Impact Of Single Gender Programs On Achievement, Attendance, Discipline, And Character: A Program Evaluation Project

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A THREE-PART DISSERTATION:

IMPACT OF SINGLE GENDER PROGRAMS ON ACHIEVEMENT, ATTENDANCE, DISCIPLINE, AND CHARACTER: A PROGRAM EVALUATION PROJECT

ADAPTIVE CHANGE FOR AN ALL BOYS COLLEGE PREPARATORY PUBLIC MIDDLE SCHOOL: A CHANGE LEADERSHIP PROJECT

IMPLEMENTING AUTHENTIC PRACTICE THROUGH CAPSTONE PROJECTS AT SELECTED TERMINAL GRADES: A POLICY ADVOCACY DOCUMENT

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11-30-15

Date Approved
IMPACT OF SINGLE GENDER PROGRAMS ON ACHIEVEMENT, ATTENDANCE, DISCIPLINE, AND CHARACTER: A PROGRAM EVALUATION PROJECT

Carla Sparks
Educational Leadership Doctoral Program

Submitted in partial fulfillment of the requirements of
Doctor of Education
in the Foster G. McGaw Graduate School

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National Louis University
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This document is organized to meet the three-part dissertation requirement of the National Louis University (NLU) Educational Leadership (EDL) Doctoral Program. The National Louis Educational Leadership Ed.D. is a professional practice degree program (Shulman et al., 2006).

For the dissertation requirement, doctoral candidates are required to plan, research, and implement three major projects, on each year, within their school or district with a focus on professional practice. The three projects are:

- Program Evaluation
- Change Leadership Project
- Policy Advocacy Document

For the **Program Evaluation** candidates are required to identify and evaluate a program or practice within their school or district. The “program” can be a current initiative; a grant project; a common practice; or a movement. Focused on utilization, the evaluation can be formative, summative, or developmental (Patton, 2008). The candidate must demonstrate how the evaluation directly relates to student learning.

In the **Change Leadership Project** candidates develop a plan that considers organizational possibilities for renewal. The plan for organizational change may be at the building or district level. It must be related to an area in need of improvement with a clear target in mind. The candidate must be able to identify noticeable and feasible differences that should exist as a result of the change plan (Wagner et al., 2006).

In the **Policy Advocacy Document** candidates develop and advocate for a policy at the local, state or national level using reflective practice and research as a means for supporting and promoting reforms in education. Policy advocacy dissertations use critical theory to address moral and ethical issues of policy formation and administrative decision making (i.e., what ought to be). The purpose is to develop reflective, humane and social critics, moral leaders, and competent professionals, guided by a critical practical rational model (Browder, 2995).

**Works Cited**


ABSTRACT

The instance of single gender education in American public schools has risen since the 2006 amendments to Title IX permitting public schools to separate boys and girls for academic purposes. The purpose of this study is to determine the efficacy of single gender education to promote gains in student academic achievement, increase attendance levels, support character development, and decrease student discipline problems. The context of this inquiry is a large public school district that incorporates single gender education applications across the district. My study is focused on an all-girls middle school and an all-boys middle school, and it demonstrates outcomes of increased levels of attendance, positive effect on discipline and character development, and gains in academic achievement.
PREFACE

As a district administrator in a public school district, I am interested in instructional practices that lead to student achievement gains in the specific areas of academics, character development, discipline, and attendance. My work involves innovative instructional practices in magnet schools and programs, choice schools and programs, and traditional schools. I have a background in developing curriculum and instructional practices. I have found success in driving student academic achievement, increasing student attendance, improving student discipline, and impacting character development by implementing innovative instructional practices.

In my work with innovative instructional practices, I became aware of the resurgence of single gender programs across America and wanted to learn whether single gender environments would positively affect student achievement in the areas identified. Based upon current literature and personal observations, I believed that single gender education held great potential for success. This caused me to embark upon a detailed study of the single gender programs in a large public school district.

The district which is the focus of my study had implemented single gender classes within coeducational schools for several years. Then, in school year 2011-2012, the district opened an all-boys middle school and an all-girls middle school. I began my study by conducting a review of the literature related to single gender education. I specifically read about the way boys and girls learn, the differences between the male and female brain structurally and chemically, and the information processing differences between the male and female brain. I also read studies conducted previously on the impact of single gender education, as well as various sources that explained legal
requirements for implementing single gender education in public schools. I then began collecting student data from the district identified for my study.

I used a combination of three types of evaluation including a compliance focus, a summative evaluation, and a theory-driven evaluation. I conducted a comparison study of student achievement between the single gender middle schools and the other middle schools in the district based upon attendance, discipline, academic achievement gains, principals’ accounts of program success, and perception surveys of students, parents or guardians, and teachers. My overarching question that drove this evaluation was: What impact do the single gender schools in the identified school district have on the lives of the students they serve, specifically in the areas of academic achievement, school attendance, discipline, and character development?

Through this study, I learned useful leadership lessons relative to methods of evaluation. I gained practical knowledge in the area of quantitative evaluation instrument development, and survey construction, implementation, and response analysis. I learned how to develop interview questions, how to conduct formal interviews, and how to document responses to such interviews. My previous leadership experiences focused upon curriculum development, identifying innovative instructional practices, and training teachers. Now I am prepared to add evaluation skills to my leadership abilities. These new leadership abilities have prepared me to be a more effective school district administrator, as I can now better determine the value and success of new curricula and innovative instructional practices.
ACKNOWLEDGEMENTS

I would like to acknowledge a number of people for their support and guidance throughout my doctoral journey. First, I must thank my husband, Vance, for his steadfast love, enduring support, strong encouragement, and firm belief that I can reach the professional goals I have sought throughout our many years together. I also thank my family – Katie, Wesley, Vincent, Vera, and Estelle – for sacrificing family time with me while I worked on the required activities to complete this doctorate degree and for encouraging me to complete what I started.

I express my great appreciation to my dissertation chair, Dr. James Schott, and my dissertation committee member, Dr. Daniel Buckman, for their wisdom and guidance in helping me to complete a dissertation that is useful and of which I am proud. They exemplify compassionate, resonant leadership, and set the standard of leadership to which I aspire. I also thank Dr. Schott and Dr. Buckman, as well as Dr. Carol Burg and Dr. Karen O’Donnell for their time and expertise dedicated to my dissertation hearing. I appreciate their collective commitment to my successful presentation of my dissertation and the completion of final revisions. I also appreciate the contributions to my professional growth by the full group of professors who worked with my doctoral cohort – Drs. James Schott, Daniel Buckman, Carol Burg, Stuart Carrier, Joan Minnis, Dale Moxley, and Amy Samuels. The leadership lessons I have learned from all of them are immeasurable.

I would like to thank the district leaders, school leaders, and teachers in the district of my study who graciously and willingly participated in my research in various ways. Without their support and collaboration, none of this work would have been possible. My great hope is that this work will continue to benefit the students of the district. Finally, I would like to thank my friends and colleagues with whom I have worked during the last three years for their support and encouragement. They contributed more than they know to my successful completion of this goal. I am privileged to know such fine people.
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SECTION ONE: INTRODUCTION

Purpose of the Evaluation

In August 2011, the all-girls school at Middle School A and the all-boys school at Middle School B, both serving grades six through eight, opened their doors as the first single gender public schools in their school district. The school district had been operating single gender classes in a few elementary schools since 2008 under the guidelines of the 2006 Amendment to Title IX by the U.S. Department of Education that permitted public schools to separate boys and girls for academic purposes in classes and schools. The Preparatory Academies at Middle School A and Middle School B are magnet schools with the magnet theme of College Preparation. The theme emphasizes pre-advanced placement coursework to prepare students for Advanced Placement courses in high school. The school district provided an extraordinary amount of training to both faculties prior to the opening of the Preparatory Academies, and training has been ongoing ever since. The original training focused on two specific topics -- the current brain research on the differences between the male and female brains, their developmental stages, and the implications on classroom instruction; and the use of the iPad 2 as an instructional tool, as every student at the Preparatory Academies is issued an iPad 2 for use in every class every day. No training was provided on pre-advanced placement strategies prior to the schools’ opening.

The school district placed all students at both Preparatory Academies via an application and magnet lottery process. The lottery is race neutral with weighted values placed upon applicants for variables such as geo-codes, and socioeconomic status (SES) based upon Free and Reduced Lunch (FRL) eligibility. In addition, the lottery provides
professional priority if the parent is employed by the school district. As a result, the demographics of the student population when the schools opened were approximately 50% African American, 25% Caucasian, and 25% Hispanic at both sites, along with a varied SES population of students. Student achievement was not a factor used for student selection via the lottery. Both schools opened with about 200 students in grade 6, about 50 students in grade 7 and about 50 students in grade 8. It is important to note that the students in grades 7 and 8 were made up largely of those students who had attended the schools in their previous co-gender status prior to the restructuring of the schools. The school district required all the 7th and 8th grade students to apply and participate in the lottery, but the school district gave priority to those students who lived in the urban neighborhoods wherein the schools are situated and in which the students had enrolled during the previous school year. Thus, most of the 7th and 8th graders placed via the lottery were former students of Middle School A and Middle School B as just described, and only a few students from other areas who applied, as most 7th and 8th graders already were established in other middle schools. While the students in 6th grade were ethnically, racially, and economically diverse, the 7th and 8th grade students were largely African American students of low SES based upon FRL status.

As a foundational restructuring, the district appointed new principals, and the principals selected the other school site administrators and teachers. These actions were taken as the previous magnet themes were not positively affecting student achievement or attracting many students to apply to the schools. Both schools suffered myriad problems including repeated low school grades, low enrollment, poor attendance, and Middle
School B experienced considerable discipline problems that were higher than the district average.

Expectations for the new schools were high. Both principals focused on changing the culture of the schools, on strong personal development of students through character education, and on technology integration using iPads and Smart technologies. Additionally, the principals and school staff gave special attention to the theme of College Preparation, despite having not yet provided specific training to the faculties on this theme.

At the end of the first year, the lead teachers at both schools collected data on all of the changes mentioned. They conducted formal surveys among nearly 75% of students and teachers regarding the usage of the iPads, and district leaders used this information to prepare for the School Board a lengthy, formal report demonstrating a high rate of usage and satisfaction with the implementation of iPad technology among students and teachers at both schools. The lead teachers also gathered evidence from parents and students in the form of brief surveys that included open-ended questions regarding the effectiveness and impact of the new school culture and its impact on character development among the students. This evidence was positive and compelling. Throughout the school year, the school leaders used student achievement data based on the district’s formative assessments - data that were promising - then reviewed the state assessment test scores, and finally the state’s plan that assigns grades to schools. Unfortunately, the school grades were devastating. The all-girls school was assigned a grade of C while the all-boys school was assigned a grade of D. Consequently, the district identified the all-boys school as a school in need of assistance, and with this
designation, the school endured state and district level interventions and scrutiny throughout the 2012-2013 school year to ensure that the state assigned grade for 2013 would be higher than a D.

A couple of occurrences have called into question whether single gender instruction positively influences student achievement in this particular school district. The disappointing state assigned school grades to Middle School A and Middle School B sent up a red flag, and the schools began operating under a mandate from the district Superintendent to raise the level of instructional rigor. Additionally, the district’s Assessment and Evaluation Department conducted a longitudinal study focusing on student achievement during the previous five years among elementary school students in the district who enrolled in single gender classes. The study showed mixed results in terms of whether the single gender environment had affected positively student achievement. However, the data presented by each of the principals who were implementing a single gender program at the school sites during school year 2011-2012 showed positive gains in several areas including attendance, discipline, and student achievement. These findings seemed to contradict the state’s assessment and grades.

Following the 2011-2012 school year, the district collected an Annual Review of Program (ARP) data report from each school implementing single gender classes. This was the first time such data had been collected and reported in the district. Despite the state assigned grades, Middle School A and Middle School B showed positive results in their ARP data.

I evaluated the effectiveness of the Single Gender Program at Middle School A and Middle School B in school year 2012-2013. The purpose of this evaluation was to
determine what impact the Single Gender Programs at Middle School A and Middle School B were having on students in one or more of the following areas: attendance, discipline, and student achievement. This information may be invaluable in terms of addressing professional development needs of teachers and administrators, determining the value of each individual program, and informing district administrators on how to counsel principals who are interested in opening new Single Gender Programs at their school sites. I have a relationship with the district in my study that could be construed as a reason for bias in my work. However, the importance of my study to improving the district controlled such a tendency. Additionally, I asked an administrator in the district in my study to review my work to ensure control for bias.

Rationale

I am becoming increasingly aware of the school district’s position as a leader among public school districts that are implementing Single Gender Programs. The district in my study receives periodic inquiries from other districts into practices for beginning and implementing Single Gender Programs. At the same time, the school district is hesitant to grow its own Single Gender Programs because of the mixed findings from its data. I would like to be able to produce sound evidence, one way or the other, as to the effectiveness of the Single Gender Programs, so that the district in my study can develop a clear vision and plan of action moving forward.

I have listened to national experts on single gender education such as Dr. Leonard Sax, Michael Gurian, Dr. JoAnn Deak, and David Chadwell speak on the topic. I have read materials written by these experts, and so have the principals and teachers in the district in my study. I am convinced that a single gender environment offers
advantages that result in increased attendance, decreased disciplinary incidents, and increased student achievement. However, my opinion is not enough to support a district initiative, especially one that has been challenged. As a professional educator, I want to conduct due diligence by thoroughly evaluating the programs in the district in my study, and thus producing data that are insightful and reliable.

Despite my educated opinion that single gender education has merit, I am capable, as a professional who has had over 30 years of experience with the implementation of various research-based instructional designs, of stepping back from the design to gain a greater comprehension and to conduct an unbiased study and evaluation of single gender education. The need for such a careful, unbiased assessment of design is something the school district and the greater educational community desperately need. Practice must be based on sound evidence, not on biased views or knee jerk decisions in response to political pressure. The national need for sound evidence is underscored by the interaction the district in my study has had with other states’ school districts.

District leaders from a public school district in Texas contacted the district in my study, and made a visit to Middle School A and Middle School B in April 2013 to garner assistance for planning and opening an all-boys school and an all-girls school in their district. Additionally, the Gurian Institute, an organization based in Colorado whose mission is “to provide training and coaching services to parents, teachers, and youth-serving organizations committed to helping boys and girls learn and grow,” recommended Middle School A and Middle School B as single gender sites worth visiting to educators in Philadelphia who visited both schools in November 2013. The school district’s reputation as a leader in Single Gender Education seems to be growing,
and its leaders need to be sure that the programs are serving students in a manner worth replicating.

**Goal**

The intended goal of my program evaluation was to determine what impact the single gender schools in the school district in my study were having on the students enrolled in those programs. I wanted to produce evidence that demonstrates the impact, positive or negative, on students’ attendance, conduct, or academic achievement. Additionally, I wanted to include a qualitative component to my program evaluation that gathered data from students, parents and guardians, teachers, and administrators in order to capture data related to personal development and character education. This type of data is not ordinarily captured via attendance data, discipline data, and student achievement data. The qualitative data aided in gaining insight and an accurate picture of whether the programs are affecting positively students in one or more of the areas identified.

My intended goal related directly to student learning. In evaluating both quantitative and qualitative data, I was able to investigate what impact the Single Gender Programs at Middle School A and Middle School B were having on student learning. If there was an increase in attendance, then there might have been a positive correlation to improved student learning as a consequence of the instructional hours available to the student and time on task. If there was a decrease in disciplinary incidents – and disciplinary incidents often result in time out of class because of penalties such as In-School Suspension (ISS), Out-of-School Suspension (OSS), class time spent in the Main Office or the Student Affairs Office, or time spent in detention (during or after school) – then there might have been a positive correlation to improved student learning simply
because the student was spending more time engaged with instruction and more time on
task. If there was an increase in student test scores, then that would have provided more
convincing evidence of a positive related impact on student achievement. If there was an
increase in character development, then that might have indicated another gain in student
learning in an area of development that parents and American society value highly. The
indicators of character development identified in this program evaluation include the
following: responsibility, respect, honesty, integrity, confidence, perseverance, courtesy,
good judgment, good sportsmanship, competence, connectedness, dedication,
commitment, focus, empowerment, resilience, and concern for others. I identified these
specific aspects of character development because they are the traits that the school
creeds at Middle School A and Middle School B promote and which drive the school
culture.

