No names or institutional identifiers will be used in any reports. Survey responses will be reported in aggregate form only. It may be possible for a reader to determine which schools participated in this study because of their unique characteristics, but our reports will not link these characteristics to your responses.

Please return this survey no later than March 18, 2005

Thank you very much for your help.

Single Sex Schools
Principal Survey

School Characteristics

1. Which best describes this school?

   ❒$_1$ Girls only

   ❒$_2$ Boys only

   ❒$_3$ Boys and girls, taught in separate classes by different teachers

   ❒$_4$ Boys and girls, taught in separate classes by same teachers

2. Is this school a charter school?

   ❒$_1$ Yes

   ❒$_2$ No

3. In what calendar year did this school become a single-sex school? _____

4. Is this single sex school a newly created school or was it originally a coeducational school?

   ❒$_1$ A newly created school (Skip to Question 7)

   ❒$_2$ A pre-existing coeducational school

   ❒$_3$ Don't know (Skip to Question 7)

5. Did you support this school's conversion to a single sex school?

   ❒$_1$ Yes

   ❒$_2$ No

6. Were you a principal at this school before it became a single sex school?

   ❒$_1$ Yes

   ❒$_2$ No

7. What was/were the primary reason(s) for creating this single-sex school?

   ❒$_a$ Don't know (Skip to Question 8)

   ❒$_b$ _____

   ❒$_c$ _____

   ❒$_d$ _____

8. Did you ever attend a single sex school as a student in Grades K–12?

❒$_1$ Yes

❒$_2$ No

9. Have any of your own children attended a single sex school in Grades K–12?

❒$_1$ Yes

❒$_2$ No

❒$_3$ Not applicable (I have not had any school-age children)

10. **School enrollment**. Write in the approximate number of children for each of the following. If no children have left or enrolled in this school, enter "0" on that line.

	Number of children
a. Total enrollment in this school around October 1, 2004, or the date nearest to that for which data are available (use the numbers you report to your state education agency, if applicable)	_____
b. Number of children who have enrolled in this school since October 1, 2004	_____
c. Number of children who have left this school since October 1, 2004, and have not returned	_____

11. **School enrollment by grade**. Write in the approximate number of children for each grade level around October 1, 2004. If no children are enrolled for a particular grade, enter "0" on that line.

a. Kindergarten.... _____

b. 1st grade ..... _____

c. 2nd grade..... _____

d. 3rd grade ..... _____

e. 4th grade ..... _____

f. 5th grade..... _____

g. 6th grade..... _____

h. 7th grade..... _____

i. 8th grade..... _____

j. 9th grade..... _____

k. 10th grade..... _____

l. 11th grade..... _____

m. 12th grade..... _____

12. Around October 1, 2004, how many students in this school belonged to each of the following racial/ethnic groups? Write the number OR percent on each line. Enter "0" on the line if this school has no students of that racial-ethnic group. The Total number should sum to the total school enrollment in question 9a OR the total on the percent column should add to 100%.

	Number	OR	**Percent**
a. White	_____		_____%
b. Black or African American	_____		_____%
c. Asian	_____		_____%
d. Native Hawaiian or Other Pacific Islander	_____		_____%
e. American Indian or Alaska Native	_____		_____%
f. Other (Please specify)	_____		_____%
g. TOTAL.....	_____		**100 %**

13. Approximately, what is the **average daily attendance** for this school this year? Write in percent or number from your most recent count below. To calculate percent, divide the number of students attending on an average day by the number of students enrolled.

_____ % Average Daily Attendance (e.g., number of students attending on an average day/number of students enrolled)

OR

_____ Average Number Attending Daily

For questions 14–16, use current numbers or your most recent report to your state.

14. What is the total number of students at this school who are eligible for **free or reduced price lunches**?

_____

15. What is the number of students at this school who have an **Individual Education Plan** (IEP)?

_____

16. What is the number of students at this school who are identified through an English proficiency test as **limited-English proficient**?

_____

17. Does this school have programs specifically designed to address the needs of limited-English proficient students?

❒$_1$ Yes

❒$_2$ No

18. Do any students enrolled in this school receive Title I services?

❒$_1$ Yes

❒$_2$ No

19. Is this school operating a school-wide Title I program?

❒$_1$ Yes

❒$_2$ No

20. Has this school been identified for school improvement under No Child Left Behind (NCLB)?

❒$_1$ Yes

❒$_2$ No

21. What is the total number of classroom teachers, special services staff, administrators, and instructional assistants at this school? Report numbers of staff in full-time equivalents (FTE).

Staff Type	Total Number of Staff	Number of Female Staff
a. **Classroom teachers** (Include regular classroom teachers, special education, Title I, ELL, teachers on special assignment, and special areas such as art, music, and PE). Do not include counselors, psychologists, media specialists, or speech-language pathologists.)	_____	_____
b. **Special services staff** (Include counselors, psychologists, nurses, media specialists, and speech-language pathologists.)	_____	_____
c. **Administrators** (Include principals, vice principals, and assistant principals.)	_____	_____
d. **Instructional assistants** who work directly with students (include special education assistants, Title I assistants, bilingual/ESL assistants, and regular instructional assistants.) To calculate FTE, add the number of hours worked each day for each assistant and divide by 8.	_____	_____

22. What percentage of your teachers are considered "highly qualified" under NCLB?

_____ %

23. **How long is the school day** for students in this school? (Report BOTH hours and minutes, e.g., 5 hours and 45 minutes). If the length of day varies by grade level, record the *longest* day. Include instructional time only—do not include lunch, recess, or passing time.

_____ hours and _____ minutes

24. **How many instructional days** are in your school year? Include only the days that students are present.

_____ days

25. Does this school have a formal school improvement plan?

❒$_1$ Yes

❒$_2$ No

26. Is this school currently involved in the implementation of any specific school reform models (e.g., Success for All, Core Knowledge, Coalition of Essential Schools, Accelerated Schools)?

❒$_1$ Yes → If yes, please indicate which reform model(s) you are implementing.

❒$_2$ No

_____

_____

_____

27. Has this school had a major new curriculum adoption this year (2004–05)? *Mark (X) all that apply*.

❒$_x$ Did not adopt any new curriculum programs this year

❒$_a$ Reading/language arts

❒$_b$ Mathematics

❒$_c$ Science

❒$_d$ Social studies

❒$_e$ Other: _____

❒$_f$ Other: _____

28. What percent of your students scored *at or above the proficient level* on your state standards in **reading** last year?

_____%

29. What percent of your students scored *at or above the proficient level* on your state standards in **math** last year?

_____%

Admission Procedures

30. Does this school use any of the following requirements for admission?

	Yes	No
a. Admission test	❒1	❒2
b. Standardized achievement test	❒1	❒2
c. Academic record	❒1	❒2
d. Special student needs (e.g., "at risk" or with disabilities)	❒1	❒2
e. Special student aptitudes, skills, or talents	❒1	❒2
f. Personal interview	❒1	❒2
g. Recommendations	❒1	❒2
h. Residence in attendance area	❒1	❒2
i. Commitment to parental involvement	❒1	❒2
j. Socioeconomic need	❒1	❒2

31. What percentage of your enrollment slots, if any, are reserved for low-income students?

❒a None, we do not have income requirements

❒b _____% of our enrollment slots are reserved for low-income students

32. Does the admission process involve a lottery of any kind?

❒1 Yes → If yes, please describe.

❒2 No

_____

_____

_____

33. How many students (otherwise qualified) were denied admission *this school year* due to a lack of space?

_____

34. Do you maintain a reservation list for students who are not yet old enough to enter your school's lowest grade? (e.g., a high school that keeps a list of elementary and middle school students who want to be admitted in the future)?

❒1 Yes

❒2 No

School Climate

35. This school year (2004-05), is it the practice of this school to do the following?

	Yes	No
a. Control access to school buildings during school hours (e.g., locked or monitored doors)	❒1	❒2
b. Control access to school grounds during school hours (e.g., locked or monitored gates)	❒1	❒2
c. Require students to pass through metal detectors each day	❒1	❒2
d. Perform random metal detector checks on students	❒1	❒2
e. Require that all or most students stay on campus during lunch	❒1	❒2
f. Use random dog sniffs to check for drugs	❒1	❒2
g. Perform random sweeps for contraband (e.g., drugs or weapons), but not including dog sniffs	❒1	❒2
h. Require students to wear uniforms	❒1	❒2
i. Enforce a strict dress code	❒1	❒2
j. Require clear book bags or ban book bags on school grounds	❒1	❒2

36. To the best of your knowledge, how often do the following types of problems occur with students at this school? *Mark (X) one box on each row.*

	Never	On occasion	At least once a month	At least once a week	Daily
a. Physical abuse of teachers	❒1	❒2	❒3	❒4	❒5
b. Student racial tensions	❒1	❒2	❒3	❒4	❒5
c. Student bullying	❒1	❒2	❒3	❒4	❒5
d. Student verbal abuse of teachers	❒1	❒2	❒3	❒4	❒5
e. Widespread disorder in classrooms	❒1	❒2	❒3	❒4	❒5
f. Gang activities	❒1	❒2	❒3	❒4	❒5

37. To what extent is each of the following a problem at this school? *Mark (X) one box on each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a. Student tardiness	❒1	❒2	❒3	❒4
b. Student absenteeism	❒1	❒2	❒3	❒4
c. Teacher absenteeism	❒1	❒2	❒3	❒4
d. Student class cutting	❒1	❒2	❒3	❒4
e. Physical conflicts among students	❒1	❒2	❒3	❒4

	Not a problem	Minor problem	Moderate problem	Serious problem
f. Robbery or theft	❒1	❒2	❒3	❒4
g. Vandalism of school property	❒1	❒2	❒3	❒4
h. Student pregnancy	❒1	❒2	❒3	❒4
i. Student use of alcohol	❒1	❒2	❒3	❒4
j. Student drug abuse	❒1	❒2	❒3	❒4
k. Student possession of weapons	❒1	❒2	❒3	❒4
l. Student disrespect for teachers	❒1	❒2	❒3	❒4
m. Students dropping out	❒1	❒2	❒3	❒4
n. Student apathy	❒1	❒2	❒3	❒4
o. Lack of parental involvement	❒1	❒2	❒3	❒4
p. Poverty	❒1	❒2	❒3	❒4
q. Students come to school unprepared to learn	❒1	❒2	❒3	❒4
r. Poor student health	❒1	❒2	❒3	❒4

38. Please rate your level of satisfaction with each of the following school characteristics. *Mark (X) one box on each row.*

	Very Unsatisfied	Somewhat Unsatisfied	Uncertain	Somewhat Satisfied	Very Satisfied
a. Individual attention to students	❒1	❒2	❒3	❒4	❒5
b. Academic standards for students	❒1	❒2	❒3	❒4	❒5
c. Student access to teachers	❒1	❒2	❒3	❒4	❒5
d. Quality of school administration	❒1	❒2	❒3	❒4	❒5
e. Quality of teaching	❒1	❒2	❒3	❒4	❒5
f. School facilities	❒1	❒2	❒3	❒4	❒5
g. Extracurricular activities	❒1	❒2	❒3	❒4	❒5
h. Transportation for students	❒1	❒2	❒3	❒4	❒5
i. Food for students	❒1	❒2	❒3	❒4	❒5
j. Staff and student safety	❒1	❒2	❒3	❒4	❒5
k. Student behavior code	❒1	❒2	❒3	❒4	❒5
l. Student dress	❒1	❒2	❒3	❒4	❒5
m. Length of school day	❒1	❒2	❒3	❒4	❒5
n. Length of school year	❒1	❒2	❒3	❒4	❒5

39. How much of a problem are the following in the neighborhood where this school is located? *Mark (X) one box on each line.*

	No problem	Somewhat of a problem	A big problem	Don't know
a. Tensions based on racial, ethnic, or religious differences	❒1	❒2	❒3	❒8
b. Garbage, litter, or broken glass in the street or road, on the sidewalks, or in yards	❒1	❒2	❒3	❒8
c. Selling or using drugs or excessive drinking in public	❒1	❒2	❒3	❒8
d. Gangs	❒1	❒2	❒3	❒8
e. Heavy traffic	❒1	❒2	❒3	❒8
f. Violent crimes like drive-by shootings	❒1	❒2	❒3	❒8
g. Vacant houses and buildings	❒1	❒2	❒3	❒8
h. Crime in the neighborhood	❒1	❒2	❒3	❒8

40. Please indicate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line*.

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. I get satisfaction from seeing student progress at this school.	❒1	❒2	❒3	❒4
b. I feel like I am making a difference at this school.	❒1	❒2	❒3	❒4
c. The stress and disappointment involved in working at this school aren't really worth it.	❒1	❒2	❒3	❒4
d. The teachers at this school like being here; I would describe them as a satisfied group.	❒1	❒2	❒3	❒4
e. I feel empowered to make decisions that affect my work at this school.	❒1	❒2	❒3	❒4
f. I like the way things are run at this school.	❒1	❒2	❒3	❒4
g. I think about transferring to another school.	❒1	❒2	❒3	❒4
h. I don't seem to have as much enthusiasm now as I did when I began my career as a principal.	❒1	❒2	❒3	❒4
i. I think about staying home from school because I'm just too tired to go.	❒1	❒2	❒3	❒4

Classroom Instruction

41. Does this school use any of the following methods to organize classes or student groups?

	Yes	No
a. Traditional grade levels or academic discipline-based departments	❒1	❒2
b. Grades or schools subdivided into small groups such as “houses” or “families”	❒1	❒2
c. Student groups that remain two or more years with the same teacher (looping)	❒1	❒2
d. Interdisciplinary teaching (e.g., two or more teachers with different academic specializations collaborate to teach the same group of students)	❒1	❒2
e. Paired or team teaching (e.g., two teachers are jointly responsible for a single group of students)	❒1	❒2

42. Has this school implemented any of the following?

	Yes	No
a. Scheduling of class periods to create extended instructional blocks of time (block scheduling)	❒1	❒2
b. Before-school or after-school remedial programs	❒1	❒2
c. Before-school or after-school enrichment programs	❒1	❒2
d. Academic intersessions or summer school activities for students needing extra assistance to meet academic expectations	❒1	❒2
e. Academic intersessions or summer school activities for students seeking academic advancement or acceleration	❒1	❒2
f. School calendar where the number of days for students exceeds mandatory days per year	❒1	❒2
g. Year-round calendar to distribute school days across twelve months	❒1	❒2

Student Support

43. Does this school sponsor a formal adult-student mentoring program?

❒1 Yes

❒2 No

44. Does this school sponsor a formal older student-younger student mentoring program?

❒1 Yes

❒2 No

45. Does this school currently have a drug, alcohol, or tobacco prevention program?

❒$_1$ Yes

❒$_2$ No

46. Does this school currently have a violence prevention program?

❒$_1$ Yes

❒$_2$ No

47. Does this school currently have any other program to support students that you feel is important to the students' success?

❒$_1$ Yes ⟶ If yes, what type of program? _____

❒$_2$ No

Parent Involvement

48. Last school year (2003-2004), what percentage of students had at least one parent or guardian participating in the following events?