The curriculum theory that framed and informed my inquiry into this program
evaluation is based on the premise that boys and girls learn differently. The research and
and his colleagues Kathy Stevens and Kelley King (2008), and Leonard Sax (2005) create
a strong foundation for this premise. Collectively, their research and writings conclude
that there are over 200 known physical differences in the male and female brain. The
male and female brains develop in different ways and at different rates. These
differences have profound implications on classroom instructional and managerial
strategies. As I synthesize the writings of the authors listed above, and combine that
information with my experiences and observations as an educational leader, I realize that
while a well-informed teacher may be able to employ effectively gender differentiation in
his or her classroom instruction and management, for many students, the best-case scenario is to separate boys from girls for maximum instructional outcomes.

As I considered Schubert’s article, “Perspectives on Four Curriculum Traditions” (1996), the theories of the Experientialist and the Critical Reconstructionist align most closely with the ideas expressed in the previous paragraph. The focuses of the Experientialist tradition that align with the ideals of single gender education include an emphasis on student interest and on the pursuit of one’s curiosity, a provision of problem and project based learning, the idea that how to learn is more important than what to learn, and the belief that topics of inquiry are potentially interdisciplinary topics. The focuses of the Critical Reconstructionist tradition that align with the ideals of single gender education include exposing injustices and inequities, engaging students in projects that right the wrongs in their lives, and empowering students to become activists. In addition, I would be remiss if I did not point out that the six great ideas, as described under the Intellectual Traditionalist section of “Perspectives on Four Curriculum Traditions,” play a definite role in single gender education as well. The six great ideas are truth, beauty, goodness, liberty, equality, and justice. These great ideas relate to values that are a strong focus in the Single Gender Programs in the school district.

The all-boys school at Middle School B has developed a school creed, recited daily in unison by the entire student body. The creed is as follows:

I will become a man of…

Responsibility, respect, honesty, integrity,

Confidence, perseverance, courtesy, good judgment

And good sportsmanship.
I will become this man!

Similarly, the all-girls school at Middle School A has developed a creed, recited daily in unison by the entire student body. The creed is as follows:

We are strong, confident young women.
We believe that we can achieve anything
Because we are dedicated, committed, and focused.
We are exceptional – not because we say it, but because we live it.
We each have a voice that empowers.
And we choose to use it to uplift ourselves and others.
We believe in nurturing our minds, bodies, and school spirit.
We will not fail in the face of adversity.
We are resilient. We are one.
We are the [all-girls school].

These creeds drive the character education at both schools. They are posted in every classroom. They are referenced when students break rules; for example, students are asked to identify the part of the creed violated when they are reprimanded for not adhering to school expectations.

The creeds also have served as mechanisms to unify the student bodies and to create brotherly or sisterly environments. Principals have implemented the use of school or class creeds to develop community and to enhance character education since the opening of Middle School A and Middle School B in August 2011. The use of the creeds as a method to improve discipline was based on the recommendation of researcher, David Chadwell (personal communication, October 2011).
Exploratory Questions

The single overarching question that drove this evaluation was: What impact do the single gender schools in the identified school district have on the lives of the students they serve, specifically in the areas of academic achievement, school attendance, discipline, and character development? I identified three primary exploratory research questions to drive my program evaluation research. These questions are:

1) In what ways are the all-boys school and the all-girls school having an impact on the students in the programs in the areas of student achievement, discipline, attendance, and character development? Sub-questions include:
   a. How are the Single Gender Programs impacting students in the area of character development, as indicated by the perceptions of parents, teachers, administrators, and students, themselves, via the ARP and related surveys?
   b. In what areas are the Single Gender Programs affecting student achievement, as measured by state assessment test scores?
   c. How are the Single Gender Programs affecting discipline, as measured by school records?
   d. How are the Single Gender Programs affecting student attendance, as measured by daily attendance data reported to the district?

2) How can qualitative data, along with quantitative data, be incorporated into district reports to show results in areas that are not measured on state assessment tests and other data collection mechanisms?
3) What do teacher leaders and administrators at Middle School A and Middle School B report as program improvements that are needed, specifically to improve student achievement as measured by state assessment test scores and state assigned school grades?

I answered the first question with data collected from principals at the end of the school year, along with state assessment test data and state assigned school grades. I answered question two by collaborating with the district’s Manager of Evaluation. The district developed survey instruments to be used with site administrators, teachers, parents and students in order to collect the qualitative data that were needed to provide a clearer picture of program effectiveness. The district gave me permission to use these survey data in my study. I answered question three by interviewing principals and teachers who serve on Middle School A’s and Middle School B’s leadership teams – lead teachers, academic coaches and core content subject area leaders – to gather information as to what program improvements they believe are needed in order to increase student achievement. For a copy of the interview protocol for school site administrators, see Appendix C. For a copy of the interview protocol for academic coaches and teacher leaders, see Appendix D.

**Conclusion**

As I conceptualized elements of my study throughout this section, I determined what I hoped to accomplish through this program evaluation project. I gained a clear understanding of what I needed to do and the steps I needed to take, in order to evaluate the single gender schools in the school district in my study. I gained a clear idea of what it was I wanted to learn as the result of my program evaluation endeavor and gained a
more comprehensive understanding about the importance of the potential knowledge I would gain. I defined my primary exploratory questions that would drive my program evaluation. I gave thought to precisely what I mean by character education as I consider its use in my collection of qualitative data. I identified and researched the curriculum theories that provide the foundation of the Single Gender Programs in the school district in my study. My identification and broader knowledge of the curriculum theories provided the terminology and conceptual framework that I needed to articulate precisely worded inquiries and formulations concerning the premise and value of Single Gender Programs in the school district.
SECTION TWO: REVIEW OF LITERATURE

Single gender education is not a new idea. Its resurgence in public schools across America is based upon new knowledge in the area of neuroscience (Gurian, 2001). A considerable amount of new research related to gender addresses the possibility of gender differences in learning styles between male and female students. As new data become available, teachers can use current information to develop and implement strategies that differentiate instruction within their classrooms. “Rather than limiting students because of their sex, teachers in all classrooms – whether coed or single gender – can implement lessons that better meet the needs of students” (Rex & Chadwell, 2009, p. 28). This kind of differentiated instruction has the potential to increase student achievement for boys and girls.

The requirements of the No Child Left Behind Act (NCLB) for states and school districts to disaggregate and report test data for males and females provides evidence of a continuing national interest in monitoring and addressing gender gaps in achievement (Chudowski & Chudowski, 2010). As part of that continuing national interest, the Center on Education Policy (CEP) reviewed the achievement levels of boys and girls on the state reading and mathematics tests used for NCLB accountability for all age groups in all 50 states. The CEP analyses found that in math, girls are doing about as well as boys, and where there are differences existing in some states, the differences are small and show no clear national pattern favoring boys or girls (Chudowski & Chudowski, 2010). On the other hand, in reading, boys are lagging behind girls in all states that have adequate data available. These gaps are significant as they are greater than 10 percentage points in some states (Chudowski & Chudowski, 2010).
Some of the significant findings of the CEP’s review of achievement levels disaggregated by gender included the fact that in reading, girls outperformed boys in 2008 at elementary, middle and high school levels. Additionally, the study showed that even though reading achievement gaps between boys and girls have narrowed in many cases based upon the percentage proficient indicator used for NCLB, boys have made less progress in catching up to girls based upon average test scores (Chudowski & Chudowski, 2010). Concerns about gender gaps continue, especially the lack of achievement of boys in reading. While researchers do not understand fully or agree on the sources of differences – nature versus nurture – in academic performance between boys and girls (Chudowski & Chudowski, 2010), statistical evidence demonstrates a gender achievement gap that is reason for concern in America. According to Gurian and Stevens (2005), 70% of students receiving Ds and Fs in schools across America are boys, and boys make up 80% of discipline problems in schools in America. Slocumb (2007) reported similarly that boys make up 70% of school suspensions and are responsible for 95% of juvenile offences.

Statistics reported by Mortenson (2006) show that more than three times as many boys than girls are diagnosed with emotional disturbances, and more than ten times the number of boys than girls between the ages of 18 and 21 are in correctional facilities. According to Whitmire (2010), almost twice as many boys are retained in school grade levels than girls are retained. In grade level 12, nearly twice as many girls are considered proficient or advanced writers compared to boys based on federal tests. In addition, in 12th grade, 29% of boys are proficient or advanced readers on federal tests compared to 41% of girls. Boys between the ages of 10 to 14 are twice as likely to commit suicide as
girls are, and young men between the ages of 20 to 24 are six times more likely than girls are to commit suicide (Whitmire, 2010).

The statistics for failure among boys are disheartening. The majority of high school dropouts are boys. Without adapting strategies and materials, it is likely that the dropout rate among boys will continue to rise (McBride, 2011).

Differentiating instruction to meet the needs of boys and girls may be part of the solution to the gender achievement gap (Kasik, 2008). According to Kasik (2008), Department of Education officials stated a favorable position regarding single gender education. Kasik (2008) said in her position paper, “Title IX and Single-sex Education,” written for the Independent Women’s Forum, “In the many materials surrounding the new regulations, the Department of Education referred to the fact that some students learn better in a single-sex class” (p. 8). This statement further supports the notion that differentiating instruction by gender may have a positive impact on student achievement.

There is significant research evidence to encourage optimism about the benefits of single gender education, as reported by Kasik (2008). Studies published by the Department of Education’s Policy and Program Studies Service (PPSS) in 2005 titled “Single-sex Versus Coeducational Schooling: A Systematic Review” showed positive effects for single gender schools on all-subjects’ achievement tests. PPSS conducted studies focused on long-term, quantifiable indicators of individual student adaptation and socio-emotional development in single gender schools. They found a correlation with a number of long-term positive outcomes including postsecondary success or participation in collegiate activities while maintaining full-time enrollment in college for a four-year period. They also found reduced unemployment among both males and females in single
gender educational settings, as well as reduced tendency to drop out of high school for both males and females, increased choice of nontraditional college majors for females, and increased political activism among females.

Kasik (2008) reported that several important areas of single gender education are currently under-researched. For example, the body of research currently available on single gender education predominantly investigates high school students and all-girls schools. More information is needed regarding the effects of single gender education in elementary and middle schools and all-boys programs. Meanwhile, King, Gurian, and Stevens (2010) of the Gurian Institute have worked for more than 20 years to close what they term *opportunity gaps* in more than 2,000 schools across the United States. Through this work they have found that when educators study “test scores, grades, discipline referrals, homework completion rates, special education placements, and student motivation, they consistently realize how gender-related issues intersect and interfere with their ability to achieve school improvement goals” (p. 39). The use of gender differentiated instructional strategies may help schools achieve such goals.

Educators have noticed that girls have difficulties that are demonstrated by lower learning gains and engagement in science and technology classes, relational aggression in school and in cyberspace, as well as problems with development of self-esteem during adolescence (King et al., 2010). Boys on the other hand have demonstrated their own series of difficulties, including: lower achievement scores than girls in most classes; significant problems in literacy; lag in the area of learning skills, in note taking, and listening; lower rates of homework completion; lower grades than girls in all classes, with the exception of some math and most science classes; lower motivation to learn and
lower perception that the curriculum is relevant to them than girls perceive that it is (King et al., 2010). When all of this information is taken together, it provokes consideration of what might happen when we separate boys and girls for academic purposes and tailor instructional strategies to better meet the needs of each gender group.

**Boys and Girls Learn Differently**

The prolific failure of boys in school may be illuminated by recent advancements in neuroscience, which have improved the ability to understand how the brain works and offer possible reasons why so many boys are falling behind (McBride, 2011). According to McBride (2011), recent neuroscience research has caused neuroscientists and educators to consider the implications on matching teaching methodologies to gender. While there are not differences in what boys and girls can learn, there are different ways to teach them.

One of the last areas of the brain to develop fully is the part that sits right behind the forehead, the prefrontal cortex (McBride, 2011). It reaches full development at about age 25 and is the part of the brain that organizes, analyzes, strategizes, and synthesizes. It is also the part of the brain that produces serotonin, one of the chemicals that makes people feel good, lessens impulsivity, and recognizes cause and effect. The prefrontal cortex develops much more slowly in boys than in girls (McBride, 2011). Consequently, it is important for teachers and parents to model higher-level thinking skills for boys. Teachers, particularly at the middle school level, need to assist boys with organization. They also need to understand that boys are going to act impulsively. Adults need to explain cause and effect to young men. Because danger and competition set off a charge
in the young male brain, boys often find themselves hurt or in trouble because they did not think about possible consequences before acting impulsively (McBride, 2011).

While boys tend to overestimate their abilities, girls tend to underestimate theirs. Thus, adults need to build up continuously the self-esteem of girls, and to give reality checks to boys (McBride, 2011). Movement mesmerizes boys. Add to this adolescent testosterone, and they feel compelled to move. However, at school, boys and girls are typically asked to sit still for long periods of time throughout the school day. It is important for teachers to add movement to learning activities (McBride, 2011).

Many of our teaching methods don’t accommodate the boy’s spatial mechanical brain in another essential way. Most of what students do in school involves language, from sitting and listening to lectures, working in groups, working on computers, research, and the myriad of reading and writing tasks they are asked to do each day. Because the female brain develops more quickly and has more area devoted to verbal-emotive functioning, and because most girls are more inclined to sit still and stay on task, they tend to be better at school language skills, also known as literacy. (McBride, 2011, “Altering Instruction,” para. 8)

It is important for educators to understand these structural differences between the male and female brain, as well as the differences in the developmental timeline of components of the brain between boys and girls. Then educators can understand the impact of these differences on student learning and instructional practices to better meet the learning needs of boys and girls.

One of the reasons boys lose interest in reading is because much of what they are required to read in school does not relate to their spatial-mechanical mind. Boys want
action, competition, and fictional violence in their reading materials. Books that will likely engage boys include graphic novels, adventure stories, war stories, how-things-work books, sports stories, science fiction, and topics that may be considered as gross such as slime, bacteria, and bugs (McBride, 2011).

Much research has been done on the biological differences between males and females, and this body of research continues to grow with scientific advancements, especially the use of brain scans during the last decade. Neurological research on the brain has demonstrated that male and female brain tissue is inherently different; male and female brains are organized differently, with functions more compartmentalized in males and more universally distributed in females; women and men use completely different areas of the brain for spatial tasks; and girls’ and boys’ brains process emotions differently (Kasik, 2008). This is just the beginning of over 200 structural differences between the male and female brain (Deak, 2012).

In addition to the structural differences between the male and female brain, important differences in developmental timetables have been identified including the fact that various regions of the brain develop in sequentially different ways between boys and girls (Kasik, 2008). “It’s not correct to say, ‘Boys develop along the same lines as girls, only slower.’ The truth is more nuanced,” according to Leonard Sax, M.D., Ph.D., in his book, Why Gender Matters (2005, p. 98). Sax (2005) also said that a study conducted by researchers at Virginia Tech concluded that areas of the brain related to language, spatial memory, motor coordination, and getting along with others develop at different rates and in different orders between the male and the female brain.
Gurian, Stevens, and King (2008) claim that the biology and chemistry of boys and girls during adolescence will sometimes take precedence over all other influences. Gender is a strong influence on learning, especially during adolescence. Understanding the differences between how boys and girls learn helps educators to meet the challenge of instruction and guidance among students.

**Structural Differences between the Male and Female Brain**

Gurian et al. (2008) explain the structural differences between the male and female brain based upon the technology of magnetic resonance imaging (MRI), positron emission tomography (PET), and single photon emission computed tomography (SPECT). They are able to describe these structural differences in terms of how they may affect students in the classroom. The female brain tends to have more connections between neurons in the cerebral cortex – where serious intellectual functions of the brain take place – and it tends to mature earlier in the female brain. This means that girls are physiologically able to process and respond to classroom information faster than boys are able to process and respond. They are able to make transitions faster, multitask, and access verbal resources, such as reading, writing, and complex speech, better than the typical boy is able to do in learning situations.

The cerebellum is larger in the male brain than in the female brain, and research has shown that it is involved in the coordination of muscles and in the coordination of thinking.

Adolescents might be described as going through a period of mental clumsiness… The cerebellum seems to have the ability to smooth out the complicated social life of adolescents and help them navigate their world smoothly and gracefully instead...
of constantly tripping over themselves. Physical activity is believed to influence
development of the cerebellum. (Gurian, et al., 2008, p. 5)
This means that activity is important for adolescents. Using movement in the classroom
during instruction will help both boys and girls whose brains are changing a lot during
this time of their lives (Gurian et al., 2008).

The corpus callosum is a bundle of nerves that connects the two hemispheres of
the brain, and this area increases in size during adolescence. This bundle of nerves tends
to be denser and larger in females resulting in increased communication between the left
and right hemispheres. This means that girls are generally better at multitasking,
including watching, listening, and taking notes, all at once. This difference may also
explain why girls can move emotions more quickly into thought and verbal process than
boys. Girls are able to talk about their feelings as they are experiencing those feelings,
while boys tend to need time to process before they can verbalize their feelings. This
physiological difference combined with hormonal changes in adolescence may account
for the tendency among girls to be dramatic and hypersensitive (Gurian et al., 2008).