	0–25%	26–50%	51–75%	76–100%	Not applicable
a. Open house or back-to-school night	❒$_1$	❒$_2$	❒$_3$	❒$_4$	❒$_8$
b. All regularly scheduled schoolwide parent-teacher conferences	❒$_1$	❒$_2$	❒$_3$	❒$_4$	❒$_8$
c. One or more special subject-area events (e.g., science fair, concerts, etc.)	❒$_1$	❒$_2$	❒$_3$	❒$_4$	❒$_8$

49. This school year (2004–2005), does this school have the following?

	Yes	No
a. A staff member assigned to work on parent involvement	❒$_1$	❒$_2$
b. A log of parent participation maintained by parents or staff	❒$_1$	❒$_2$
c. A reliable system of communication with parents, such as newsletters or phone trees	❒$_1$	❒$_2$
d. Services to support parent participation, such as providing child care or transportation	❒$_1$	❒$_2$
e. A parent drop-in center or lounge	❒$_1$	❒$_2$
f. A requirement that teachers send information home to parents explaining school lessons	❒$_1$	❒$_2$
g. A requirement that teachers provide suggestions for activities that parents can do at home with their child	❒$_1$	❒$_2$
h. A requirement that teachers create homework assignments that involve parents	❒$_1$	❒$_2$

50. Last school year (2003–2004), were any of the following offered to parents or guardians?

	Yes	No
a. Parent education workshops or courses	❒1	❒2
b. Written contract between the school and parent/guardian	❒1	❒2
c. Opportunities for parents/ guardians to serve as volunteers in the school on a regular basis	❒1	❒2

Professional Development

51. In the past 12 months, have you participated in the following kinds of professional development?

	Yes	No
a. University course(s) related to your role as principal	❒1	❒2
b. Visits to other schools designed to improve your own work as principal	❒1	❒2
c. Individual or collaborative research on a topic of interest to you professionally	❒1	❒2
d. Mentoring and/or peer observation and coaching of principals, as part of a formal arrangement that is recognized or supported by the school or district	❒1	❒2
e. Participating in a principal network (e.g., group of principals organized by an outside agency or through the internet)	❒1	❒2
f. Workshops, conferences, or inservice training in which you were a presenter	❒1	❒2
g. Other workshops or conferences in which you were not a presenter	❒1	❒2

52. In the past 12 months, how often have you participated in professional development activities with teachers from this school?

❒1 Never

❒2 Once or twice

❒3 3 to 5 times

❒4 6 or more times

53. Have you had any professional development related to single-sex schooling?

❒1 Yes ⟶ If yes, what were the topics and duration of trainings?

❒2 No

Topics	***Duration***
_____	_____
_____	_____

Single Sex Schooling

54. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

At this school . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. same-sex teachers serve as role models for students	❒1	❒2	❒3	❒4
b. opposite-sex teachers serve as role models for students	❒1	❒2	❒3	❒4
c. students have same-sex peer role models who are academically successful	❒1	❒2	❒3	❒4

55. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

In comparison to coeducational schools, public single sex schools . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are more expensive to operate	❒1	❒2	❒3	❒4
b. have greater financial resources	❒1	❒2	❒3	❒4
c. result in higher academic achievement for girls	❒1	❒2	❒3	❒4
d. result in higher academic achievement for boys	❒1	❒2	❒3	❒4
e. result in higher academic achievement for at-risk students	❒1	❒2	❒3	❒4
f. reduce negative behaviors for at-risk students	❒1	❒2	❒3	❒4
g. provide an environment more conducive to learning	❒1	❒2	❒3	❒4
h. are a better environment for meeting students' emotional needs	❒1	❒2	❒3	❒4
i. are viewed negatively by the community	❒1	❒2	❒3	❒4
j. do not prepare students for the sex-integrated workplace	❒1	❒2	❒3	❒4
k. reinforce sex-role stereotypes	❒1	❒2	❒3	❒4
l. do not prepare students for interactions with the other sex outside of school	❒1	❒2	❒3	❒4
m. have fewer extracurricular activities	❒1	❒2	❒3	❒4
n. provide curriculum materials that are more appropriate to the needs of each sex	❒1	❒2	❒3	❒4

56. **Do you have girls at this school?**

❒$_1$ Yes (continue to Question #57)

❒$_2$ No (skip to page 17)

57. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Girls in my school . . .	**Not applicable**	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are taught math and science the same way we teach boys	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
b. are taught reading or language arts the same way we teach boys	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
c. have interests that are different from their classmates	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
d. discuss their interests with me	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
e. discuss their insecurities with me	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
f. seem comfortable being in a group of all girls	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
g. are not focused on how they dress	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$
h. are teased by students from other schools for attending a girls' school	❒$_0$	❒$_1$	❒$_2$	❒$_3$	❒$_4$

58. Please estimate what percent of the **girls** in your school . . .

	0-25%	**26-50%**	**51-75%**	**76-100%**
a. are respectful toward teachers	❒$_1$	❒$_2$	❒$_3$	❒$_4$
b. are respectful toward the administration	❒$_1$	❒$_2$	❒$_3$	❒$_4$
c. treat each other with respect	❒$_1$	❒$_2$	❒$_3$	❒$_4$
d. work together cooperatively	❒$_1$	❒$_2$	❒$_3$	❒$_4$
e. assume a leadership role in the classroom or school	❒$_1$	❒$_2$	❒$_3$	❒$_4$
f. need frequent discipline for disruptive behavior	❒$_1$	❒$_2$	❒$_3$	❒$_4$
g. bully other students	❒$_1$	❒$_2$	❒$_3$	❒$_4$
h. put down other students	❒$_1$	❒$_2$	❒$_3$	❒$_4$

59. Please estimate the percent of the **girls** in your school who. . .

	0-25%	26-50%	51-75%	76-100%
a. express stereotyped views of male and female roles	❒1	❒2	❒3	❒4
b. tell sexist jokes or make sexist remarks	❒1	❒2	❒3	❒4
c. enjoy attending a single sex school	❒1	❒2	❒3	❒4
d. view girls as being superior to boys	❒1	❒2	❒3	❒4
e. express interest in stereotypical female careers	❒1	❒2	❒3	❒4
f. express interest in stereotypical male careers	❒1	❒2	❒3	❒4
g. have parents who prefer that their daughters attend single sex schools	❒1	❒2	❒3	❒4

60. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Skip this item if you are the principal of an elementary school.

Girls in my school . . .	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. are involved in extracurricular academic activities (e.g., mock trial, science fair)	❒1	❒2	❒3	❒4
b. are focused on athletics and sports	❒1	❒2	❒3	❒4
c. seek leadership roles in student government	❒1	❒2	❒3	❒4
d. show more respect for student athletes than academic high achievers	❒1	❒2	❒3	❒4
e. participate in clubs that are non-traditional for girls	❒1	❒2	❒3	❒4

61. Please estimate the percent of **girls** in your school who . . .

	0-25%	26-50%	51-75%	76-100%
a. are focused on being attractive	❒1	❒2	❒3	❒4
b. express concern about dating and relationships	❒1	❒2	❒3	❒4
c. know how to get along with both sexes	❒1	❒2	❒3	❒4
d. are teased by their female peers	❒1	❒2	❒3	❒4
e. feel safe from sexual harassment at school	❒1	❒2	❒3	❒4
f. feel safe from threats at school	❒1	❒2	❒3	❒4
g. have the social skills they will need in the mixed-sex work place	❒1	❒2	❒3	❒4
h. can stand up for themselves in confrontations with peers	❒1	❒2	❒3	❒4

62. **Do you have boys at this school?**

❒1 Yes (continue to Question #63)

❒2 No (skip to page 20)

63. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Boys in my school . . .	Not applicable	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. are taught math and science the same way we teach girls	❒0	❒1	❒2	❒3	❒4
b. are taught reading or language arts the same way we teach girls	❒0	❒1	❒2	❒3	❒4
c. have interests that are different from their classmates	❒0	❒1	❒2	❒3	❒4
d. discuss their interests with me	❒0	❒1	❒2	❒3	❒4
e. discuss their insecurities with me	❒0	❒1	❒2	❒3	❒4
f. are not focused on how they dress	❒0	❒1	❒2	❒3	❒4
g. seem comfortable being in a group of all boys	❒0	❒1	❒2	❒3	❒4
h. are teased by students from other schools for attending a boys' school	❒0	❒1	❒2	❒3	❒4

64. Please estimate what percent of the **boys** in your school . . .

	0-25%	26-50%	51-75%	76-100%
a. are respectful toward teachers	❒1	❒2	❒3	❒4
b. are respectful toward the administration	❒1	❒2	❒3	❒4
c. treat each other with respect	❒1	❒2	❒3	❒4
d. work together cooperatively	❒1	❒2	❒3	❒4
e. assume a leadership role in the classroom or school	❒1	❒2	❒3	❒4
f. need frequent discipline for disruptive behavior	❒1	❒2	❒3	❒4
g. bully other students	❒1	❒2	❒3	❒4
h. put down other students	❒1	❒2	❒3	❒4

65. Please estimate the percent of the **boys** in your school who. . .

	0-25%	26-50%	51-75%	76-100%
a. express stereotyped views of male and female roles	❒1	❒2	❒3	❒4
b. tell sexist jokes or make sexist remarks	❒1	❒2	❒3	❒4
c. enjoy attending a single sex school	❒1	❒2	❒3	❒4
d. view boys as being superior to girls	❒1	❒2	❒3	❒4
e. express interest in stereotypical female careers	❒1	❒2	❒3	❒4
f. express interest in stereotypical male careers	❒1	❒2	❒3	❒4
g. have parents who prefer that their sons attend single sex schools	❒1	❒2	❒3	❒4

66. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Skip this item if you are the principal of an elementary school.

Boys in my school. . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are involved in extracurricular academic activities (e.g., mock trial, science fair)	❒1	❒2	❒3	❒4
b. are focused on athletics and sports	❒1	❒2	❒3	❒4
c. seek leadership roles in student government	❒1	❒2	❒3	❒4
d. show more respect for student athletes than academic high achievers	❒1	❒2	❒3	❒4
e. participate in clubs that are non-traditional for boys	❒1	❒2	❒3	❒4

67. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Boys in my school. . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are focused on being attractive	❒1	❒2	❒3	❒4
b. worry about dating and relationships	❒1	❒2	❒3	❒4
c. know how to get along with both sexes	❒1	❒2	❒3	❒4
d. are teased by their male peers	❒1	❒2	❒3	❒4
e. feel safe from sexual harassment at school	❒1	❒2	❒3	❒4
f. feel safe from threats at school	❒1	❒2	❒3	❒4
g. have the social skills they will need in the mixed-sex work place	❒1	❒2	❒3	❒4
h. can stand up for themselves in confrontations with peers	❒1	❒2	❒3	❒4

68. Listed below are several reasons that practitioners have given to support single sex education. In the box at the bottom of the page, please write in the letters corresponding to the ***five reasons*** you believe are ***most important***. If your most important reasons are not listed, please add them in items o, p, and q.

Single sex education . . .

a. decreases the academic problems of low achieving students.
b. decreases distractions to learning.
c. improves student self esteem.
d. decreases gender role stereotyping.
e. allows for more opportunities to provide social and moral guidance.
f. provides more leadership opportunities.
g. addresses the unique learning styles and interests of girls or boys.
h. reduces student behavior problems.
i. provides more positive student role models.
j. decreases sex bias in teacher-student interactions.
k. provides choice in public education.
l. promotes a sense of community among students and staff.
m. reduces sexual harassment among students.
n. Improves student achievement.
o. other (specify): _____
p. other (specify): _____
q. other (specify): _____

Write in the letters corresponding to what you believe are the 5 most important reasons for offering single sex education:

_____ Most important
_____ Second most important
_____ Third most important
_____ Fourth most important
_____ Fifth most important

69. How much of a challenge have the following issues been for this school?
Mark (X) one box on each line.

Challenge	No challenge	A small challenge	A moderate challenge	A huge challenge
a. Turnover in school leadership	❒1	❒2	❒3	❒4
b. Teacher turnover	❒1	❒2	❒3	❒4
c. Lack of district level support	❒1	❒2	❒3	❒4
d. Lack of real choice for students to be here	❒1	❒2	❒3	❒4
e. Insufficient funding compared to other schools in this district	❒1	❒2	❒3	❒4
f. Competition for students from other magnet or charter schools	❒1	❒2	❒3	❒4
g. Reputation of school as undesirable	❒1	❒2	❒3	❒4
h. Low student enrollment	❒1	❒2	❒3	❒4
i. Class sizes too large	❒1	❒2	❒3	❒4
j. Insufficient professional development on single sex education	❒1	❒2	❒3	❒4
k. Insufficient professional development on teaching low achieving students	❒1	❒2	❒3	❒4
l. Unclear mission or purpose of single sex education	❒1	❒2	❒3	❒4
m. Insufficient course offerings compared to coed schools in district	❒1	❒2	❒3	❒4
n. Lack of sufficient curriculum focus on state standards	❒1	❒2	❒3	❒4
o. Conflict with other school reform efforts	❒1	❒2	❒3	❒4
p. Parent opposition to change	❒1	❒2	❒3	❒4
q. Negative community perceptions about single-sex schools	❒1	❒2	❒3	❒4

Principal Background

70. Are you female or male?

❒1 Female

❒2 Male

71. Are you of Hispanic or Latino origin?

- ❒$_1$ Yes
- ❒$_2$ No

72. What is your race? *Please select one or more.*

- ❒$_a$ White
- ❒$_b$ Black or African American
- ❒$_c$ Asian
- ❒$_d$ Native Hawaiian or Other Pacific Islander
- ❒$_e$ American Indian or Alaska Native

73. How many years of experience do you have in each of the following positions? Write in the number of years below. *Count part of a year as 1 year. If none, mark 0.*

	Number of <u>years</u>
a. Years as a teacher before becoming a principal	_____
b. Total number of years as a principal	_____
c. Number of years as principal of a single-sex school	_____
d. Total number of years as principal of this school	_____

74. What is the highest degree you have obtained as of December 2004? *Mark (X) only one box.*

- ❒$_1$ Associate degree
- ❒$_2$ Bachelors (B.A., B.S., B.E., etc.)
- ❒$_3$ Master's degree (M.A., M.A.T., M.B.A., M.Ed., M.S., etc.)
- ❒$_4$ Education specialist or certification (at least one year beyond master's level)
- ❒$_5$ Doctorate or first professional degree (Ph.D., Ed.D., M.D., L.L.B., J.D., D.D.S.)
- ❒$_6$ Do not have a degree

Thank you for your participation in this survey!

Please use the enclosed envelope to mail your survey:

Dr. Bonnie J. Faddis
RMC Research Corporation
522 SW Fifth Avenue, Suite 1407
Portland, OR 97204

If you have any questions, please call Bonnie Faddis or Margaret Beam at (800) 788-1887

Form Approved
OMB No. 1875-0234
Expiration Date: 01/31/2008

Single Sex Schools
Teacher Survey

Date Completed: __/__/__

About This Survey

This survey contains questions concerning your school such as student characteristics, classroom instruction, school climate, and your opinions about single sex schooling. Some questions may ask that you respond separately for boys and girls.

Please write your answers directly on the survey by checking the appropriate boxes or by writing your response in the space provided.

We expect that it will take approximately one hour to complete the survey.

We have taken several steps to ensure that the information you provide is not connected with your name or school name:

- Your survey will include an ID number only.
- We have enclosed a self-addressed stamped envelope for you to mail your survey directly to RMC Research. Surveys will be seen only by the researchers and will be identified only by the ID number.
- No names or institutional identifiers will be used in any reports. Survey responses will be reported in aggregate form only. It may be possible for a reader to determine which schools participated in this study because of their unique characteristics, but our reports will not link these characteristics to your responses.

Please return this survey no later than March 18, 2005

Thank you very much for your help.