The brainstem is the most primitive part of the brain, and it instigates the fight or
flight responses. During times of crisis, this part of the brain takes charge telling the body
how to respond. Boys have a greater amount of spinal fluid connecting their brain to their
body, and they have increased levels of testosterone during adolescence. These combined
factors result in very quick physical responses to stressors, such as hitting and other
nonverbal, physical responses (Gurian et al., 2008).

Boys’ brains tend to be poised for fight or flight and for a physical response when
they feel threatened or emotionally charged. Add to the equation the seven to ten
significant daily spikes of testosterone that boys experience, and you may see volatility that can become a problem for the boys and their classrooms. (Gurian et al., 2008, p. 6)

It is important for teachers to remember that a challenge from a teacher in front of a boy’s peers in a classroom may cause a boy to feel threatened; thus, it is important for adults to carefully evaluate when, where, and how to confront adolescent boys (Gurian et al., 2008).

The limbic system is a collection of structures located deep in the brain’s interior, and it is closely associated with emotional responses. These emotional responses attempt to move to the prefrontal cortex, which, as previously mentioned, is the part of the cerebral cortex that lies just behind the forehead. The prefrontal cortex acts as a mental traffic cop, and in a developing adolescent, this movement may be slow in helping control emotional responses (Gurian et al., 2008).

Within the limbic system are structures that are generally more active in girls than in boys resulting in a better reading of emotional cues and increased emotional memory by females. One of these structures is the hippocampus that is a key to converting information from the working memory to long-term memory. The hippocampus is larger in females and processes neural transmissions faster than in males. Another of these structures is the amygdala, which is connected to one end of the hippocampus. It plays an important role in processing emotions, especially negative emotions like fear and anger. The amygdala is typically larger in males, and this may explain the male tendency to be more aggressive than females. Taken as a whole, this means that boys often display increased aggressive or impulsive responses when feeling angry or threatened. Thus,
boys find themselves in disciplinary situations at school more often than girls do. On the other hand, girls tend to attach more emotional and sensory detail to events, thus they may hold grudges for a long time. Both boys and girls benefit from having adults help them to defuse emotional situations so that they can calm down and get back on track (Gurian et al., 2008).

Blood flow in the brain is up to 20% greater in the female brain than the male brain. When combined with the heightened neural connectivity between hemispheres of the female brain, girls are likely to be able to move information more quickly between areas of the brain. This means girls process information more quickly, especially verbal information. The down side is that girls may not always think before they speak because they sometimes process as they speak. Slowing down this process is difficult for adolescent girls. Meanwhile, boys tend to take a little longer to process verbal and emotional information, and this processing time can affect behavior, as well as reading and writing. Girls typically read more, write more, include more sensory and emotive details in their writing, and they typically get better grades than boys do. The use of more visual and pictorial prompts in the classroom can help boys write better papers (Gurian et al., 2008).

Processing Differences

Researchers have found that the male and female brain differs not only structurally but also in the way they process information. Knowing these differences can be important to teachers in developing strategies to implement curriculum to allow both boys and girls to perform at their best (Gurian et al., 2008). Some of these processing differences are described as follows.
Language processing areas for boys tend to be centralized in the left hemisphere, while in girls there are multiple language processing areas in both hemispheres. Thus, girls have more access to verbal resources than boys usually do, and girls tend to develop language earlier than boys do. On average, girls use twice as many words as boys in speaking, writing, and reading. Considering that literacy is the foundation of learning, this early difference in language processing between boys and girls often results in gender gaps that show up in elementary school and continue throughout middle and high school (Gurian et al., 2008).

Boys tend to have increased resources for spatial reasoning, gross motor skills, and spatial-mathematical reasoning due to the heightened levels of testosterone among boys. This means that boys tend to need more physical space while learning; they need to move more while learning; and, they are generally more interested in spatial manipulation tasks. Girls tend to be able to process more sensory data across the senses. They tend to see better, hear better, smell better, and take in more tactile information than boys are able to do while learning. This may be a contributing factor as to why girls include more sensory detail in their writing and conversation. Girls additionally are more likely to use greater variations of color in their artwork (Gurian et al., 2008).

**Chemical Differences**

As mentioned previously, the chemical differences between the male and female brain have been substantiated by research, but for the purposes of my study, they require further explanation in regards to their impact in learning situations (Gurian et al., 2008). For example, heightened levels of testosterone among boys means that healthy competition in the classroom most likely will motivate them. An interesting note is that
research has shown that boys tend to score better on tests at those times when testosterone levels are high. Because testosterone levels rise during competition, it stands to reason that competition may promote better test scores among boys (Gurian et al., 2008).

Estrogen is a group of hormones that is actually present in both girls and boys, but is usually present at significantly higher levels in girls. Estrogen levels may affect aggressive tendencies in females. Girls who are overweight may enter puberty as early as age eight or nine, accompanied by increased levels of estrogen and the potential for mood swings and aggressive behavior. This can affect behavior and school performance for girls (Gurian et al., 2008).

Serotonin is a neurotransmitter that affects mood and anxiety. It helps boys and girls relax and cool off during times of conflict. Serotonin levels among girls tend to be about 30% higher than that of boys, and this makes girls less likely to rely on a fight response when in conflict. When boys become angry, they have less access to serotonin to help them manage their anger (Gurian et al., 2008).

Dopamine is another neurotransmitter, and it stimulates motivation and pleasure circuits in the brain for boys and girls. When students do not have enough dopamine, they cannot control their movements well. When they have too much dopamine, they can become subject to uncontrollable or subconscious movements such as pencil tapping and leg jiggling. Dopamine also affects memory, attention, and problem-solving tasks. It is important for a balance to be established in the classroom of both independence and excitement with structure in order to help students get a dopamine rush from learning, but
in an environment that provides enough structure to manage enthusiasm (Gurian et al., 2008).

Oxytocin is a hormone that is related to social recognition and bonding. It is involved in the formation of trust between people. Girls have significantly higher levels of oxytocin in their systems than boys throughout life. This particular hormone is related to the development and maintenance of relationships, thus females are biologically driven in this area. At school, this means that girls are motivated to establish and maintain relationships with teachers and peers. They tend to try to please teachers, parents, and friends. Boys are less chemically driven to maintain such relationships, and they may not connect their behavior to their relationships with teachers and peers. For both boys and girls, it is important for teachers to recognize the importance of peer relationships and to incorporate group activities into the curriculum to help students meet their social needs, as well as meet the learning expectations of the teachers (Gurian et al., 2008).

**Unique Differences Among All Human Brains**

While there are identified differences between male and female brains, it is important to realize that one boy’s brain is also different from another boy’s brain, and this is true among girls, as well. Each child’s brain is unique. “Every individual’s brain architecture falls somewhere on the male-female brain spectrum, a continuum from ‘the most male’ to ‘the most female’ ” (Gurian et al., 2008, p. 14). Gurian has labeled those brains that fall in the middle of the spectrum as “bridge brains” (2008, p. 14). These are the brains that are structured in a way that overlaps the typical male and female brain. Bridge brains may enjoy activities that are typically effective with students of the opposite gender. It is important for teachers to watch for bridge brain boys and girls so
that they may identify the needs of all children, wherever they fall on the male-female brain spectrum (Gurian et al., 2008).

**Structure of Single Gender Programs and Strategies for Differentiation**

According to Rex and Chadwell (2009), successful implementation of single gender programs involves the consideration of many factors, the top three of which include training for teachers, communicating with parents, and analyzing data. Single gender education programs increased widely across South Carolina between 2004 and 2011 under the direction and support of the State Superintendent, Dr. Jim Rex. In 2007, Rex appointed David Chadwell to a newly created position of Coordinator of the South Carolina single gender initiative. Under Chadwell’s guidance, South Carolina offered what they called Top Ten Tips for creating single gender programs, based upon their experience (Chadwell, 2009). These tips include the following information.

- **Implement choice.** All public school single gender education must be a choice because it is a Federal regulation and it puts parents at ease.

- **Designate a point person.** Someone at the school should be the coordinator or contact person for the school’s single gender program. This might be the principal or a designee, such as a teacher in the program. The point person is someone who can answer questions about the program, communicate with parents and the media, serve as the liaison between the school and the district office, as well as other schools within the district who are offering or planning to offer single gender classes.

- **Know the Federal Regulations.** The school coordinator should be familiar with the federal regulations regarding single gender education in public schools.
Additionally, the school district’s attorney also should review all proposals for single gender programs within the district.

- Make gender a school-wide focus. Considering gender is not just a single gender issue. Teachers of coed classes should be involved in analyzing data through a gendered lens, examining academic performance, attendance, discipline, and social issues. This will help raise awareness among the entire school, teachers of single gender classes will not be isolated from other teachers, and this helps prevent a division between single gender classes and coed classes within the school.

- Support the teachers. All teachers in the school should be involved in some kind of training on gender via consultant presentations, book studies, or district provided professional development.

- Support is a yearlong process. Teachers of single gender classes need time to talk with one another about what is working and what isn’t working in their classes. They need to examine data from benchmark tests, student work, and anecdotal information. If possible, they need time to visit one another’s classes and other schools with single gender classes. Teachers need to know they are not alone in this process.

- Meet the needs of students; do not limit them. Don’t stereotype students. Use information about girls and boys to expand opportunities and build engagement. Understanding gender allows the teachers to further differentiate the classroom; it should not restrict options.
• Prioritize a sense of community. Take time to build community among students in single gender classes. Students need to be comfortable in the class, so they will take advantage of learning opportunities. Having all girls or all boys in a class may bring new challenges that should be addressed up front and routines should continue throughout the year. This is an important aspect of training educators of single gender classes.

• Differentiate procedures, not lessons. There are no lessons that are just for boys or just for girls. Teaching with gender in mind is all about differing procedures and strategies, not content. Good lessons are still good lessons, but they may be implemented in different ways within a classroom that has different routines. In the beginning, teachers of single gender classes should commit to five strategies or procedures that they will use within their classes. During the first quarter of the school year, they may meet to discuss, reflect, and perfect the use of these strategies. After that, they may add more strategies and procedures to their list.

• Communicate with your community. Do not assume that your community understands the reason you are starting a single gender program or what happens within single gender classes. Host parent nights, curriculum nights, and morning meetings to provide opportunities for question and answer sessions. Include highlights from single gender classes within school newsletters. Invite the media to events that involve students from single gender classes. It is important to build community support and awareness of any new
program, and this is especially important for single gender programs, as they are often misunderstood by community members.

The biggest mistake in implementing single gender education, “has been, and continues to be, only segregating students by gender without integrating instructional strategies that reflect gender difference. Simply segregating students by gender is not a teaching strategy; it is a structural change” (Chadwell, 2007, “More Than a Structural Change,” para 1). One strategy that Chadwell (2007) has found to be successful in a single gender middle school environment includes providing sixth graders a ten minute break following their first two classes. This provides students the opportunity to use the restroom, go outside, and get their books into the next classroom. During this time, boys often play a quick game of football, basketball, or wall ball. Girls tend to walk around, talk, and visit with friends or a teacher. Chadwell claims that providing down time from academic requirements is beneficial to both boys and girls. Such breaks provide boys the opportunity for gross motor movement, while girls have time to make connections with peers (2007).

Another strategy recommended by Chadwell (2007) is to provide a single gender advisory course. He believes that middle school students, more than other age groups, need support as they transition from elementary school, learn to overcome obstacles, and find appropriate ways to celebrate their successes. In his experience, Chadwell’s advisory course started in sixth grade and was called “Focus.” He said that organization and team building were the main objectives for the boys, while friendship and study habits were the emphasis for the girls (2007).
As we consider the life challenges faced by students in the middle grades, we realize how great those challenges are. As we learn more about the learning differences between boys and girls, we realize that these differences are great among adolescents in the middle grades. These differences can have academic, social, physical, and emotional implications for students. By separating students by gender, teachers are provided with the opportunity to focus on these differences to the benefit of the students (Chadwell, 2007).

Once their school has committed to a single gender learning environment, it is crucial that teachers embrace the intent to teach boys and girls differently. At the school where Chadwell (2007) taught when their single gender program first began, research on gender differences was used to plan and develop instructional strategies. Through trial and error, Chadwell identified several features of the single gender program at his school that he believes are essential to any single gender environment. For boys, he suggested the following:

Put boys to work after providing them with an abbreviated, bulleted set of instruction. Have them answer questions after ten minutes of work. Use problem-based learning. Start units or lessons with an essential question involving decisions or choices. (“More than a Structural Change,” para. 4)

This is an example of differentiating instruction based upon knowledge of differences between the brains of boys and girls and how those differences impact learning. In this instance, the instructional practice is designed to better meet the learning needs of boys.
In working with girls, it is important for teachers to accept the tendency of girls to please the teacher while appropriately channeling this desire to please during discussions, lessons, or units. He suggests the following strategies for girls:

Take time to explain instructional processes, answer their questions, consider their suggestions, and probe their hypotheses. Use project-based learning. Embed units and lessons with connections to the real world, and show relationships between the content/skills and the lives of real people. Monitor them as they work, prod their learning, and support their hesitation. (“More than a Structural Change,” para. 6)

This is an example of how educators can differentiate instructional practices to better meet the learning needs of girls.

Rex and Chadwell (2009) did not propose a required model or template for single gender education. Rather, they believed it to be important for individual schools or districts to determine whether single gender would benefit the students and to determine the best format for their particular education environment. Schools and districts also need to take responsibility for the successful implementation of their single gender programs.

King et al. (2010) believe that the use of the gender lens by educators is essential for education reform. It is a tool that enables schools to meet accountability goals in terms of higher test scores for all groups, and also reflects deep regard for all children. Examples of some of the strategies promoted by the Gurian Institute to close the opportunity gaps between boys and girls include adding movement, building on the visual, and incorporating student interests and choices.
Pairing learning with movement is especially important for many boys because it helps them stay out of the *neural rest* (boredom) state. However, because it increases brain activity, movement can also help girls learn. In addition to infusing movement into learning activities, teachers might also include regular brain breaks – frequent, brief opportunities to simply get up and move, such as doing jumping jacks, jogging in place, stretching, doing the wave from one side of the room to the other, or dancing in place with music. (King et al., 2010, pp. 40-41)

These practices are based upon understanding neuroscience relative to the brain’s structure, processes, and chemicals for both boys and girls with the intention of improving learning for all students.

In addition to the importance of movement to help both boys and girls learn, other strategies for implementation in single gender educational settings include making learning visual in order to support spatial learners, particularly boys, and empowering students by giving them choice and control in the classroom. It also includes increasing opportunities for social interaction, which is critically important for girls and is important for helping boys learn to make connections. Finally, it involves finding ways to make learning relevant, which stimulates girls and is absolutely essential for boys, in terms of engagement; promoting teacher-child relationships to enhance learning and providing mentors for students; and building character traits that will enable both boys and girls to develop a strong foundation for learning and life (Gurian et al., 2008).
The Merits of Single Gender Education

Meeting the individual needs of each student is the key to learning success. Differentiated Instruction (DI) is a common element of classroom practice and professional development, and the use of gender differences to enhance teaching is an extension of DI (Chadwell, 2007). In his presentation entitled “Launching a Single Gender Program” at the National Association for Single Sex Public Education (NASSPE) Conference in October 2008, Chadwell asked the question as to whether single gender education is morally right. He answered his own question by saying, “Yes. We are charged with educating the individual child and meeting individual needs. That is what differentiated instruction is all about. Teaching through gender differences is a form of differentiated instruction.” By taking a common practice among educators, differentiated instruction, and adding another dimension by further differentiating instruction based upon gender is an important step toward better meeting the educational needs of each individual child.

Students in middle school face enormous changes in their individual lives. Teachers in a single gender environment can help students manage this transition. They can also help students maintain the desire to learn, and they can support academic achievement (Chadwell, 2007).

When Chadwell taught single gender classes, they were part of a full-day single gender program at Dent Middle School in Columbia, South Carolina. He found that in the first year of the single gender program, the percentage of students earning proficient or advanced scores on the Palmetto Achievement Challenge Test increased 14% in English language arts, 17% in mathematics, 24% in science, and 19% in social studies. This level
of achievement surpassed the district average and continued to increase the following school year (2007).

In his role as Coordinator of Single Gender Programs for the South Carolina Department of Education, Chadwell gained a statewide perspective of the impacts of single gender education. Survey responses from students in a variety of single gender classes across the state indicated an increased participation within class as well as an increased willingness to try new learning activities. Chadwell also reported success in improved discipline, improved grades, improved test scores and parent satisfaction in South Carolina schools implementing single gender classes (Rex and Chadwell, 2009).