Single Sex Schools
Teacher Survey

Student Characteristics

1. What is the total number of boys and girls in your class(es)? *Write in the number of students below. Write 0 if you do not teach one sex.*

	Number of students
a. Number of boys	_____
b. Number of girls	_____
c. Total	_____

2. In which grades are the students you currently teach? *Mark (X) all that apply.*

❒a Pre-kindergarten	❒f 4th	❒k 9th
❒b Kindergarten	❒g 5th	❒l 10th
❒c 1st	❒h 6th	❒m 11th
❒d 2nd	❒i 7th	❒n 12th
❒e 3rd	❒j 8th	❒o Ungraded

Class Organization

3. Which statement **best describes** the way **your** class(es) at this school are organized? *Mark (X) only one box.*

❒1 You instruct several classes of different students most or all of the day in one or more subjects (such as algebra, history, biology). (Departmentalized Instruction)

❒2 You are an elementary school teacher who teaches only one subject (such as art, music, physical education, or computer skills). (Elementary Enrichment Class)

❒3 You instruct the same group of students all or most of the day in multiple subjects (Self-Contained Class)

❒4 You are one of two or more teachers, in the same class, at the same time, and are jointly responsible for teaching a single group of students. (Team Teaching)

❒5 You instruct selected students released from their regular classes in specific skills or to address specific needs (such as gifted and talented, special education, reading, English as a Second Language). ("Pull-Out" Class)

4. What subject(s) are you teaching *this year*? *Mark (X) all that apply.*

- ❒a Multiple subjects (elementary grades)
- ❒b English or language arts
- ❒c Mathematics
- ❒d Science
- ❒e Social studies or history
- ❒f Foreign language
- ❒g Physical education or health
- ❒h Visual or performing arts
- ❒i Special education
- ❒j Vocational or professional/technical education
- ❒k English instruction for English Language Learners
- ❒l Other (Please specify_____)

Professional Development

5. In the past 12 months did you participate in any of the following professional development activities?

a. University courses related to teaching
- ❒1 Yes → If yes, how many? _____
- ❒2 No

b. Observational visits to other schools
- ❒1 Yes → If yes, how many? _____
- ❒2 No

c. Observational visits to other classrooms within your school
- ❒1 Yes → If yes, how many? _____
- ❒2 No

d. Workshops, conferences, or inservice training sessions in which you were a presenter
- ❒1 Yes → If yes, how many? _____
- ❒2 No

e. Other workshops, conferences, or inservice training sessions in which you were NOT a presenter
- ❒1 Yes → If yes, how many? _____
- ❒2 No

f. Reading of professional journals or magazine articles or books related to education?
- ❒1 Yes → If yes, what is the average number of hours you spend reading per month? _____
- ❒2 No

6. In the past 12 months, did you participate in any professional development activities specific to these content areas? *Mark (X) all that apply*.

- ❒a Reading
- ❒b Other language arts (writing, spelling, listening, speaking)
- ❒c Mathematics
- ❒d Science
- ❒e Social studies or history
- ❒f Physical education or health
- ❒g Visual or performing arts
- ❒h Student assessment
- ❒i Student discipline and classroom management
- ❒j Use of technology in instruction
- ❒k Instruction for English Language Learners
- ❒l Special education
- ❒m Single-sex schooling
- ❒n Other: _____

School Climate

7. To the best of your knowledge, how often do the following types of problems occur with students at this school? *Mark (X) one box on each row.*

	Daily	At least once a week	At least once a month	On occasion	Never
a. Physical abuse of teachers	❒1	❒2	❒3	❒4	❒5
b. Student racial tensions	❒1	❒2	❒3	❒4	❒5
c. Student bullying	❒1	❒2	❒3	❒4	❒5
d. Student verbal abuse of teachers	❒1	❒2	❒3	❒4	❒5
e. Widespread disorder in classrooms	❒1	❒2	❒3	❒4	❒5
f. Gang activities	❒1	❒2	❒3	❒4	❒5

8. To what extent do you agree or disagree with each of the following statements? *Mark (X) one box on each row.*

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. The principal lets staff members know what is expected of them.	❒1	❒2	❒3	❒4
b. The school administration's behavior toward the staff is supportive and encouraging.	❒1	❒2	❒3	❒4
c. I am satisfied with my teaching salary.	❒1	❒2	❒3	❒4
d. The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria or student lounge) interferes with my teaching.	❒1	❒2	❒3	❒4
e. I receive a great deal of support from parents for the work I do.	❒1	❒2	❒3	❒4
f. Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.	❒1	❒2	❒3	❒4
g. Routine duties and paperwork interfere with my job of teaching.	❒1	❒2	❒3	❒4
h. My principal enforces school rules for student conduct and backs me up when I need it.	❒1	❒2	❒3	❒4
i. Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.	❒1	❒2	❒3	❒4
j. Most of my colleagues share my beliefs and values about what the central mission of the school should be.	❒1	❒2	❒3	❒4
k. The principal knows what kind of school he/she wants and has communicated it to the staff.	❒1	❒2	❒3	❒4
l. There is a great deal of cooperative effort among the staff members.	❒1	❒2	❒3	❒4
m. In this school, staff members are recognized for a job well done.	❒1	❒2	❒3	❒4
n. I worry about the security of my job because of the performance of my students on state and/or local tests.	❒1	❒2	❒3	❒4
o. State or district content standards have had a positive influence on my satisfaction with teaching.	❒1	❒2	❒3	❒4
p. I am satisfied with my class size.	❒1	❒2	❒3	❒4
q. I am given the support I need to teach students with special needs.	❒1	❒2	❒3	❒4
r. I make a conscious effort to coordinate the content of my courses with that of other	❒1	❒2	❒3	❒4

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
	teachers.				
s.	The amount of student tardiness and class cutting in this school interferes with my teaching.	❒1	❒2	❒3	❒4
t.	I sometimes feel it is a waste of time to try to do my best as a teacher.	❒1	❒2	❒3	❒4
u.	I am generally satisfied with being a teacher at this school.	❒1	❒2	❒3	❒4

9. To what extent is each of the following a problem at this school? *Mark (X) one box on each row.*

		Not a problem	Minor problem	Moderate problem	Serious problem
a.	Student tardiness	❒1	❒2	❒3	❒4
b.	Student absenteeism	❒1	❒2	❒3	❒4
c.	Teacher absenteeism	❒1	❒2	❒3	❒4
d.	Student class cutting	❒1	❒2	❒3	❒4
e.	Physical conflicts among students	❒1	❒2	❒3	❒4
f.	Robbery or theft	❒1	❒2	❒3	❒4
g.	Vandalism of school property	❒1	❒2	❒3	❒4
h.	Student pregnancy	❒1	❒2	❒3	❒4
i.	Student use of alcohol	❒1	❒2	❒3	❒4
j.	Student drug abuse	❒1	❒2	❒3	❒4
k.	Student possession of weapons	❒1	❒2	❒3	❒4
l.	Student disrespect for teachers	❒1	❒2	❒3	❒4
m.	Students dropping out	❒1	❒2	❒3	❒4
n.	Student apathy	❒1	❒2	❒3	❒4
o.	Lack of parental involvement	❒1	❒2	❒3	❒4
p.	Poverty	❒1	❒2	❒3	❒4
q.	Students come to school unprepared to learn	❒1	❒2	❒3	❒4
r.	Poor student health	❒1	❒2	❒3	❒4

10. Please indicate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each row.*

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. I get satisfaction from seeing student progress at this school.	❒1	❒2	❒3	❒4
b. I feel like I am making a difference at this school.	❒1	❒2	❒3	❒4
c. The stress and disappointment involved in teaching at this school aren't really worth it.	❒1	❒2	❒3	❒4
d. The teachers at this school like being here; I would describe us as a satisfied group.	❒1	❒2	❒3	❒4
e. I feel empowered to make decisions that affect my work at this school.	❒1	❒2	❒3	❒4
f. I like the way things are run at this school.	❒1	❒2	❒3	❒4
g. I think about transferring to another school.	❒1	❒2	❒3	❒4
h. I don't seem to have as much enthusiasm now as I did when I began teaching.	❒1	❒2	❒3	❒4
i. I think about staying home from school because I'm just too tired to go.	❒1	❒2	❒3	❒4

Classroom Instruction and Assessment

11. Do you have access to your students' most recent scores on state or district achievement tests?

❒1 Yes (Continue to Question 12)

❒2 No (Skip to Question 13)

❒3 Not applicable; my students have not taken a state or district achievement test (Skip to Question 13)

12. To what extent do you use the information from your students' state or district achievement test scores to do each of the following?