At Wamsley Elementary School in Rifle, Colorado, Principal Desha Bierbaum decided to focus school improvement in the area of gender equality. Her staff recognized and acknowledged that they had a better understanding of how to teach girls than boys. The school was on academic watch for not making adequate yearly progress (AYP) in 2007, and Bierbaum and her staff began extensive professional development that focused on the different learning needs of boys and girls. The result was that in one year student performance jumped markedly, and the school was taken off the AYP watch list (King et al., 2010).

Positive effects on self-esteem in single gender educational settings have been documented. A study in Northern Ireland suggests that single gender education has an impact on how girls evaluate themselves. Oftentimes in a coeducational environment, girls’ self-esteem is tied to how they think they look. However, in a single gender educational environment, girls’ self-esteem is related to other variables that include academic performance, social experience, and family income (Sax, 2005). This study also
suggests, according to Kasik (2008), that “single-sex schools may be useful in helping some girls move beyond a focus solely on their physical appearance” (p. 8). In an all-girls setting, educators have an opportunity to help girls find other methods of developing self-esteem.

Another effect of a single gender educational setting on girls is that they are more likely to participate in physical education classes, as well as computer science and physics courses. Similarly, boys in a single gender educational setting are more likely to study art, music, and literature than they do in coeducational settings. A study in London demonstrated that students in single gender schools were more likely to take gender-atypical classes. The same study indicated that girls who went to single gender schools earned higher wages in later life than girls who went to coeducational schools (Sax, 2005).

Laster (2004) said that she believes single gender education must be considered because it can provide an option that will meet students’ learning needs. She reported on a study conducted in the United States at the middle school level with a class of 33 girls, a class of 33 boys, and a coed class of 33 students, all in sixth grade. Three teachers taught students in all three classes – one in math and social studies, one in science and computer, and one in English and reading. The math and social studies teacher reported that achievement and test scores improved in the single gender classes. Thus, the teachers recommended single gender educational settings. The science and computer teacher reported that the all-girls class was more open to ask questions, determined to make the highest grade on all tests, more motivated, and loved the challenge of science and computer.
Data on discipline problems among the students in the study were in the form of narrative reports from the teachers involved who said there were fewer discipline problems in the single gender classes than in the coed classes. Test data demonstrated no difference among the single gender girls class in reading as compared to the coed class; however, the single gender boys’ class outperformed the coed class. In language arts, the single gender girls’ class performed slightly higher than the coed class while the single gender boys held a fairly large margin above the coed class. In math, there was little difference between the single gender girls and the coed girls, while the coed boys outperformed the single gender boys (Laster, 2004).

The principal of the middle school reviewed test scores among all three groups and noted high scores in both single gender classes. He felt the findings indicated that girls perform better in single gender math and science classes than in coed classes, and that boys perform better in language arts and reading in single gender classes than in coed classes. Laster concluded that this study provided implications for schools to offer parents the option of single gender classes for their children. She admitted that the research findings were not significant statistically, but were compelling based on the test results. Laster also concluded that “efforts should be made to improve educational outcomes for children by providing parents an array of educational options to meet their children’s needs, while also ensuring appropriate safeguards against discrimination” (2004, p. 62). Single gender classes are an educational option, and when offered, they can provide parents a choice that may address their children’s needs in ways they are not addressed in co-gender settings.
Warrington and Younger (2003) reported on the experiences of 31 different schools in the United Kingdom that implemented single gender classes in coed schools. They ultimately concluded that single gender classes can provide a positive and successful experience for girls and boys when a strong commitment from staff is evident, and there is a willingness to evaluate and to diffuse good practice. They also said success was dependent upon gender reform strategies being in place to challenge any practices and behaviors that may reinforce stereotypical gender roles.

This study, and others, demonstrates a shift in purpose among single gender programs from focusing on the achievement of girls and equalizing the educational opportunities of girls to a focus on finding solutions to the lack of achievement among boys. In this study, the main reason for single gender teaching expressed among the 31 schools was to raise achievement levels. For many, it was the perceived underachievement of boys that initiated the introduction of single gender classes. For several, it was the gender gap in English and modern foreign languages that caused concern (Warrington & Younger, 2003).

A wide variety of variables compromised the outcomes of the single gender classes among the 31 schools in this study in the United Kingdom. Among those variables were length of implementation of the single gender classes, levels of teacher preparation for single gender teaching (seven schools reported no teacher preparation for single gender teaching), methods of assigning and informing students and parents of the placement in single gender classes, along with the ethnic diversity of the students and the age differences among the students. With so many variables at play, it was difficult to draw clear conclusions about the effects of single gender classes on test results. The same
was true of improved behavior. However, one of the most positive effects reported on single gender classes was increased levels of student participation and greater levels of confidence among students. Warrington and Younger (2003) concluded that the study of the 31 schools in the United Kingdom reinforced their previous findings that single gender classes may be one strongly contributing factor to high achievement levels in a school. They pointed out that single gender classes address concerns of student achievement in a broadened sense that focuses not only on academic success, but also on developing students’ self-esteem as lifelong learners.

**Legal Requirements**

The separation of boys and girls in public schools requires close attention to federal and state laws in order to ensure equal opportunities for all students. In 2006, the *Federal Register* published revisions to the Amendment to Title IX, Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance of 1972, which prohibited sex discrimination in federally assisted education programs and activities. The 2006 amendment declared that single gender classes are to be permissible in public schools, and single gender public schools are to be permissible (U.S. Department of Education, 2006). The specific and pertinent details of the amendment are as follows:

Educational Objective: ‘The purpose of the class or extracurricular activity is achievement of an important governmental or educational objective, and the single-sex nature of the class or extracurricular activity is substantially related to achievement of that objective.’ (*Federal Register*, 2006, p. 62530)
Completely Voluntary: ‘Participation in single-sex classes and extracurricular activities must be completely voluntary…’ *(Federal Register, 2006, p. 62531).*

These details of this amendment are important because they constitute federal regulations that must be followed by public schools that choose to offer single gender classes.

McLane, Colby, Yudof, and Bradshaw (2006) in their report, “Secretary Spellings Announces More Choices in Single Sex Education Amended Regulations Give Communities More Flexibility to Offer Single Sex Schools and Classes,” explained the position of then U.S. Secretary of Education Margaret Spellings on the new amendment to Title IX. They quoted Secretary Spellings as having said,

Research shows that some students may learn better in single-sex environments. The Department of Education is committed to giving communities more choices in how they go about offering varied learning environments to their students. These final regulations permit communities to establish single sex schools and classes as another means of meeting the needs of students. They also establish that enrollment in a single sex class should be a completely voluntary option for students and their families and they uphold the prohibitions against discrimination of Title IX. Every child should receive a high quality education in America and every school and district deserves the tools to provide it. (para. 3)

These comments by Secretary Spellings are significant in that they demonstrate support by the federal government for school districts to offer parents the option of single gender learning environments to meet the learning needs of their children.

McLane et al. (2006) explained how the new amendment could change the way of work in elementary and secondary schools that wanted to implement single-sex classes.
Prior to the amendment, the Title IX regulations prohibited single gender classes and extracurricular activities in both public and private coeducational schools with very few exceptions such as physical education classes or sex education classes. Under the new regulations, public and private coeducational elementary and secondary schools are permitted to offer single gender classes and activities. Single gender classes must be related substantially to the achievement of an important objective such as improving academic achievement, providing diverse educational opportunities or meeting specific needs of students. Additionally, single gender classes must treat male and female students even-handedly. The new regulations also require that public school districts and private schools evaluate their single gender classes at least every two years to ensure their compliance with the requirements of the amendment.

Sax (2013), the founder and executive director of NASSPE, posted a summary of the new regulations governing single gender education in public schools on the NASSPE website. His explanation said that coeducational public schools (elementary and secondary schools) are permitted to offer single gender classrooms, provided that the schools adhere to three rules:

1) Provide a rationale for offering a single gender class in that subject. A variety of rationales are acceptable, e.g. if very few girls have taken computer science in the past, the school could offer a girls-only computer science class;

2) Provide a coeducation class in the same subject at a geographically accessible location. That location may be at the same school, but the school or school district may also elect to offer the coeducational alternative at a different school, which is
geographically accessible. The term ‘geographically accessible’ is not explicitly defined in the regulations;

3) Conduct a review every two years to determine whether single-sex classes are still necessary to remedy whatever inequity prompted the school to offer the single sex class in the first place. (‘Policy,’ para. 2)

This concise summary, provided by Sax (2013), of the 2006 amendment to Title IX related to single gender education in public schools is important to educators because it reiterates clearly what public schools must do to offer single gender classes within the confines of the federal regulations.

Under the new regulations, there are fewer requirements for single gender schools than for single gender classes. Sax (2013) addressed the new amendment’s impact on single gender schools. He said that single gender schools are specifically exempt from two of the three requirements above. They do not have to provide a rationale as described in the first regulation. They also do not have to conduct periodic reviews to determine whether single gender education continues to be necessary. However, they do have to offer substantially equal courses, services, and facilities at other schools within the same school district, but those other schools can be single gender or coed.

In other words, a school district may offer a single sex high school for girls without having to offer a single sex high school for boys. A school district can offer an all boys elementary school without having to offer an all girls elementary school. (‘Policy,’ para. 3)

Here, Sax (2013) clearly states the meaning of the 2006 amendment to Title IX relative to single gender schools. This statement is helpful to educators to understand the difference
in the federal regulations for offering single gender classes and the federal regulations for offering single gender schools.

Sax (2013) provided additional legal information on the NASSPE website regarding the outcomes of two federal court rulings since the 2006 Amendment to Title IX. One ruling was issued in June 2011 regarding the case of Breckinridge, and the other was issued in August 2012 regarding the case of Wood County, West Virginia. He said,

The Breckinridge ruling affirms the constitutionality of the 2006 regulations. The Wood County ruling, while also affirming the constitutionality of the 2006 regulations, interprets ‘voluntary’ to mean ‘with written consent.’ The Wood County ruling states that students may be enrolled in single gender classrooms in coed public schools only if the parent(s) or guardian(s) have signed a consent form directing that the child be enrolled in a single gender classroom. (‘Policy,’ para. 7)

This additional information provided by Sax (2013) on the NASSPE website is important to consider. The federal court ruling of the case in Wood County, West Virginia was a more conservative interpretation of the 2006 amendment to Title IX than some educators concluded upon reading initially the amendment. By posting this ruling Sax provides information that clarifies that when parents or guardians choose to enroll children in single gender classrooms they must provide written consent.

Sax (2013) went on to explain that the Wood County ruling is technically binding only in the West Virginia circuit, but that NASSPE recommends that all schools in the United States offering single gender classes should bring their program into compliance with the Wood County ruling. NASSPE’s position is that schools should require parents
to opt-in to single gender classes if they want their child enrolled accordingly, rather than to use an opt-out procedure for those parents who do not desire a single gender class for their child.

Sax (2013) further explained the new regulation on the NASSPE website by saying that an ironic and possibly unintended consequence of the amendment is that single gender public schools in the United States now have a simpler legal status, and are less vulnerable to legal challenge, than single gender classrooms within coed schools. He went on to say that, many administrators inaccurately assume that it is less problematic for a school district to offer single gender classrooms in a coed school than to offer a single gender school. However, that is incorrect, as there is no rationale required and no comparable alternative must be offered to students of the other gender in a single gender school.

Chadwell (2010) summarized the federal regulations for K-12 single gender classes this way:

The program must have an ‘important educational objective.’ The program must be ‘completely voluntary.’ The program must be ‘substantially equal’ for boys and girls within single gender and as compared between single gender and coed classes. The program can be for boys only or for girls only, or for boys and girls. The program must have a coed option available. The program must be reviewed every two years to determine if it is nondiscriminatory and addresses their educational rationale. (p. 20)

Chadwell’s summary provides further clarification of the federal regulations as stated in the 2006 amendment to Title IX.
Rex and Chadwell (2009, p. 29) hold the position that “Following these guidelines ensures that single gender education is not merely a throwback to the days of sex discrimination and limited educational opportunities.” This position attempts to clarify that the federal regulations protect students from sex discrimination. When public school districts offer schools and classes that separate boys and girls for academic purposes, then focused attention has to be paid to protecting the rights of the students.

In May of 2008, Dr. Frances Haithcock, Chancellor of Education for the state of the district in my study at the time, presented a “2008 Legislative Update Division of Public Schools.” In the presentation, there was a brief mention of single gender education listed as SB 242 – Single Gender Education. Haithcock’s comments were that school boards were allowed to establish and maintain a single gender non-vocational class, extracurricular activity, and school. She also stated that options for a coeducational group must be offered and participation must be voluntary.

In the simplest of summaries, Rex and Chadwell (2009) said,

Programs organized by gender must be based on the attainment of an educational objective, be completely voluntary, be implemented in an even-handed manner, be substantially equal for boys and girls, and be reviewed every two years. In addition, a coed option in identical classes must be available. (p. 29)

This statement by Rex and Chadwell (2009) provided educators another summary of the 2006 amendment to Title IX, as related to single gender educational settings in public schools. I believe educators who read several summaries of the federal regulations can gain a fuller understanding of the nuanced expectations of them. It is critical for educators to understand and follow these regulations when implementing single gender
schools and classes in order to protect the rights of students and continue to offer public education in single gender environments.

Definition of Terms

In order to provide clarity of meaning, I have defined several key terms used throughout this program evaluation. *Single-sex class* is a class of all girls or all boys; in the context of this paper, the term single gender class is used synonymously and without hyphenation except in the case of direct quotations. *Single-sex school* is a school of all girls or all boys, or where all the students in the school are separated into groups of all girls and all boys; in the context of this paper, the term single gender school is used synonymously and without hyphenation except in the case of direct quotations. *Single-sex education* is an environment of education for all girls or all boys, or where all the students involved are separated into groups of all girls and all boys; in the context of this paper, the term single gender education is used synonymously and without hyphenation except in the case of direct quotations. *Single-gender class* is a class of all girls or all boys; in the context of this paper, the term single gender class is used without hyphenation except in the case of direct quotations. *Single-gender school* is a school of all girls or all boys, or where all the students in the school are separated into groups of all girls and all boys; in the context of this paper, the term single gender school is used without hyphenation except in the case of direct quotations. *Single-gender education* is an environment of education for all girls or all boys, or where all the students involved are separated into groups of all girls and all boys; in the context of this paper, the term single gender education is used without hyphenation except in the case of direct quotations.
Conclusion

When considering the body of literature on the topic of single gender education, the quantitative data seem to be inconclusive as to whether separating boys and girls for the purpose of academic achievement results in positive gains as compared to students in coeducational settings. Some of the data indicate that students in single gender settings do, in fact, make greater academic gains than their coeducational counterparts (Chadwell, 2007; King et al., 2010; Rex & Chadwell, 2009; Warrington & Younger, 2003). Other data indicate little difference in academic achievement (Laster, 2004). However, there are enough data among the literature that show greater gains among students in single gender settings to warrant the continuation of single gender classes and schools (Laster, 2004). Additionally, statistics that demonstrate a continued gender achievement gap in America support the continued option of a single gender education for those families who believe it suits their children. Further study and documentation of student gains in single gender educational settings is warranted.

Qualitative data seem to indicate that students reap other benefits in single gender settings including greater engagement, enthusiasm, enjoyment of learning and stronger character development than in co-gender settings (Kasik, 2008; Sax, 2005). Such benefits also are evidenced among the students in single gender classes and schools in the school district in my study. These benefits are arguably as important as academic gains when considering the value of single gender education among the variety of educational options available to students in America. Thus, single gender education should continue to be an option available to parents when making school choices for their children.
SECTION THREE: METHODOLOGY

Research Design Overview

I focused my program evaluation on one all-boys middle school and one all-girls middle school that are part of the single gender programs across a large public school district that also implements single gender classes at eight coeducational elementary schools and one coeducational high school. I used a combination of three types of evaluation including a compliance focus and a summative evaluation combined with a theory-driven evaluation (Patton, 2008). While each of these three types of evaluation serves a very different purpose, and are completely different in nature, they were all needed in order to evaluate the strengths and weaknesses of the single gender programs at the all-boys school and the all-girls school. These three types of evaluation, when used together, will guide program development and growth in a logical, informed manner.

I implemented a compliance focus (Patton, 2008) while evaluating the single gender schools because of the legal requirements of public single gender schools. This is an essential type of evaluation in order to be sure that each principal is implementing the single gender school with a mindset of equity, and that each is following the specific requirements of the amendment to Title IX. These mandates allow school districts to operate single gender schools. Examples of the types of documents the district in my study requires of the principals of the single gender schools include their master schedules. They provide a district compliance information source to ensure that equitable opportunities are offered to boys and girls through courses offered. The district also monitors the student teacher ratio at each school to ensure equity. The principals submit
copies of in-service transcripts for each teacher and instructional staff member in order to demonstrate the instructors’ training hours related to single gender education.