Activity	Not at all	To a small extent	To a moderate extent	To a great extent
a. To group students into different instructional groups by achievement or ability	❒1	❒2	❒3	❒4
b. To assess areas where you need to strengthen your content knowledge or teaching practice	❒1	❒2	❒3	❒4
c. To adjust your curriculum in areas where your students encountered problems	❒1	❒2	❒3	❒4

13. To what extent do you use state or district standards to guide your instructional practice?

- ❒1 Not at all
- ❒2 To a small extent
- ❒3 To a moderate extent
- ❒4 To a great extent

14. How often do students in your class who need more help receive the following services while at school? *Mark (X) one box on each line.*

Activity	Never	Less than once a week	Once or twice a week	3 or 4 times a week	Daily
a. Individual assistance from you outside of class time	❒1	❒2	❒3	❒4	❒5
b. Individual tutoring from aides or volunteers outside of class time	❒1	❒2	❒3	❒4	❒5
c. Pull-out instruction	❒1	❒2	❒3	❒4	❒5
d. Individual tutoring by a specialist in class	❒1	❒2	❒3	❒4	❒5
e. Individual tutoring from an aide or volunteer in class	❒1	❒2	❒3	❒4	❒5
f. In-class instruction in small groups	❒1	❒2	❒3	❒4	❒5
g. Other (_____)	❒1	❒2	❒3	❒4	❒5

Single Sex Schooling

15. Is this single sex school a newly created school or was it originally a coeducational school?

- ❒1 A newly created school
- ❒2 A pre-existing coeducational school
- ❒3 Don't know

16. Were you teaching at this school before it became a single sex school?

- ❒1 Yes
- ❒2 No (Skip to Question 18)

17. Did you support this school's conversion to a single sex school?

- ❒1 Yes
- ❒2 No

18. Did you ever attend a single sex school as a student in Grades K-12?

- ❒1 Yes
- ❒2 No

19. Have any of your own children attended a single sex school in Grades K-12?

- ❒1 Yes
- ❒2 No
- ❒3 Not applicable (I have not had any school-age children)

20. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

At this school . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. same sex teachers serve as role models for students	❒1	❒2	❒3	❒4
b. opposite sex teachers serve as role models for students	❒1	❒2	❒3	❒4
c. students have same sex peer role models who are academically successful	❒1	❒2	❒3	❒4

21. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

In comparison to coeducational schools, public single sex schools . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. result in higher academic achievement for girls	❒1	❒2	❒3	❒4
b. result in higher academic achievement for boys	❒1	❒2	❒3	❒4
c. result in higher academic achievement for at-risk students	❒1	❒2	❒3	❒4
d. reduce negative behaviors for at-risk students	❒1	❒2	❒3	❒4
e. provide an environment more conducive to learning	❒1	❒2	❒3	❒4
f. are a better environment for meeting students' emotional needs	❒1	❒2	❒3	❒4
g. are viewed negatively by the community	❒1	❒2	❒3	❒4
h. do not prepare students for the sex-integrated workplace	❒1	❒2	❒3	❒4
i. reinforce sex-role stereotypes	❒1	❒2	❒3	❒4
j. do not prepare students for interactions with the other sex outside of school	❒1	❒2	❒3	❒4
k. have fewer extracurricular activities	❒1	❒2	❒3	❒4
l. provide curriculum materials that are more appropriate to the needs of each sex	❒1	❒2	❒3	❒4

22. **Do you teach girls?**

❒$_1$ Yes (continue to Question #23)

❒$_2$ No (skip to page 31)

23. Please estimate what percent of the **girls** in your class(es) . . .

	0-25%	26-50%	51-75%	76-100%
a. contribute to academic discussions	❒$_1$	❒$_2$	❒$_3$	❒$_4$
b. show confidence in their intellectual abilities	❒$_1$	❒$_2$	❒$_3$	❒$_4$
c. do not express concern if they are failing	❒$_1$	❒$_2$	❒$_3$	❒$_4$
d. strive to get good grades	❒$_1$	❒$_2$	❒$_3$	❒$_4$
e. are disengaged from school	❒$_1$	❒$_2$	❒$_3$	❒$_4$
f. spend independent study time on academic activities such as reading	❒$_1$	❒$_2$	❒$_3$	❒$_4$
g. are easily distracted from their schoolwork	❒$_1$	❒$_2$	❒$_3$	❒$_4$
h. explore subject areas or take courses they might not in a coed school	❒$_1$	❒$_2$	❒$_3$	❒$_4$
i. complete their homework regularly	❒$_1$	❒$_2$	❒$_3$	❒$_4$
j. seek feedback about their class work	❒$_1$	❒$_2$	❒$_3$	❒$_4$
k. make fun of girls who excel academically	❒$_1$	❒$_2$	❒$_3$	❒$_4$
l. chose to attend a single sex school for academic reasons	❒$_1$	❒$_2$	❒$_3$	❒$_4$

24. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Girls in my class(es) . . .	**Not applicable**	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are taught math and science the same way I teach boys	❒0	❒1	❒2	❒3	❒4
b. are taught reading or language arts the same way I teach boys	❒0	❒1	❒2	❒3	❒4
c. ask questions in class	❒0	❒1	❒2	❒3	❒4
d. have interests that are different from their classmates	❒0	❒1	❒2	❒3	❒4
e. discuss their interests with me	❒0	❒1	❒2	❒3	❒4
f. discuss their insecurities with me	❒0	❒1	❒2	❒3	❒4
g. discuss issues related to sexuality with me	❒0	❒1	❒2	❒3	❒4
h. seem comfortable being in a group of all girls	❒0	❒1	❒2	❒3	❒4
i. are not focused on how they dress	❒0	❒1	❒2	❒3	❒4
j. feel safe from being ridiculed	❒0	❒1	❒2	❒3	❒4
k. are teased by students from other schools for attending a girls' school	❒0	❒1	❒2	❒3	❒4

25. Please estimate what percent of the **girls** in your class(es) . . .

	0-25%	**26-50%**	**51-75%**	**76-100%**
a. are respectful toward teachers	❒1	❒2	❒3	❒4
b. are respectful toward the administration	❒1	❒2	❒3	❒4
c. treat each other with respect	❒1	❒2	❒3	❒4
d. work together cooperatively	❒1	❒2	❒3	❒4
e. assume a leadership role in the classroom	❒1	❒2	❒3	❒4
f. need frequent discipline for disruptive behavior	❒1	❒2	❒3	❒4
g. bully other students	❒1	❒2	❒3	❒4
h. put down other students	❒1	❒2	❒3	❒4

26. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

In my all-girl classes . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. I spend a lot of time managing student behavior	❒1	❒2	❒3	❒4
b. I match my teaching methods to the unique needs of girls	❒1	❒2	❒3	❒4
c. there is a good balance between cooperation and competition among students	❒1	❒2	❒3	❒4
d. the rules are strictly enforced	❒1	❒2	❒3	❒4
e. I feel prepared to meet the unique needs of girls	❒1	❒2	❒3	❒4
f. I tailor the curriculum to girls' interests	❒1	❒2	❒3	❒4

27. Please estimate the percent of the **girls** in your class(es) who. . .

	0-25%	**26-50%**	**51-75%**	**76-100%**
a. express stereotyped views of male and female roles	❒1	❒2	❒3	❒4
b. tell sexist jokes or make sexist remarks	❒1	❒2	❒3	❒4
c. enjoy attending a single sex school	❒1	❒2	❒3	❒4
d. view girls as being superior to boys	❒1	❒2	❒3	❒4
e. aspire to having a successful career	❒1	❒2	❒3	❒4
f. express interest in stereotypical female careers	❒1	❒2	❒3	❒4
g. express interest in stereotypical male careers	❒1	❒2	❒3	❒4
h. have parents who prefer that their daughters attend single sex schools	❒1	❒2	❒3	❒4

28. Please estimate the percent of the **girls** in your class(es) who. . .

(Skip this item and go to Question 30 if you teach in an elementary school.)

	0-25%	26-50%	51-75%	76-100%
a. are involved in extracurricular academic activities (e.g., mock trial, science fair)	❒1	❒2	❒3	❒4
b. are focused on athletics and sports	❒1	❒2	❒3	❒4
c. seek leadership roles in student government	❒1	❒2	❒3	❒4
d. show more respect for student athletes than academic high achievers	❒1	❒2	❒3	❒4
e. participate in clubs that are non-traditional for girls	❒1	❒2	❒3	❒4

29. Please estimate the percent of the **girls** in your class(es) who. . .

	0-25%	26-50%	51-75%	76-100%
a. are focused on being attractive	❒1	❒2	❒3	❒4
b. express concern about dating and relationships	❒1	❒2	❒3	❒4
c. know how to get along with both sexes	❒1	❒2	❒3	❒4
d. are teased by their female peers	❒1	❒2	❒3	❒4
e. feel safe from sexual harassment at school	❒1	❒2	❒3	❒4
f. feel safe from threats at school	❒1	❒2	❒3	❒4
g. have the social skills they will need in the mixed-sex work place	❒1	❒2	❒3	❒4
h. can stand up for themselves in confrontations with peers	❒1	❒2	❒3	❒4

30. **Do you teach boys?**

❒$_1$ Yes (continue to Question #31)

❒$_2$ No (skip to page 38)

31. Please estimate what percent of the **boys** in your class(es) . . .

	0-25%	26-50%	51-75%	76-100%
a. contribute to academic discussions	❒$_1$	❒$_2$	❒$_3$	❒$_4$
b. show confidence in their intellectual abilities	❒$_1$	❒$_2$	❒$_3$	❒$_4$
c. do not express concern if they are failing	❒$_1$	❒$_2$	❒$_3$	❒$_4$
d. strive to get good grades	❒$_1$	❒$_2$	❒$_3$	❒$_4$
e. are disengaged from school	❒$_1$	❒$_2$	❒$_3$	❒$_4$
f. spend independent study time on academic activities such as reading	❒$_1$	❒$_2$	❒$_3$	❒$_4$
g. are easily distracted from their schoolwork	❒$_1$	❒$_2$	❒$_3$	❒$_4$
h. explore subject areas or take courses they might not in a coed school	❒$_1$	❒$_2$	❒$_3$	❒$_4$
i. complete their homework regularly	❒$_1$	❒$_2$	❒$_3$	❒$_4$
j. seek feedback about their class work	❒$_1$	❒$_2$	❒$_3$	❒$_4$
k. make fun of boys who excel academically	❒$_1$	❒$_2$	❒$_3$	❒$_4$
l. chose to attend a single sex school for academic reasons	❒$_1$	❒$_2$	❒$_3$	❒$_4$

32. Please rate the degree to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

Boys in my class(es) . . .	**Not applicable**	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. are taught math and science the same way I teach girls	❒0	❒1	❒2	❒3	❒4
b. are taught reading or language arts the same way I teach girls	❒0	❒1	❒2	❒3	❒4
c. ask questions in class	❒0	❒1	❒2	❒3	❒4
d. have interests that are different from their classmates	❒0	❒1	❒2	❒3	❒4
e. discuss their interests with me	❒0	❒1	❒2	❒3	❒4
f. discuss their insecurities with me	❒0	❒1	❒2	❒3	❒4
g. discuss issues related to sexuality with me	❒0	❒1	❒2	❒3	❒4
h. seem comfortable being in a group of all boys	❒0	❒1	❒2	❒3	❒4
i. are not focused on how they dress	❒0	❒1	❒2	❒3	❒4
j. feel safe from being ridiculed	❒0	❒1	❒2	❒3	❒4
k. are teased by students from other schools for attending a boys' school	❒0	❒1	❒2	❒3	❒4

33. Please estimate what percent of the **boys** in your class(es) . . .

	0-25%	**26-50%**	**51-75%**	**76-100%**
a. are respectful toward teachers	❒1	❒2	❒3	❒4
b. are respectful toward the administration	❒1	❒2	❒3	❒4
c. treat each other with respect	❒1	❒2	❒3	❒4
d. work together cooperatively	❒1	❒2	❒3	❒4
e. assume a leadership role in the classroom	❒1	❒2	❒3	❒4
f. need frequent discipline for disruptive behavior	❒1	❒2	❒3	❒4
g. bully other students	❒1	❒2	❒3	❒4
h. put down other students	❒1	❒2	❒3	❒4

34. Please rate the extent to which you agree or disagree with each of the following statements. *Mark (X) one box on each line.*

In my all-boy classes . . .	**Strongly agree**	**Somewhat agree**	**Somewhat disagree**	**Strongly disagree**
a. I spend a lot of time managing student behavior	❒1	❒2	❒3	❒4
b. I match my teaching methods to the unique needs of boys	❒1	❒2	❒3	❒4
c. there is a good balance between cooperation and competition among students	❒1	❒2	❒3	❒4
d. the rules are strictly enforced	❒1	❒2	❒3	❒4
e. I feel prepared to meet the unique needs of boys	❒1	❒2	❒3	❒4
f. I tailor the curriculum to boys' interests	❒1	❒2	❒3	❒4

35. Please estimate the percent of the **boys** in your class(es) who. . .

	0-25%	**26-50%**	**51-75%**	**76-100%**
a. express stereotyped views of male and female roles	❒1	❒2	❒3	❒4
b. tell sexist jokes or make sexist remarks	❒1	❒2	❒3	❒4
c. enjoy attending a single sex school	❒1	❒2	❒3	❒4
d. view boys as being superior to girls	❒1	❒2	❒3	❒4
e. aspire to having a successful career	❒1	❒2	❒3	❒4
f. express interest in stereotypical female careers	❒1	❒2	❒3	❒4
g. express interest in stereotypical male careers	❒1	❒2	❒3	❒4
h. have parents who prefer that their sons attend a single sex school	❒1	❒2	❒3	❒4

36. Please estimate the percent of **boys** in your class(es) who. . .

(Skip this item and go to Question 37 if you teach in an elementary school.)

	0-25%	26-50%	51-75%	76-100%
a. are involved in extracurricular academic activities (e.g., mock trial, science fair)	❒1	❒2	❒3	❒4
b. are focused on athletics and sports	❒1	❒2	❒3	❒4
c. seek leadership roles in student government	❒1	❒2	❒3	❒4
d. show more respect for student athletes than academic high achievers	❒1	❒2	❒3	❒4
e. participate in clubs that are non-traditional for boys	❒1	❒2	❒3	❒4

37. Please estimate the percent of **boys** in your classes who. . .

	0-25%	26-50%	51-75%	76-100%
a. are focused on being attractive	❒1	❒2	❒3	❒4
b. express concern about dating and relationships	❒1	❒2	❒3	❒4
c. know how to get along with both sexes	❒1	❒2	❒3	❒4
d. are teased by their male peers	❒1	❒2	❒3	❒4
e. feel safe from sexual harassment at school	❒1	❒2	❒3	❒4
f. feel safe from threats at school	❒1	❒2	❒3	❒4
g. have the social skills they will need in the mixed-sex work place	❒1	❒2	❒3	❒4
h. can stand up for themselves in confrontations with peers	❒1	❒2	❒3	❒4

38. Listed below are several reasons that practitioners have given to support single sex education. In the box at the bottom of the page, please write in the letters corresponding to the ***five reasons*** you believe are ***most important***. If your most important reasons are not listed, please add them in items o, p, and q.

Single sex education . . .

a. decreases the academic problems of low achieving students.
b. decreases distractions to learning.
c. improves student self esteem.
d. decreases gender role stereotyping.
e. allows for more opportunities to provide social and moral guidance.
f. provides more leadership opportunities.
g. addresses the unique learning styles and interests of girls or boys.
h. reduces student behavior problems.
i. provides more positive student role models.
j. decreases sex bias in teacher-student interactions.
k. provides choice in public education.
l. promotes a sense of community among students and staff.
m. reduces sexual harassment among students.
n. improves student achievement.
o. other (specify): _____
p. other (specify): _____
q. other (specify): _____

Write in the letters corresponding to what you believe are the 5 most important reasons for offering single sex education:

_____ Most important
_____ Second most important
_____ Third most important
_____ Fourth most important
_____ Fifth most important