A summative evaluation, based on the model provided by Patton (2008), provides answers to questions about whether the single gender school-wide programs should be continued, as well as a demonstration of the overall merit and worth of the programs. While I think that in most educational contexts, the developmental evaluation is more appropriate and useful, in the case of single gender education, the summative evaluation is vital. Because of the surrounding issues of equity, and the controversies related to separating boys and girls in public school situations, it is important to justify the program by demonstrating the program’s merit. This can be done by comparing student achievement at the all-boys school and the all-girls school with other schools across the district and the state. Demonstration of merit is needed in order to continue supporting the growth of these single gender schools.

A theory-driven evaluation based upon theoretical assumptions and program models (Patton, 2008) is another valuable approach to analyzing and evaluating the single gender schools. Single gender education in the school district is based upon the scientific evidence that there are physiological differences between the male and female brain, and the notion that these differences have implications on how boys and girls learn. It is important to tie the theory-driven evaluation to the summative evaluation to determine the value of the single gender schools based upon academic achievement when boys and girls are separated for academic purposes, along with character development and other aspects of the affective domain.
The specific tools I used to evaluate the single gender schools were a quantitative data collection instrument that the district prepared for each principal to use (for a copy see Appendix E), along with a survey of teachers and other instructional personnel who teach or work at the single gender schools (for a copy see Appendix F), a survey of the parents or guardians of the students (for a copy see Appendix G), and a survey of students at each single gender school (for a copy see Appendix H). My overarching question that drove this evaluation was: What impact do the single gender schools in the identified school district have on the lives of the students they serve, specifically in the areas of academic achievement, school attendance, discipline, and character development? Gathering a combination of quantitative and qualitative data provided a more complete picture of the overall impact of the program, as opposed to quantitative data only or qualitative data only.

**Participants**

There were four stakeholder groups involved in this program evaluation. The principals of each school are required to complete an Annual Review of Program (ARP) each summer based upon student performance during the school year that has just concluded. The ARP provides principals with an opportunity for valuable input into program performance and program development. The other stakeholder groups involved in the program evaluation included approximately 650 students enrolled in the single gender schools, their parents or guardians (approximately 650-1,300), and approximately 80 classroom teachers and instructional staff. All these participants were chosen because they all had a vested interest in the quality of the program.
Middle School A is an all-girls college preparatory school. It is one of 33 magnet schools/programs in the school district, and it requires the girls to wear uniforms. It is also a Title I school with 74.2% of enrolled students eligible for Free or Reduced price Lunch (FRL) in 2012-2013. It is an ethnically diverse school where 48% of the students are Black, 22.2% are White, 21.9% are Hispanic, 5.7% are Multiracial, 1.2% are Asian or Pacific Islander, and 0.9% are American Indian or Alaskan Native.

Middle School B is an all-boys college preparatory school. Like Middle School A, it is one of 33 magnet schools/programs in the school district, and it requires the boys to wear uniforms. It is a Title I school with 69% of its students eligible for FRL in 2012-2013. It is ethnically diverse with 45% of its students Black, 25.5% White, 20.8% Hispanic, 6.2% Multiracial, 1.9% Asian or Pacific Islander, and 0.6% American Indian or Alaskan Native in 2012-2013.

Data Gathering Techniques

The ARP completed by each principal or designee provided a variety of valuable data. The quantitative data sets included average attendance rates, numbers of disciplinary incidents, academic achievement as demonstrated on the state assessment test or the Scholastic Achievement Test (SAT) 10, End of Course Examinations, and formative assessments that are administered three times per year to show individual academic growth within the school year. Additionally, the ARP asked principals to provide qualitative data by writing a brief summary analysis of the program’s merit during the school year that just concluded offering their opinion of its success and value. The ARP also asked principals to include narrative evidence of program success.
The district requested the ARP from principals during the annual spring compliance meeting of single gender principals. Following the meeting, the district provided each principal with an electronic version of the data collection instrument and a finite due date. This was the second year the district implemented the ARP, and the district modified it extensively for school year 2012-2013 in an effort to collect more complete and comparative data.

The district developed surveys that are specific to each of the other three stakeholder groups – teachers/instructional personnel, parents/guardians, and students (for a copy of the surveys, see Appendices F, G, and H). These surveys consist of 7-8 Likert Scale questions each, as well as 2-3 open-ended questions each. My goal for the use of the surveys was to collect information that cannot be gleaned from the principals’ ARP; for example, the students’ sense of engagement and accomplishment, the parents’/guardians’ sense of whether their children are developing positive character traits, and the teachers’ sense of whether their students are becoming responsible citizens.

The teacher/instructional personnel surveys were distributed and collected by each principal at the school site. This involved about 60 teachers, and I included all teacher/instructional personnel surveys that were completed in the program evaluation. The student surveys were distributed and collected by teachers at the direction of the district. I included all student surveys that were completed in the program evaluation, including male and female students from both schools in my study. The parent/guardian surveys were distributed by each principal via the method they individually identified as the most effective among their community of parents; for example, via email, sent home in student backpacks, or distributed in person during a parent event. The principal
collected the parent/guardian surveys accordingly. I included all surveys completed by parents/guardians in this program evaluation. Ultimately, each principal collected and submitted to me the surveys from all three stakeholder groups.

**Data Analysis Techniques**

I compared the quantitative data from the ARP in the following way. I compared the data for students in all-girls classes in middle school to students in all-boys classes in each comparable grade or core subject, as appropriate, and then to district-wide performance in each grade or core subject. I compared the attendance and discipline data similarly. I quantified the Likert scale questions on each survey set to demonstrate trends among respondents. I evaluated the open-ended questions and categorized the open-ended questions on each survey set to determine themes that demonstrate student gains that cannot be measured on the quantitative evaluations. To do this, I identified the main idea or key word from each survey response. Then I determined whether each response was repeated within a stakeholder group at each school, and if so, how many times it was repeated. Responses with the greatest number of repetitions established themes. If themes were repeated in other stakeholder groups, then I considered that to be a pattern of response. I gleaned anecdotal data from the open-ended questions, as well.

**Ethical Considerations**

The foremost ethical consideration for this program evaluation is to protect the anonymity of participants, as well as each school involved in this program evaluation. I did this by not identifying any of the participants by name, using pseudonyms for the schools, referring to the school district as the district in my study rather than by name, and not revealing the name of the state in which the school district resides. Another
important ethical consideration is the accurate reporting of results, especially regarding analysis of qualitative data. Additionally, I must be conscientious about remaining objective in my evaluation of the program. The data the district collected via the ARP and the surveys the principals collected belong to the school district and were extant data for which I obtained permission from the district to use for this program evaluation. I provided each participant involved in my interviews for this program evaluation an informed consent form (see Appendices A and B) that provides transparency of the purpose and usage of the data collected. My justification of the participants chosen is that I provided all students, parents and guardians, and teachers and instructional personnel involved in single gender programs at the all-boys school and the all-girls school during 2012-2013 the opportunity to participate in the surveys, and I included both principals who implemented single gender schools in 2012-2013 in data collection via the ARP.

Conclusion

It was with great interest that I collected the quantitative and qualitative data in this program evaluation. I was anxious to analyze the various sets of data to gain a clear perspective on the merit of the programs at the all-boys school and the all-girls school. This comprehensive data analysis certainly will drive decisions regarding expansion of the single gender program across the district in my study.
SECTION FOUR: FINDINGS & INTERPRETATION

Findings

For this program evaluation, I studied single gender programs in two middle schools. I used pseudonyms in place of the actual school names in order to maintain school site anonymity. Middle School A is a magnet all-girls college preparatory school, grades 6-8. Middle School B is a magnet all-boys college preparatory school, grades 6-8.

I used the Annual Review of Program (ARP) report that is submitted to the district Office of Single Gender Programs by each school implementing single gender classes for collecting data related to attendance, discipline, and academic achievement. I used district surveys of students, teachers, and parents for collecting data that is aligned with the affective domain. I also interviewed school administrators and teacher leaders to capture data that is not represented in achievement tests and other district data collection mechanisms.

Annual Review of Program

The Annual Review of Program (ARP) is a data collection document that the district in my study uses for each school year to ensure legal compliance in each of the schools implementing single gender programs across the district. The report includes the name of the person(s) completing the review, which may be the principal, another administrator such as the assistant principal or administrative resource teacher, or a teacher leader such as an academic coach or a lead teacher. The report also includes the site-specific rationale for the single gender program which meets the legal requirement of having a governmental objective for the program. For the single gender schools, the
federal regulations do not required a governmental objective, and the district’s objective for these schools is to increase student achievement and improve discipline.

The report also includes a program design table that is modeled after that collected annually by the state’s department of education in its Annual Equity Update, and it includes the grades and courses in which single gender classes are offered, along with the number of classes and number of students in those classes for all-boys, all-girls, and co-gender. This table demonstrates compliance with the legal requirement that an equal co-gender option is available for students. The report includes data charts for attendance, discipline, and academic achievement demonstrated on the state assessment test, SAT 10, Formative Tests, and End of Course Exams. Relative to the data charts for academic achievement, each school completes only the data charts that apply to the students at the grade levels implementing single gender classes. Finally, the document contains a Summary Analysis section for schools to analyze and summarize the data included in the report, as well as an Anecdotal Data section for schools to include any narrative information they deem pertinent to providing a holistic view of their single gender program.

Middle School A

The first item of quantitative data included in the ARP was the Average Daily Attendance Rate. For Middle School A, the school wide average daily attendance rate was 95.34%. This compares to the district average daily attendance rate of 94.09% overall and 93.9% among all middle schools. These data elements are remarkable because the school surpassed the district average, as well as the average daily attendance
rate among all middle schools in the district. It also surpassed the superintendent’s attendance goal for each school in the district of 95%.

The second set of quantitative data relates to discipline. Middle School A had a total of 83 incidents of OSS which is 5.26% less than the average rate of OSS among all middle schools across the district. Teachers at the school wrote 340 referrals during the 2012-2013 school year. Of those referrals, 100 were for girls in grade 6, 190 were for girls in grade 7, and 50 were for girls in grade 8.

The district identifies disciplinary referrals in the categories of alcohol/drugs, bus violations, personal conduct, criminal activity, minor violations, sexual offense, attendance issues, fighting, and other. At Middle School A, 0.3% of the referrals (one referral) were related to alcohol/drugs as compared to 0.6% of referrals district-wide. Bus violations accounted for 7.4% of the referrals at Middle School A while they were 5.8% of the referrals across the district. Personal conduct was cited as the reason for 62.4% of the referrals at Middle School as compared to 60.6% of the referrals across the district. Criminal activity at Middle School A accounted for 0.3% of referrals (one referral) while that category similarly accounted for 0.3% of referrals across the district. Minor violations were the reasons for 23.5% of the referrals at the school compared to 4.9% of the referrals district-wide. The school reported no referrals for sexual offenses while the district reported 62 sexual offenses for a total of 0.0% (rounded percentage).

The all-girls school reported 3.5% of all referrals related to attendance issues and the district reported 25.3% of its referrals for this reason. Middle School A identified 1.9% of its referrals for fighting, and the district reported the same percentage of 1.9% of all referrals for fighting. Middle School A did not report any referrals in the category of
other while the district reported 0.6% of all referrals as other. Altogether, the referrals at Middle School A made up 0.002% of the referrals across the district. These data show that Middle School A had a lower percentage of referrals than the district in the categories of alcohol/drugs and attendance issues. Additionally, Middle School A had no referrals in the categories of sexual offense and other which is fewer than those across the district. The school’s rate of referrals for criminal activity was the same as the district’s rate; however, there was only one referral for criminal activity at the school while there were 311 across the district.

Categories in which the all-girls school had a higher rate of referrals than the district were in bus violations, personal conduct, minor violations, and fighting. It is important to note that these categories all represent lesser offenses than the other categories with the exception of fighting. In that category, Middle School A had nine referrals, but because of the relatively small size of the student body, those nine referrals equaled a percentage higher than that of the district even though the district had 2,405 referrals for fighting.

The fact that the categories in which the school had higher rates of referrals that represent lesser offenses demonstrates that discipline at the school is relatively better than the district as a whole. In fact, a combined total of 85.9% of all the referrals at Middle School A were for personal conduct and minor violations. Such offenses can include chewing gum, talking out of turn, using inappropriate language, demonstrating perceived disrespect toward others, and other such personal behaviors. All referrals except those in the categories of alcohol/drugs, criminal activity, and fighting are subjectively based
upon the teacher’s discretion, and that fact must be taken into consideration when evaluating student discipline.

In the three categories of major offenses just mentioned, teachers are required to write referrals. At Middle School A, there were a total of 11 referrals written for these major offenses. That is among the lowest number of referrals for major offenses among middle and high schools in the district. All these discipline data taken together indicate that the school is meeting the district’s objective for its single gender program in that it decreases incidents of student discipline.

In School Suspension (ISS) is another set of data related to student discipline that the district collected in 2012-2013. Middle School A reported 137 incidents of ISS that year. This number cannot be compared to other schools in the district or to the district as a whole because the use of ISS as a disciplinary action is subjectively determined by school administrators. For referrals that are not related to major offenses, and in the case of Middle School A that was all but 11 referrals, administrators may choose to assign ISS as a punitive action, or they may choose to assign after school detention, lunch detention, work detail, or other penalties. School administrators also have the discretion to use phone calls to parents, assign students to write reflections on their actions, or issue student warnings instead of penalties. Because of the site based management afforded to administrators in the district of my study, ISS is not a comparative measure of discipline. At Middle School A, the administrators tend to use reflective questions and reflective writing assignments for lesser violations.

The next data set relates to academic achievement. The 6th grade students at Middle School A demonstrated 63% achieving a passing score on the reading portion of
the state assessment test as compared to 55% of 6th grade students across the district who achieved a passing score. Among 7th grade students, the girls at Middle School A demonstrated 57% achieving a passing score on the state assessment test in reading as compared to 51% of 7th graders across the district. Among 8th grade students, the girls demonstrated 63% achieving a passing score on state assessment test in reading as compared to 51% of 8th graders across the district. At every grade level, the girls at Middle School A outperformed their peers across the district in reading.

On the math portion of the state assessment test, 6th grade students achieved a 46% passing rate as compared to 51% of students across the district. It is noteworthy that even though the students across the district outperformed the 6th graders at Middle School A, the girls made an 8 percentage point achievement gain over the previous year’s 6th grade students passing the state assessment test in math at Middle School A. Among 7th graders, 57% passed as compared to 55% district wide. Among 8th graders, 58% passed as compared to 53% district wide.

In science, only 8th grade students are tested across the state. The girls at Middle School A achieved a 35% passing rate as compared to 45% across the district. In writing, 81% of the 8th graders at Middle School A achieved a passing score as compared to 66% across the district.

On norm-referenced tests, the 6th grade girls at Middle School A scored at the 54 National Percentile (NP) level in reading while the district wide NP was 52. The 7th graders at Middle School A scored 57 NP as compared to 51 NP district wide. The 8th graders at Middle School A scored 61 NP while the district scored 59 NP. On the math portion of the norm-referenced tests, the 6th grade girls scored 42 NP while the district
scored 45 NP. In 7th grade, the girls scored 49 NP while the district scored 45 NP. In 8th grade, the girls scored 49 NP while the district scored 50 NP.

Another measure of academic achievement used by the school district is the percentage of middle school students passing high school level mathematics courses – Algebra 1 and Geometry. At Middle School A, 97.65% of the girls who took Algebra 1 passed the End of Course (EOC) examination and received high school credit. In Geometry, only one student was enrolled in Geometry via virtual school (online) and monitored by a teacher at Middle School A. That student took the Geometry EOC examination, and she passed it and received high school credit.

The student achievement gains from 2012 to 2013 based upon the state assessment tests are as follows. In reading, the 6th graders increased 8 percentage points of students passing the test while the 7th graders increased 16 percentage points and the 8th graders increased 23 percentage points. In math, 6th grade students at Middle School A showed an 8 percentage point gain, 7th grade students showed a 15 percentage point gain, and 8th grade students showed a 14 percentage point gain. In science, the only grade tested is 8th grade, and those students at Middle School A showed an 8 percentage point gain. In writing, where only 8th graders are tested, the students showed a 4 percentage point gain. The students’ gains were great enough to raise the state assigned grade from a C in 2012 to an A in 2013, a two letter grade increase in one year.