39. How much of a challenge have the following issues been for this school?
Mark (X) one box on each line.

Challenge	**No challenge**	**A small challenge**	**A moderate challenge**	**A huge challenge**
a. Turnover in school leadership	❒1	❒2	❒3	❒4
b. Teacher turnover	❒1	❒2	❒3	❒4
c. Lack of district level support	❒1	❒2	❒3	❒4
d. Lack of real choice for students to be here	❒1	❒2	❒3	❒4
e. Insufficient funding compared to other schools in this district	❒1	❒2	❒3	❒4
f. Competition for students from other magnet or charter schools	❒1	❒2	❒3	❒4
g. Reputation of school as undesirable	❒1	❒2	❒3	❒4
h. Low student enrollment	❒1	❒2	❒3	❒4
i. Class sizes too large	❒1	❒2	❒3	❒4
j. Insufficient professional development on single sex education	❒1	❒2	❒3	❒4
k. Insufficient professional development on teaching low achieving students	❒1	❒2	❒3	❒4
l. Unclear mission or purpose of single sex education	❒1	❒2	❒3	❒4
m. Insufficient course offerings compared to coed schools in district	❒1	❒2	❒3	❒4
n. Lack of sufficient curriculum focus on state standards	❒1	❒2	❒3	❒4
o. Conflict with other school reform efforts	❒1	❒2	❒3	❒4
p. Parent opposition to change	❒1	❒2	❒3	❒4
q. Community perceptions about single-sex schools	❒1	❒2	❒3	❒4
r. Other _____ _____	❒1	❒2	❒3	❒4

Teacher Background

40. Are you female or male?

- ❒1 Female
- ❒2 Male

41. Are you of Hispanic or Latino origin?

- ❒1 Yes
- ❒2 No

42. What is your race? *Please select one or more.*

- ❒a White
- ❒b Black or African American
- ❒c Asian
- ❒d Native Hawaiian or Other Pacific Islander
- ❒e American Indian or Alaska Native

43. How many years have you worked as a full-time elementary or secondary teacher in public, charter, and/or Indian schools*? Write in the number of years below. Count part year as one year.*

	Number of years
a. Total number of years as a teacher (do not include student teaching)	_____
b. Total number of years as teacher in a single-sex school	_____
c. Total number of years as a teacher at this school	_____

44. What is the highest degree you have obtained as of December 2004? *Mark (X) only one box.*

- ❒1 Associate degree
- ❒2 Bachelors (B.A., B.S., B.E., etc.)
- ❒3 Master's degree (M.A., M.A.T., M.B.A., M.Ed., M.S., etc.)
- ❒4 Education specialist or certification at least one year beyond master's level
- ❒5 Doctorate or first professional degree (Ph.D., Ed.D., M.D., L.L.B., J.D., D.D.S.)
- ❒6 Do not have a degree

45. Which of the following describes the teaching certificate(s) you currently hold in this state? *Mark (X) all that apply.*

- ❒a Regular or standard state certificate or advanced professional certificate
- ❒b Probationary certificate (issued after satisfying all requirements except the completion of a probationary period)
- ❒c Provisional or other type of certificate given to persons who are still participating in what the state calls an "alternative certification program"
- ❒d Temporary certificate (requires some additional coursework, student teaching, and/or passage of a test before regular certification can be obtained)
- ❒e Waiver or emergency certificate (issued to persons with insufficient teacher preparation who must complete a regular certification program in order to continue teaching in their current subject area or level)

46. What subject(s) are you *fully certified* to teach? *Mark (X) all that apply.*

- ❒a Elementary grades (multiple subjects)
- ❒b English or language arts
- ❒c Mathematics
- ❒d Science
- ❒e Social studies or history
- ❒f Foreign language
- ❒g Physical education or health
- ❒h Visual or performing arts
- ❒i Special education
- ❒j Vocational or professional/technical education
- ❒k English language learners
- ❒l Other (Please specify_____)

Thank you for your participation in this survey!

Please use the enclosed envelope to mail your survey to:

Dr. Bonnie J. Faddis
RMC Research Corporation
522 SW Fifth Avenue, Suite 1407
Portland, OR 97204

If you have any questions, please call Bonnie Faddis or Margaret Beam at (800) 788-1887

Classroom Observation Form – Single Sex Schooling Study

School ID: _____ **Observer:** _____ **Date:** _____ **Subject Area:** Math Lang Arts

Start Time: _____ **End Time:** _____

Teacher Characteristics:

ID: _____

Gender: ❒ Female ❒ Male

Ethnicity: ❒ White ❒ AfrAmer ❒ Other
❒ Asian ❒ Hispanic

Approx. Age: _____

Student Characteristics:

Sex: # Male _____ # Female _____

Ethnicity: # White: _____ # AfrAmer: _____
Asian: _____ # Hispanic: _____
Other: _____

Physical Environment:

Do bulletin boards/wall displays: [5]
feature both sexes? ❒ Y ❒ N
reflect stereotypes? ❒ Y ❒ N

Seating: ❒ Groups ❒ Rows

Notes on physical environment of room, teacher, students:
⇨

TEACHER	Amount of Evidence				
	None		Some		Extensive
1. Sets high academic expectations [2]	0	1	2	3	4
2. Shows sensitivity to sex differences in learning or maturation [9]	0	1	2	3	4
3. Maintains order and control [3]	0	1	2	3	4
4. Reinforces sex role stereotypes [6]	0	1	2	3	4
5. Attends to student feelings [14]	0	1	2	3	4
6. Provides opportunities for non-sex stereotyped activities [10]	0	1	2	3	4

STUDENTS	Amount of Evidence				
	None		Some		Extensive
1. Exhibit a sense of community [13]	0	1	2	3	4
2. Are engaged in academic activities [2]	0	1	2	3	4
3. Interact positively with each other [7]	0	1	2	3	4
4. Show respect for the teacher [1]	0	1	2	3	4
5. Initiate class disruptions [3]	0	1	2	3	4
6. Have completed homework [2]	0	1	2	3	4
7. Exhibit positive role modeling [4]	0	1	2	3	4
8. Engage in leadership opportunities [8]	0	1	2	3	4
9. Act out or exhibit sexual harassment [11]	0	1	2	3	4

NOTES

Topic of Lesson:	
Lesson Objectives:	

Questions/comments that teachers address to BOYS (bubble for each interaction)

	Positive	Negative
Academic	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
Behavioral	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
Other	○○○○○○○○○○	○○○○○○○○○○

Questions/comments that teachers address to GIRLS (bubble for each interaction)

	Positive	Negative
Academic	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
Behavioral	○○○○○○○○○○	○○○○○○○○○○
	○○○○○○○○○○	○○○○○○○○○○
Other	○○○○○○○○○○	○○○○○○○○○○

Behavioral comments directed to ALL STUDENTS (bubble for each interaction)

Positive	Negative
○○○○○○○○○○○○○○	○○○○○○○○○○○○○○
○○○○○○○○○○○○○○	○○○○○○○○○○○○○○

Academic Time on Task

Scan classroom at 5 minute intervals and record % of students engaged in academic activity.

	Percent Engaged	Number Engaged	Time Segment A	B	C	D	E	F	G	H	I	J
BOYS	81-100%		5	5	5	5	5	5	5	5	5	5
	61-80%		4	4	4	4	4	4	4	4	4	4
	41-60%		3	3	3	3	3	3	3	3	3	3
	21-40%		2	2	2	2	2	2	2	2	2	2
	0-20%		1	1	1	1	1	1	1	1	1	1

Observation Time

	Percent Engaged	Number Engaged	Time Segment A	B	C	D	E	F	G	H	I	J
GIRLS	81-100%		5	5	5	5	5	5	5	5	5	5
	61-80%		4	4	4	4	4	4	4	4	4	4
	41-60%		3	3	3	3	3	3	3	3	3	3
	21-40%		2	2	2	2	2	2	2	2	2	2
	0-20%		1	1	1	1	1	1	1	1	1	1

Instructional Characteristics

	Activity	Amount of Evidence None		Some		Extensive
INSTRUCTION	1. Direct instruction with whole class—teacher lecture	0	1	2	3	4
	2. Direct instruction with whole class—interactive	0	1	2	3	4
	3. Small group instruction based on student skill levels	0	1	2	3	4
	4. Heterogeneous small group activity	0	1	2	3	4
	5. Students work independently (worksheets, computer, …)	0	1	2	3	4
	6. Lesson includes experiential or hands-on activity	0	1	2	3	4
	7. Learning objectives for lesson are clear	0	1	2	3	4

	Instructional Characteristics
NOTES	

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