Middle School A’s academic data demonstrate strong academic performance surpassing the district average of proficiency on the state assessment test in six of eight instances of measurement, and the proficiency rates increased over the previous year’s proficiency rates on all eight instances of measurement with double digit gains in four
instances. The principal of Middle School A chose to include norm referenced test data in her ARP demonstrating that her students outperformed the district average in four of six instances. All these data taken together demonstrate that Middle School A is meeting the district’s stated goal for single gender programs of increasing academic achievement.

In her summary analysis, the principal of Middle School A stated, “Student achievement is on the rise in every area. We focus on all students being competent, confident, and connected. We have also placed strong emphasis on students understanding, charting, and taking ownership of their academic progress. Teachers continue to incorporate best practices on a daily basis.” This statement indicates the principal understands the achievement data she provided in her ARP. It also demonstrates her understanding of the importance of implementing gender differentiated classroom practices for teaching all-girls in an academic setting.

On the Anecdotal Data section of the ARP, the principal identified a list of achievements that she believes demonstrate success of her single gender school. She claimed that all students participated in the school’s Science/STEM Fair, and seven students participated at the district level. The school held a Women’s Symposium of Success during which over 30 successful, professional women in the community visited the school to share their stories with the students about how they attained professional success and what their careers entailed.

The principal also included in her anecdotal data a list of awards and achievements that included the Magnet Schools of America Award, the District’s Clean Swept Award, the citation of Apple Distinguished School and Apple Demonstration Site, and the students even were Regional Champions for Extra-murals Volleyball. She noted
that 38% of the student population had earned Honor Roll status based upon report card grades. Students participated in Future Business Leaders of America (FBLA) District competitions, Math League, Battle of the Books, World of Wonder (WOW) Tournament focused on social studies, and Spelling Bee tournaments. Students also established a reading tutoring program at a nearby elementary school and volunteered as mentors for the younger students.

The principal’s anecdotal data demonstrate a strong focus on academics in the areas of science, reading, math, social studies, and writing. These data also demonstrate the implementation of innovative practices, as they are a large component in winning a Merit Award from Magnet Schools of America. The overall attention to academic achievement is evidenced by the fact that more than 1/3 of the student body achieved Honor Roll. It is also noteworthy that these data show instances of the school’s emphasis on citizenship (Clean Swept Award) and athletics in addition to academics, to promote well-rounded students.

Middle School B

According to the ARP for 2012-2013, attendance data show the average daily attendance rate for Middle School B was 95.2%. This compares to the district average daily attendance rate of 94.09% overall and 93.9% among all middle schools. Similar to Middle School A, this data element is remarkable because the school surpassed the district average, as well as the average daily attendance rate among all middle schools in the district. It also surpassed the superintendent’s attendance goal for each school in the district of 95%.
The school had a total of 107 instances of OSS, which is 4.66% lower than the district average among all 44 district middle schools. Teachers at the school wrote 491 referrals during the 2012-2013 school year. Of those referrals, 181 were for boys in grade 6, 221 were for boys in grade 7, and 89 were for boys in grade 8.

The district identifies disciplinary referrals in the categories of alcohol/drugs, bus violations, personal conduct, criminal activity, minor violations, sexual offense, attendance issues, fighting, and other. At Middle School B, no referrals were submitted for criminal activity, sexual offense, or the category labeled other. The school had lower percentages of referrals written than the district-wide percentages in the categories of alcohol/drugs, minor violation, and attendance issue. Middle School B’s referral rates were higher than the district-wide rates for fighting, bus violations, and personal conduct.

The boys at the school accumulated 13 referrals for fighting, and that number made up 3.3% of the referrals at the school while the district-wide referral rate for fighting was only 1.9%. Similar to the all-girls school, because of the relatively small size of the student body, those 13 referrals equaled a percentage higher than that of the district even though the district had 2,405 referrals for fighting. According to the principal at Middle School B, the students at his school have an inflated number of bus violations because the boys are “taunted” for their preparatory uniforms by students on the buses from other schools in the district that do not wear such uniforms. Personal conduct is a lesser offense, and that category accounts for 70.5% or 346 of the referrals written on the boys at Middle School B. This means that the majority of disciplinary incidents at the all-boys school are for actions such as chewing gum, talking out of turn, using inappropriate language, demonstrating perceived disrespect toward others, and other such personal
behaviors. On the whole, disciplinary incidents related to referrals at Middle School B indicate better conduct than that of other schools across the district.

According to the ARP, Middle School B had 103 incidents of In School Suspension in 2012-2013. As previously mentioned, this number cannot be compared to other schools in the district or to the district as a whole because of the subjective nature of assigning students to ISS by school administrators. At the all-boys school, administrators tend to use other approaches to handling disciplinary incidents that are not related to major offenses, and at the school 96.5% of disciplinary incidents were for lesser offenses. All these disciplinary data combined indicate that Middle School B is meeting the district’s goal for its single gender programs to improve student conduct.

Student achievement data based upon state assessment test scores for Middle School B are as follows. In reading, 58% of the 6th grade students achieved a passing score as compared to 55% of 6th graders among all 44 middle schools in the district. In 7th grade, 41% of the students passed as compared to 51% of the 7th graders district wide. Among 8th graders at Middle School B, 47% passed as compared to 51% of all 8th graders in the district.

On the math portion of the state assessment test, 6th graders at Middle School B achieved a passing rate of 55% as compared to 51% district wide. In 7th grade, 56% of the students at Middle School B passed as compared to 55% district wide. In 8th grade, 45% of Middle School B students passed as compared to 53% district wide.

For the science portion of the state assessment test where only 8th grade students are tested, 39% of the students at Middle School B passed as compared to 45% across the
district. In writing where, again, only 8th graders are tested, 74% of the boys at Middle School B passed. This compares to 66% across the district.

Middle School B did not submit any data regarding norm referenced test scores for 2012-2013. The district did not require schools to include norm referenced test scores in the ARP, but rather offered these data as an additional option for schools to use to support their educational rationale for separating boys and girls. In mathematics courses for high school credit, the school reported that 79% of the students at Middle School B who took the Algebra EOC passed the test and earned high school credit. The school also reported that 100% of the boys who took the Geometry EOC passed the test and earned high school credit.

When comparing the school’s achievement levels from 2011-2012 to 2012-2013, which is how the state determines a school’s grade, Middle School B showed an 18 percentage point gain in 6th grade reading as demonstrated on the state assessment test. It showed a 2 percentage point drop among 7th graders in reading, and a 7 percentage point gain among 8th graders in reading for a school-wide gain of 9 percentage points. The school showed gains on the state assessment test in math across all grades. The 6th graders gained 14 percentage points, the 7th graders gained 11 percentage points, and the 8th graders gained 3 percentage points. On the state assessment test in science, the school dropped 3 percentage points while on the state assessment test in writing it gained 31 percentage points. All scores combined, the state assigned Middle School B a grade of B for 2012-2013, which was a two letter grade increase over the previous year. These academic gains are remarkable in that the school demonstrated gains in six of eight instances of measurement, and of those six instances four were double digit gains. The
district’s Department of Assessment and Accountability considers a 2 percentage point gain to be a statistically significant gain in any instance of measurement on the state assessment test, and that puts into perspective the significance of double digit gains and especially the 34 percentage point gain in writing among the boys at Middle School B.

In the summary analysis section of the ARP, the Lead Teacher of Middle School B said, “In a two year time period, [Middle School B] has seen tremendous growth throughout all academic areas. In the area of reading, our students’ reading achievement level 3 [passing] or higher has shown a 9 % growth, indicating that our students performed 23 points better than the previous year’s score. [The school] also saw positive gains in the area of math. Our students demonstrated a 28-point growth in math for all three grade levels combined. Our school saw its largest gains in the area of writing. Our 8th graders exhibited the largest gains in the district, exceeding the state average. Our students demonstrated a 31 point gain from 43% to 74% [passing].”

In his summary analysis, the principal demonstrated his pride in the school’s academic gains as he reiterated their achievement gains on the state assessment test that contributed largely to the state assigned school grade increasing from a D the previous year to a B for 2012-2013. The double letter grade increase is remarkable because it occurred during a year in which the state raised the bar for school grades. Therefore, not only did the school have to increase its achievement levels to maintain its previous grade of D, but it had to make significant gains in achievement to increase the school grade at all, and even more so to achieve a double letter grade increase.

The anecdotal data submitted via the ARP stated that the school’s focus for the year was to increase rigor throughout the school. Teachers experienced professional
development on quality questioning, and they attended a workshop presented by Dr. Barbara Blackburn on the topic of “Rigor is not a Four Letter Word,” on which she wrote a book by the same title. Teacher leaders and school administrators also visited a local middle school that had been authorized as a school with an International Baccalaureate Middle Year’s Program to study its methods of rigorous instructional practices.

Additional anecdotal data included the school’s award designation as an Apple Distinguished Program, the Magnet School of Excellence Merit Award from Magnet Schools of America, and the Golden School Award from the school district for service hours. The principal also presented evidence of parent satisfaction with the school by quoting parent comments such as, “My son was apathetic and kind of lost at his [neighborhood] middle school and now is really excited about school and loves going to [Middle School B].” Another parent testimonial said, “[Middle School B] has impacted my son tremendously in the sense of defining who he is as a young man… This has helped him set himself apart from others and really stand up for what he believes.”

The final piece of anecdotal evidence submitted in the ARP explained that on a district survey, teachers at the school indicated their satisfaction with a survey indicator that showed 90.5% of the teachers felt that the school was a good place to work and learn. Teachers also indicated they felt that the school offered additional support for students to succeed in a rigorous environment and they thought that the students worked to prioritize, develop and demonstrate the school’s nine core values stated in its creed.

These anecdotal data are particularly significant because they demonstrate buy-in from all stakeholder groups – students, parents, teachers, and school administrators. They also demonstrate the school’s commitment to academic excellence. That commitment
paid off in the school’s academic achievement gains demonstrated on the state assessment test. The three awards that were noted in this section of the ARP demonstrate the school’s advanced level of technology integration evidenced by the Apple Distinguished Program award; its emphasis on innovative instructional strategies, daily infusion of multicultural values, school-wide integration of the magnet theme of college preparation, and its connections to parents and community partners evidenced by the award from Magnet Schools of America; and its strong community support evidenced by the district award for service hours given to the school from the community.

**Surveys – Likert Scale Statements Quantified**

Along with the Annual Review of Program, the district provided surveys to principals of Middle School A and Middle School B in 2012-2013. The surveys involved three stakeholder groups – students, parents and guardians, and teachers. The teachers’ survey included other instructional personnel including principals, assistant principals, academic coaches, and technology resource teachers. Among the teachers at both schools, there were a total of 47 respondents, and 72% of the respondents were classroom teachers while the other 18% included administrators and other instructional support staff. Meanwhile, 54 parents and guardians from both schools responded to the survey, and 346 students responded from both schools combined. It is important to note that while the district strongly encourages schools to participate in its various surveys, they are not compulsory. Keeping that in mind, the survey response rates were 56.6% for the teacher group, 8% for the parent and guardian group, and 53.5% for the student group. I hoped for a 50% rate of return on these surveys, and the teacher group and the student group surpassed my expectation. The rate of return among the parent group is
comparatively lower; however, I feel that the 54 parent surveys that were returned provided enough feedback to meet the needs of this study.

**Teacher Survey Scaled Items Data**

The teacher survey was composed of eight statements covering topics that included teacher perception of the sufficiency of their training in the brain research and strategies of single gender educational programming, their perception about student engagement, meeting student learning needs, student work, student self-confidence, use of single gender strategies, teacher satisfaction, and their perceived impact of the character education strategy consisting of the use of a student creed. The teacher survey items prompted a response of strongly agree, agree, no opinion, disagree, or strongly disagree. For the purpose of this program evaluation, I combined the responses of strongly agree and agree, and I also combined the responses of strongly disagree and disagree. For a copy of the survey, please see Appendix F.

**Parent and Guardian Survey Scaled Items Data – Middle School**

The parent and guardian survey for middle school parents consisted of seven Likert scale statements. Similar to the survey of teachers, this survey’s directions prompted a response of strongly agree, agree, no opinion, disagree, or strongly disagree. For the purpose of this program evaluation, I combined the responses of strongly agree and agree, and I also combined the responses of strongly disagree and disagree. The survey items began by giving parents a statement from which to respond to the basic undergirding premise that boys and girls learn differently, then statements about their student’s engagement level, the learning needs of their student, homework completion, self-confidence, adjustment to the single gender educational environment, and their
overall perception of the single gender education experience. For a copy of the survey, please see Appendix G.

**Student Survey Scaled Items Data**

The student survey consisted of seven statements. The survey’s directions prompted a response of strongly agree, agree, no opinion, disagree, or strongly disagree. For the purpose of this program evaluation, I combined the responses of strongly agree and agree, and I also combined the responses of strongly disagree and disagree. The survey items began by giving students a statement from which to respond to the basic undergirding premise that boys and girls learn differently, then statements about their motivation level, academic needs, sense of success, self-confidence, communication skills, and their overall perception of the single gender education experience. For a copy of the survey, please see Appendix H.

**Survey Response Data by Site**

**Middle School A.** As demonstrated in Tables 1, 2, and 3, at Middle School A, 27 teachers responded to the survey. Additionally, 18 parents and guardians responded, and 123 students responded. The responses of all three stakeholder groups demonstrate a high rate of satisfaction with the educational experience at the all-girls middle school.

Among the 27 teachers and instructional staff (65.8% of all teachers and instructional staff) who responded from Middle School A, 100% agreed that they had received sufficient training in brain research and single gender teaching strategies, and the latter strategies meet better the needs of students than co-ed classes do, and teaching in single gender single gender classes had been a positive experience (statements #1, 3, and 7). On all the other statements, the majority of teacher respondents agreed. None of
the teachers disagreed with any of the Likert scale statements except statement #4 - My single gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed – yet, 80.7% agreed with the statement. The 100% rate of agreement with statements #1, 3, and 7 is to be expected, as every teacher and instructional staff member applied to work at the all-girls school knowing that they would be working in a single gender environment and that they would be required to take training in brain research and its implications for teaching practices. Similarly, the 96.3% rate of agreement with statement #6 – I have used at least two single gender strategies in my classroom this school year – is what I would expect from this stakeholder group. The high rate of agreement with statements #2 and 5 indicate that the innovative instructional practices designed to meet the learning needs of girls combined with the all-girls environment are effective, as perceived by the teachers and instructional staff. While the response rate of agreement with statement #8, regarding the impact of the school creed on students, is slightly less than most others, it is still high and indicates that this group of respondents perceives the creed to be a valuable aspect of the school culture. I’m particularly interested in the response rate of agreement to statement #4. It shows the lowest rate of agreement among this group of all survey statements, and indicates that some teachers did not find a positive correlation between the single gender environment and practices and student performance on completing classwork and homework.

<table>
<thead>
<tr>
<th>Statement</th>
<th>% Agree</th>
<th>% No Opinion</th>
<th>% Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have received sufficient training in brain research and/or single gender strategies.</td>
<td>100%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Students are more interested and motivated to achieve in single gender classes at my school than my previous coed students or other coed students I have observed.</td>
<td>96%</td>
<td>4%</td>
<td>-</td>
</tr>
</tbody>
</table>
3. Learning activities address the needs of students better in single gender classes at my school than in coed classes.  
4. My single gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed.  
5. My single gender students display greater self-confidence than my previous coed students or other coed students I have observed.  
6. I have used at least two single gender strategies in my classroom this school year.  
7. Overall, teaching single gender class(es) has been a positive experience for me.  
8. The use of a school/class creed has positively impacted my single gender students this year.

Table 1 Likert Scale Survey Responses for Middle School A: Teachers

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Neutral (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Learning activities address the needs of students better in single gender classes at my school than in coed classes.</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. My single gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed.</td>
<td>80.7</td>
<td>11.5</td>
<td>7.8</td>
</tr>
<tr>
<td>5. My single gender students display greater self-confidence than my previous coed students or other coed students I have observed.</td>
<td>96.3</td>
<td>3.7</td>
<td>-</td>
</tr>
<tr>
<td>6. I have used at least two single gender strategies in my classroom this school year.</td>
<td>96.3</td>
<td>3.7</td>
<td>-</td>
</tr>
<tr>
<td>7. Overall, teaching single gender class(es) has been a positive experience for me.</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8. The use of a school/class creed has positively impacted my single gender students this year.</td>
<td>88.9</td>
<td>11.1</td>
<td>-</td>
</tr>
</tbody>
</table>

Among the 18 parents and guardians (5.5% of parents and guardians) at Middle School A that responded to the survey, 94.4% agreed with the premise that boys and girls learn differently and that their child had adjusted well to the single gender school (statements 1 and 6). On all the other statements, except statement 4 related to increased homework completion, more than 65% of the parents who responded agreed. The rate of disagreement on all these statements was below 12%. On statement 4, only 50% of the parent/guardian respondents agreed, 38.9% held no opinion, and 11.1% disagreed. I noted a pattern emerging among teachers and parents/guardians at Middle School A that showed the impact on rate of completion of classwork or homework in a single gender setting as compared to a co-gender setting to be lower than their perception of the other areas of impact of the single gender setting considered on the survey. This pattern may indicate that the single gender setting does not positively impact student completion of homework, and the responses to this statement combined with the teachers’ responses to a similar statement on their survey indicates that further study is needed to determine whether single gender education impacts students positively regarding completion of classwork and homework. Otherwise, the high rate of agreement among the parents who responded to the survey indicates that they are satisfied with the educational choice they
made for their daughters and perceive that their daughters are thriving at the all-girls school.

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>% Agree</th>
<th>% No Opinion</th>
<th>% Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that boys and girls learn differently.</td>
<td>18</td>
<td>94.4%</td>
<td>-</td>
<td>5.6%</td>
</tr>
<tr>
<td>2. My student is more interested and motivated to achieve in the single gender school than when in a mixed gender school.</td>
<td>18</td>
<td>77.8%</td>
<td>16.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td>3. Lessons and activities address the academic needs of my student better in single gender classes than in mixed gender classes.</td>
<td>18</td>
<td>66.7%</td>
<td>33.3%</td>
<td>-</td>
</tr>
<tr>
<td>4. My student is completing homework more often than when in a mixed gender school.</td>
<td>18</td>
<td>50.0%</td>
<td>38.9%</td>
<td>11.1%</td>
</tr>
<tr>
<td>5. My student displays greater self-confidence in the single gender school than when in a mixed gender school.</td>
<td>18</td>
<td>77.8%</td>
<td>11.1%</td>
<td>11.1%</td>
</tr>
<tr>
<td>6. My student has adjusted well to the single gender school.</td>
<td>18</td>
<td>94.4%</td>
<td>-</td>
<td>5.6%</td>
</tr>
<tr>
<td>7. Overall, having my student in a single gender school has been a positive experience for him/her.</td>
<td>18</td>
<td>83.3%</td>
<td>16.7%</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2  Likert Scale Survey Responses for Middle School A: Parents and Guardians

Among the 123 students (38% of all students at Middle School A) that responded to the survey at Middle School A, more than 50% agreed with all the statements except statement #2. Additionally, less than 20% disagreed with each of the statements except statement #2. Statement 2 said, “I am more interested and motivated to achieve in the single gender school than when in a mixed gender school.” Only 44.6% of the student respondents agreed with this statement. These results indicate that the majority of the girls at the school who responded to the survey find the single gender environment to be academically advantageous. The results also indicate a positive impact on the students’ self-confidence which is a focus area of the school as identified in the school creed, as well as its vision and mission statements.
5. I feel that I have greater self-confidence in this single gender school than when in a mixed gender school.  

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</thead>
<tbody>
<tr>
<td>123</td>
<td>67.5%</td>
<td>17.9%</td>
<td>14.6%</td>
</tr>
</tbody>
</table>

6. I feel that I am better able to communicate my ideas effectively in a single gender class than in a mixed gender class.  

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</thead>
<tbody>
<tr>
<td>122</td>
<td>64.8%</td>
<td>21.3%</td>
<td>13.9%</td>
</tr>
</tbody>
</table>

7. Overall, being in a single gender school has been a positive experience for me.  

<p>| | | | |</p>
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</thead>
<tbody>
<tr>
<td>123</td>
<td>71.6%</td>
<td>21.1%</td>
<td>7.3%</td>
</tr>
</tbody>
</table>

Table 3  *Likert Scale Survey Responses for Middle School A: Students*

**Middle School B.** As demonstrated in Tables 4, 5, and 6, at Middle School B, 20 teachers responded to the survey. Additionally, 36 parents and guardians, and 223 students responded to the survey. Similar to the survey results from Middle School A, the responses of all three stakeholder groups demonstrated a high rate of satisfaction with the educational experience at the all-boys middle school.

Among the teacher group of respondents (47.6% of all teachers and instructional staff), 100% agreed with statements #1 and #6 indicating their belief in the premise that boys and girls learn differently, and they supported this belief with their actions demonstrated by implementing at least two of the strategies they had been taught by the district to use when teaching in a single gender setting. More than 90% of the respondents in the teacher group indicated on item #7 that teaching single gender classes had been a positive experience for them, and on item #3 that learning activities addressed the needs of students better in single gender classes at their school than in coed classes. More than 60% of respondents agreed with all the other statements (items #2, 3, 4, 5, 8) on the survey. Similar to Middle School A, every teacher and instructional staff member at Middle School B applied to work at the all-boys school knowing that they would be working in a single gender environment and that they would be required to take training in brain research and related implications for teaching practices and then put that training into their instructional practices. Therefore, finding the majority of respondents in
agreement with every statement on the survey is to be expected. As in the survey results from the teacher group at Middle School A, the lowest rate of agreement among the teachers at Middle School B are on statement #4 related to students completing classwork and homework, thus the pattern that began to emerge among all stakeholder groups at Middle School A emerged at Middle School B, as well.

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>% Agree</th>
<th>% No Opinion</th>
<th>% Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have received sufficient training in brain research and/or single gender strategies.</td>
<td>20</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Students are more interested and motivated to achieve in single gender classes at my school than my previous coed students or other coed students I have observed.</td>
<td>19</td>
<td>73.7</td>
<td>10.5</td>
<td>15.8</td>
</tr>
<tr>
<td>3. Learning activities address the needs of students better in single gender classes at my school than in coed classes.</td>
<td>19</td>
<td>94.7</td>
<td>-</td>
<td>5.3</td>
</tr>
<tr>
<td>4. My single gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed.</td>
<td>18</td>
<td>61.1</td>
<td>16.7</td>
<td>22.2</td>
</tr>
<tr>
<td>5. My single gender students display greater self-confidence than my previous coed students or other coed students I have observed.</td>
<td>19</td>
<td>84.2</td>
<td>5.3</td>
<td>10.5</td>
</tr>
<tr>
<td>6. I have used at least two single gender strategies in my classroom this school year.</td>
<td>18</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7. Overall, teaching single gender class(es) has been a positive experience for me.</td>
<td>18</td>
<td>94.4</td>
<td>5.6</td>
<td>-</td>
</tr>
<tr>
<td>8. The use of a school/class creed has positively impacted my single gender students this year.</td>
<td>19</td>
<td>73.7</td>
<td>21</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Table 4  **Likert Scale Survey Responses for Middle School B: Teachers**

The 36 parents/guardians that responded (11% of parents and guardians) to the survey at Middle School B showed a strong rate of agreement with all the statements on the survey. The highest rate of agreement was demonstrated on statements #6 and #7 through which the parents and guardians showed they felt that their sons had adjusted well to the all-boys school and that their they had a positive experience in the single gender setting. The parents and guardians also had a high rate of agreement (91.7%) on statements #1 and #3 demonstrating their belief that boys and girls learn differently, as well as their perception that their child’s academic needs were better met at the all-boys school than in their previous experience in mixed gender classes. On statements #2 and
86.1% of the parents agreed that their child was more interested and motivated to achieve in the single gender school and that their child displayed greater self-confidence in the all-boys school than when in mixed gender learning environments.

Similar to the parents and guardians who responded to the survey at Middle School A, the statement with the lowest rate of agreement by the parents and guardians at the all-boys school was statement #4 regarding an increased rate of homework completion at the single gender school as compared to their experience with their sons at a mixed gender school. Although statement #4 showed the lowest rate of agreement of all the survey statements, 61.7%, a majority, of the respondents agreed. These survey results indicate a high rate of satisfaction with the choices these parents and guardians made for their sons’ education during the middle school years. The lower rate of agreement on statement #4 seems to clearly indicate that the single gender learning environment is not perceived to have as great an impact on students’ completion of classwork and homework as it has on other aspects of their academic performance.

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>% Agree</th>
<th>% No Opinion</th>
<th>% Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that boys and girls learn differently.</td>
<td>36</td>
<td>91.7</td>
<td>2.8</td>
<td>5.5</td>
</tr>
<tr>
<td>2. My student is more interested and motivated to achieve in the single gender school than when in a mixed gender school.</td>
<td>36</td>
<td>86.1</td>
<td>8.3</td>
<td>5.6</td>
</tr>
<tr>
<td>3. Lessons and activities address the academic needs of my student better in single gender classes than in mixed gender classes.</td>
<td>36</td>
<td>91.7</td>
<td>8.3</td>
<td>-</td>
</tr>
<tr>
<td>4. My student is completing homework more often than when in a mixed gender school.</td>
<td>36</td>
<td>61.7</td>
<td>33.3</td>
<td>5.6</td>
</tr>
<tr>
<td>5. My student displays greater self-confidence in the single gender school than when in a mixed gender school.</td>
<td>36</td>
<td>86.1</td>
<td>13.9</td>
<td>-</td>
</tr>
<tr>
<td>6. My student has adjusted well to the single gender school.</td>
<td>36</td>
<td>94.4</td>
<td>-</td>
<td>5.6</td>
</tr>
<tr>
<td>7. Overall, having my student in a single gender school has been a positive experience for him/her.</td>
<td>36</td>
<td>94.4</td>
<td>2.8</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Table 5  Likert Scale Survey Responses for Middle School B: Parents and Guardians

Two hundred twenty three students responded (69% of all students at the school) to the survey at Middle School B. The statement with the highest rate of agreement from
this stakeholder group was statement #1 – I believe that boys and girls learn differently. More than 50% of the boys agreed with that statement. Less than 50% of the students agreed with all other statements (#2, 3, 4, 5, 6, 7,) on the survey. The lowest rate of agreement, 31.8%, was in response to statement 2 – I am more interested and motivated to achieve in the single gender school than when in a mixed gender school. I found the students’ relatively low rate of agreement to all the statements on the survey, as compared to the parents/guardians and the teachers, to be interesting, even perplexing. Throughout the school year, I had observed the students at various times of the school day, and they seemed to be highly motivated, engaged, and generally thriving, so the survey results surprised me. When I discussed this with the Lead Teacher, I learned that the survey had been administered to the boys via their school issued iPads during lunchtime in the cafeteria one day during the last week of school. That week they had lost their competition privileges school-wide and the Lead Teacher noted that this loss of privilege had negatively impacted the students’ general attitude toward school. That may have influenced the survey results.

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>% Agree</th>
<th>% No Opinion</th>
<th>% Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that boys and girls learn differently.</td>
<td>221</td>
<td>57.9</td>
<td>19.9</td>
<td>22.2</td>
</tr>
<tr>
<td>2. I am more interested and motivated to achieve in the single gender school than when in a mixed gender school.</td>
<td>223</td>
<td>31.8</td>
<td>28.3</td>
<td>39.9</td>
</tr>
<tr>
<td>3. Lessons and activities address my academic needs better in single gender classes than in mixed gender classes.</td>
<td>222</td>
<td>43.2</td>
<td>25.7</td>
<td>31.1</td>
</tr>
<tr>
<td>4. I feel more successful in this single gender school than in a mixed gender school.</td>
<td>221</td>
<td>40.3</td>
<td>28</td>
<td>31.7</td>
</tr>
<tr>
<td>5. I feel that I have greater self-confidence in this single gender school than when in a mixed gender school.</td>
<td>222</td>
<td>39.7</td>
<td>27</td>
<td>33.3</td>
</tr>
<tr>
<td>6. I feel that I am better able to communicate my ideas effectively in a single gender class than in a mixed gender class.</td>
<td>222</td>
<td>41.5</td>
<td>22.9</td>
<td>35.6</td>
</tr>
<tr>
<td>7. Overall, being in a single gender school has been a positive experience for me.</td>
<td>223</td>
<td>47.9</td>
<td>30.5</td>
<td>21.6</td>
</tr>
</tbody>
</table>

Table 6  Likert Scale Survey Responses for Middle School B: Students
Surveys - Open-Ended Questions

The teacher surveys, parent and guardian surveys, and student surveys for Middle School A and Middle School B included open-ended questions. In this section, I have provided numerical data regarding the response rates to each of the open-ended questions from both schools and among each stakeholder group. I also have provided summary information regarding the emergent themes among the responses to each question by each stakeholder group.

Middle School A

Among the teachers and instructional staff at Middle School A, 27 faculty members or 65.8% responded to the survey. The first open-ended question asked: What do you consider to be the greatest benefit of single gender education for the students at your school? In response, 26 of the 27 respondents answered this question, and several themes emerged among their responses. These themes indicated increased self-confidence among the students, increased focus on academics, an increase in academic risk-taking, and the development of a sense of community.

All responses to the first open-ended question were positive. One teacher wrote, “Girls who would be ‘swallowed up’ at neighborhood schools succeed here.” The emergent themes, when taken together, are another indicator that the school is meeting the district’s objective for its single gender programs of increasing student achievement. In addition, these themes indicate that the school is impacting the students’ character development as well as their social development.

The second open-ended question asked: How is your single gender program impacting students in the area of character development? The teachers and instructional
The teachers and instructional staff at Middle School A were, again, all positive in their responses. On this question, 24 of the 27 respondents to the surveys expressed their thoughts, and many of them presented multiple answers to the question. The themes that emerged included the use of the school creed to impact positively character development and student conduct, increased self-confidence, a caring attitude toward others, and a sense of community.

It is notable that two of these themes were also emergent themes in response to the first open-ended question – increased self-confidence and a sense of community. The themes that emerged included the use of the school creed to positively impact character development and student conduct, increased self-confidence, a caring attitude toward others, and a sense of community. One teacher wrote, “Increasing student character by being responsible for living by the school creed.” Another teacher wrote, “Students take ownership of the creed and the values therein.” Those values include confidence, competence, connectedness, dedication, commitment, focus, empowerment, resilience, and concern for others. The data from this stakeholder group on this question indicate that the school is meeting the district’s objective for single gender programs to improve student behavior.

The third open-ended question asked: If there were one word or phrase to describe the impact of single gender education at your school, what would it be? Again, the teachers and instructional staff at Middle School A were all positive in their responses, and 25 of the 27 respondents answered this question. The themes of confidence and focus on academics resurfaced on this question, along with the theme of empowering. These responses support the responses to the previous two open-ended questions by this stakeholder group. The consistency among the emergent themes indicates that the
teachers and instructional staff perceive the girls to be thriving academically and behaviorally, as well as in character development. All these data contribute to answering my first primary exploratory research question: In what ways are the all-boys school and the all-girls school having an impact on the students in the programs in the areas of student achievement, discipline, attendance, and character development?

Eighteen parents and guardians, representing 5.5% of the parents responded to the survey, and of those parents 16 responded to the first open-ended question which asked: What do you consider to be the greatest benefit of single gender education for your student? Among the responses, five themes emerged comments regarding greater focus on academics, fewer distractions, increased self-confidence, the use of gender differentiated instructional practices that address the ways in which girls learn, and less bullying or drama. One parent wrote, “…our daughter has thrived. Seeing what women can achieve in our society has also been a benefit. Please create a single gender high school.” The first three emergent themes regarding focus, fewer distractions and increased self-confidence mirror the themes that emerged among the responses from the teachers and instructional staff.

The second open-ended question asked: How has being in the single gender program impacted your student in the area of character development? Of the 18 parents and guardians who responded to the survey, 16 answered this question. The emergent themes related to this question included self-confidence, focus on career goals, and the development of leadership skills and social skills. One parent said, “She seems to be more focused on her career goals.” Another wrote, “Bringing in successful females from the community has shown our daughter what she can accomplish.” Another parent stated,
“She has learned to develop a character of her own instead of fitting in and following the crowd.” The theme of increased self-confidence has once again emerged in response to this question. Considering the emergent themes among the parents to both open-ended questions, it is important to note a pattern of commonality between the teacher group and the parent group. Both groups expressed their perceptions that the girls had developed greater self-confidence and increased focus on academics, along with fewer distractions at the all-girls school.

Among the students, 123 (38%) responded to the survey. Among those, 117 answered the first open-ended question: What about being in a single gender school has helped you the most this year? The students’ responses showed obvious themes related to a stronger academic focus, fewer distractions, academic achievement, and self-confidence. Other emergent themes included increased levels of communication with other students and with teachers, along with less drama and conflict. One student wrote, “…now I can let the real me be me.” Another student wrote, “…I don’t have to worry about what the boys think of me, like if I am smart or dumb.” It is remarkable that several of the emergent themes among the students’ responses reflect those of the teachers and the parents and guardians. The commonalities among all three groups were fewer distractions, more self-confidence, and higher academic achievement.

The second question asked: How has being in a single gender school helped you become a better citizen? Of the 123 girls who responded to the survey, 102 answered the second open-ended question. The themes that emerged in response to this question were increased academic focus, higher academic achievement, increased self-confidence,
greater involvement in school activities, improved communication skills, better friendships and interactions with others, and the positive influence of the school creed. One student wrote, “…I understand the concept of being an individual.” Another student wrote “Now I know what [it] really means to succeed. Be proud of it…” Several students crossed out the last word in the question, citizen, and replaced it with the word student.

Once again, I saw the repeated the themes of increased academic focus, academic achievement, and self-confidence. Additionally, the responses of the student group, like the teacher group, demonstrated the positive impact of the school creed. Here the students connected the creed to causing them to become better citizens while the teachers connected the creed to impacting positively student conduct. All the open-ended question survey data taken together, from all three stakeholder groups, indicate that the all-girls school is meeting the district’s goals for single gender programs to increase academic achievement and to improve student discipline.

Middle School B

At Middle School B, 20 teachers and instructional staff members (47.6%) responded to the survey. Of those 20, 13 responded to the first open-ended question which asked: What do you consider to be the greatest benefit of single gender education for the students at your school? The responses were positive in nature. The foremost emergent themes among the responses were fewer distractions (because there were no girls at the school), academic achievement, and gender differentiated instructional practices. Other themes included less social drama, self-advocacy, character education and implementation of the school vision – “Molding young men of distinction who will achieve greatness.” Here we
see a connection between the responses of the teachers at the all-boys school and those at the all-girls school with themes related to academics.

Twelve teachers and instructional staff members responded to the second open-ended question which asked: How is your single gender program impacting students in the area of character development? The most resounding theme in response to this question was on the use of the school creed and its nine core values of responsibility, respect, honesty, integrity, confidence, perseverance, courtesy, good judgment, and good sportsmanship. One teacher wrote, “We focus on core values to promote our kids to become men of distinction…” Here we see another connection between the teachers of the all-boys school and the teachers of the all-girls school related to using the creed to increase character development among students. Only one teacher at Middle School B wrote a dissenting statement in response to this question that said, “I have not seen a strong correlation to character improvement. The ones with good character already had it.” This statement may be considered an outlier since it was the only negative response to this question among all the teachers at both schools who responded to it.

All the responses by teachers and other instructional staff members to the third open-ended question were positive. This question asked: If there were one word or phrase to describe the impact of single gender education at your school, what would it be? Life-long was a repeated term in response to this question. Teachers also identified confidence, focus, and academics. These themes are similar to the emergent themes at the all-girls school in response to the same question.

Among the parents and guardians at Middle School B, 32 responded to the survey (11% of parents surveyed). The first open-ended question asked: What do you consider to
be the greatest benefit of single gender education for your student? Of the 32 parents and guardians who responded to the survey, 26 answered the first open-ended question.

Several themes emerged from their responses with the most dominant themes being focus on academics, fewer distractions from students of the opposite sex, and academics. Other emergent themes included self-confidence and the implementation of gender differentiated instructional strategies. These themes nearly mirror those represented by the responses of the parents at the all-girls school.

Parents and guardians responded positively to the second open-ended question, as well. The question asked: How has being in a single gender program impacted your student in the area of character development. Twenty-five parents and guardians responded to this question. The most prevalent emergent themes that emerged among the responses were self-confidence, academics, and greater maturity. Several respondents used the phrase “becoming a man” in their reference to their sons’ developing maturity. That particular phrase reflects the school’s vision statement, “Developing young men of distinction who will achieve greatness.”

Another theme that emerged was the development of moral or core values. This theme reflects the school’s creed. That is significant because the school creed emerged in the responses of the teachers at Middle School B, as well as the teachers and students of Middle School A, the all-girls school.

Several parents commented on the positive impact the teachers and instructional staff had on their sons’ development. One parent wrote that her son was impacted in the area of character development “tremendously in the sense of defining who he is as a young man. I feel, as well as his father, [that] this has helped him set himself apart from
others and really stand out for what he believes in, freely and positively.’” Another parent wrote similarly, “It has taught him, shown him the road to becoming a man.” Another parent wrote, “…Often personal character is overshadowed by the need to impress or constantly prove ‘alpha’ status when both genders are together. Take away the dramatic element of [a] mixed gender classroom, and it leaves ample opportunity for the boys (or girls) to focus on improving themselves, academically, and morally. Character development is the quintessential by-product of this…” These comments, along with the overall themes that emerged from the responses indicate that the school is having a positive impact on the character development of the boys.

Among the students at Middle School B, 223 young men (69%) responded to the survey. The first open-ended question Asked: What about being in a single gender school has helped you the most this year? Of the students who responded to the survey, 195 answered the first open-ended question. The most prevalent themes that emerged were fewer distraction by the opposite sex, academics, and focus. Other emergent themes included self-confidence, improved conduct, use of iPad technology, friends, and gender differentiated instructional strategies. The theme of better teachers and instructional staff surfaced among the boys’ responses, as well.

A few students commented that they thought they would learn equally well in any middle school. Several students had no comment on this question or stated that they found no benefits. Three students indicated they did not like the single gender environment and would prefer a co-gender school. It is noteworthy that the top three most prevalent themes among the male students’ responses to this question paralleled the top
three themes among the responses from the girls at the all-girls school – fewer
distractions by the opposite sex, stronger focus on academics, and academic achievement.

Of the 223 students who responded to the survey, 210 answered the second open-ended question which asked: How has being in a single gender school helped you to become a better citizen? The most prevalent theme that emerged among the students’ responses was that of the core values in the school creed. Other dominant themes were improved communication skills, developing a respect for others, and increased academic achievement. Another theme that emerged was the use of the specific words “Man of distinction” which reflects the students’ internalization of the school’s vision statement.

Several students had no comment in response to this question, several commented that they had experienced no impact in the area of citizenship, and several said they were already good citizens before enrolling in the school. Three students indicated that their experience at the school had a negative impact on them. One student wrote, “The [school] creed has helped me learn how to be a good man.” Another student wrote, “…I have been able to learn more about the basics of becoming a useful and effective American citizen so that I can build a successful future for both myself, and for people I will be able to help in the future.” One young man wrote, “It teaches us to be part of something bigger than yourself.”

It is noteworthy that the dominant theme of the students’ responses was centered on the school’s creed and the core values therein. Many students isolated individual core values within the creed in their responses to this question. A connection between the boys’ responses and the girls’ responses to this question became obvious in that the influence of the school creed emerged as a theme among the students at both schools.
Interviews

I conducted interviews at both middle schools in order to obtain qualitative data to answer my fourth primary exploratory question: What do teacher leaders and administrators at Middle School A and Middle School B report as program improvements that are needed, specifically to improve student achievement as measured by state assessment test scores and state assigned school grades? I interviewed both principals. I also interviewed five teacher leaders including two teachers from Middle School A and three teachers from Middle School B. I interviewed each person separately.

Middle School A

I interviewed the principal of Middle School A, the all-girls middle school, in her office at the school, and the interview lasted 14 minutes. I also interviewed the lead teacher in her office, and the interview lasted 12 minutes. The third interview I held at the school was with the math coach. We met in her classroom, and the interview lasted 17 minutes.

The first question I asked each interviewee was: Do you believe that the single gender program at your school is making a positive difference in the lives of your students? If so, in what ways? The principal and the teacher leaders responded similarly on several points. All three interviewees said that the school was making a positive impact in the lives of its students. Additionally, all three identified increased self-esteem to be a marker of a positive impact. Both teachers reported that the girls were happy at school based upon a survey of students and parents, as well as personal observation. They also noted increased self-confidence among the girls.
The lead teacher added that the survey results indicated that the girls learned better, had fewer distractions, and participated in school more than they did in their previous co-gender schools. The lead teacher explained that she had previously taught girls at a co-gender middle school that then transferred to Middle School A. She said she was able to compare those students’ experiences at the co-gender school with their new experiences at the all-girls school, and she had personally observed them demonstrating “confidence, finding their own voice, taking [academic] risks, willing to be wrong where in the past they weren’t.”

The principal cited several items of student achievement data. She said the schools’ students were performing above the district average. She also said the school was ranked number two in reading gains and number five in math gains among all middle schools across the entire state.

The second question I asked was: Please explain any impact your single gender program had on student achievement, attendance, discipline, and/or character development that is not evident in test data. All three interviewees said the school had positively impacted discipline. They reported that the school had the lowest suspension rate and the lowest referral rate of all middle schools in the district. The rate of OSS and ISS had been on the decline since the school opened as an all-girls school. Students were assigned ISS largely because of uniform infractions or tardiness, comparatively lesser violations. The principal and the lead teacher identified a positive impact of the single gender school on attendance that was among the top 5% of the district. The school had the greatest increase in attendance of all middle schools in the district in 2013.
The principal and the math coach both addressed character development as an area of positive impact resulting from the single gender environment. The students recited the school creed daily, adults discussed the creed with the students often, and the students knew that the creed defined the expectations of their character. The instructional leaders said the school creed was the basis of character development at the school, and character development tied into the success of the school in other areas. An example of the connection between the creed and academic achievement was exemplified by the lead teacher who said that the girls at Middle School A were performing in the top 5% of all 44 district middle schools in math and science on formative tests which were predictors of how the students would likely perform on the state-wide achievement test.

The third question was: What improvements in your single gender program do you believe are needed to improve student achievement as measured by state assessment test scores and state assigned school grades? The principal and the lead teacher focused their responses around the concept of increasing the emphasis of Science, Technology, Engineering, and Math (STEM) and even adding STEM as an official part of the school’s magnet theme of college preparation. STEM would push the girls in science, and would address the need for more women in STEM related fields. This would increase the school’s attention on the science portion of the state assessment test. The school had made gains in science, but there was room for growth in that area.

In addition, the lead teacher identified the need for more teacher training on how to infuse the Prep Scholar Profile into instruction. The Prep Scholar Profile was based upon the scholarly attributes students were expected to develop that included: accountable, communicators, confident, empathetic, equipped, inquisitive, introspective,
leaders motivated, volunteers. The lead teacher stated a need for increased use of gender differentiated instructional practices and that a strategic staff development plan would address this need. She also suggested the school use demonstration classes or peer to peer teacher observations to strengthen the teachers’ use of technology in classroom instruction. The math coach indicated the need to continue using data to drive instruction in every classroom and to further prepare students for the state assessment test.

The fourth question was: How is your single gender program impacting students in character development, specifically in the areas of responsibility, respect, honesty, integrity, confidence, perseverance, courtesy, good judgment, good sportsmanship, confidence, competence, connectedness, dedication, commitment, focus, empowerment, resilience, and concern for others? All three of the interviewees identified strong areas of growth to be confidence, connectedness, and competence. The principal referred to the work of Dr. Joann Deak who claims that those three character traits are the building blocks of self-esteem. The principal and lead teacher had been in Deak’s audience and heard her speak on this topic on two occasions.

The influence of the school creed on character development resurfaced in comments by the principal and the lead teacher in response to this question. Character development at the school was palpable and could be observed, according to the lead teacher. She said, “In 12 years of being in middle schools, I’ve never worked in a school that has developed character. We’ve talked about it, but there hasn’t been a systematic program where it’s intentionally taught… [At Middle School A], the school creed is inherent in everything we do.” The character traits stated in the creed were tied to academic lessons, they were included on student reflection sheets, they were emphasized
in extended morning character development lessons, and they were included in the school’s Prep Scholar Profile.

The principal noted growth in the area of empathy among the girls, along with good sportsmanship as a strong focus in Physical Education. “We have the most competitive PE classes in the district… because of the removal of boys. That’s the bottom line,” said the principal. Additionally, the principal and the math coach identified resilience as another character trait exemplified by the students. The math coach emphasized the trait of commitment and gave an example based on her experience explaining that at the all-girls school almost every girl had completed science projects as opposed to a typical middle school where about 10% of students turn in a science project.

Several themes emerged among the responses to all three interviews I conducted at Middle School A. All three interviewees believed that the school was positively impacting its students in academic achievement, character development, attendance, and discipline. Their deep commitment to single gender educational practices was evident. The use of the school creed as a contributing factor to the character development of the students was obvious. They all identified specific areas of positive impact that were not evident in test data including confidence, competence, and connectedness, along with other character traits in the school creed. The importance of building these three character traits was a focus of the school. They also identified specific areas for school improvement to help the students increase further academic achievement, specifically in the subject of science, and the continued use of student data to inform instructional practice.
I posed question five to the principal only. I asked: How can the design of the Annual Review of Program be improved to enable you to provide a true picture of your single gender program’s effectiveness and areas for improvement? The principal suggested that the district remove the formative data table. She pointed out that it was unnecessary data in a final, annual report. She also suggested that the district include a table that demonstrates the number of students enrolled in the school at the beginning of the year, as compared to how many are still enrolled at the end of the year. The table should show how many students left the school during the year and why. Then the district should look for trends among the reasons for leaving. She felt that would provide data to help school and district administrators to develop a plan to address the root cause of students withdrawing, so they can build a better program for the future. In the principal’s opinion, it would enable leaders to see trends and determine how to address them.

I asked the sixth question to the principal only. I asked: What suggestions do you have on how qualitative data, along with quantitative data, can be incorporated into district reports to show results of your students in single gender classes in ways that are not measured on standardized tests and other data collection mechanisms? In response, the principal suggested that a question should be added to the surveys of all three stakeholder groups – students, parents, and teachers. That question should be, “Why do you want to stay at the school?” She thought the answers to why students leave, as well as to why they stay may prove to be helpful as the district continues to build the program.

Middle School B

I interviewed the principal of Middle School B, the all-boys middle school, in his office at the school, and the interview lasted 18 minutes. I also interviewed the lead
The first question I asked each interviewee was: Do you believe that the single gender program at your school is making a positive difference in the lives of your students? If so, in what ways? Similar to the responses to this question at Middle School A, all the interviewees at Middle School B stated that the single gender school was making a positive difference in the lives of its students. The most dominant theme that emerged among the responses centered on character development as an area of impact. The core values stated in the school creed and the impact of the vision statement regarding developing men of distinction were a clear focus of the school in impacting character development. Additionally, the Prep Scholar Profile added value to character development by teaching the boys ten habits for preparing for high school, college, and career. The ten habits included the following attributes: leaders, inquisitive, communicators, empathetic, volunteers, introspective, courageous, motivated, equipped, and accountable. Those ten attributes helped the boys to become active learners who were intrinsically motivated.

The second question I asked was: Please explain any impact of your single gender program on student achievement, attendance, discipline, and/or character development that is not evident in test data. The principal, lead teacher, and subject area leader all centered their answer to this question on attendance and discipline. Attendance was above the district average and was over 96% daily, at the time of the interviews, and had
been steadily increasing each year since the school opened as an all-boys school. There was an earnest, zeal regarding attendance among the students. They felt the school was a safe place, and they felt wanted and comfortable at school, so attendance was strong. The school had received a certificate from the Supervisor of Attendance for surpassing the superintendent’s attendance goal for all schools in the district.

The principal stated the school had one of the lowest records for OSS among all middle schools in the district. The school had seen a decrease in student discipline each year since the school opened as an all-boys school in 2011. The subject area leader said, “The interesting thing about teaching at a single gender school like this is that the boys, to some extent, discipline each other.” Leaders emerged and felt compelled to lead.

Student leaders had the option to wear a special tie, a bow tie, which was different from the rest of the student population’s mandatory uniform ties. The notoriety they earned by wearing the special bow ties leant itself to character development. Teachers and other students could remind student leaders to “act like a man of the bow tie.” The subject area leader said he had seen this effect of leadership at Middle School B, but not elsewhere in his teaching experience.

All the interviewees cited character development as an area of impact. The system of core values was evident in the school creed, and instructional staff redirected students to the core values, as needed, and taught them how to be responsible students who took ownership for their behaviors. Adults had conversations with students about how to use their core values to help them make positive choices in the future. The school dedicated an hour every Monday for students to spend time with Mentor Teachers. The mentors used that time to work on character education with a focus on the school’s core values,
bullying, test taking strategies, how to find a valued role in the school community, and other concepts.

The principal was the only interviewee that commented on academic achievement in response to this question. He said he saw the impact of the single gender environment in the percentage of students on honor roll. During the school quarter prior to our interview, a third of the school had made honor roll, and that was well above other schools comparable to Middle School B, according to the principal. He said the students took pride in their work which was displayed all over the school.

The third question was: What improvements in your single gender program do you believe are needed to improve student achievement as measured by state assessment test scores and state assigned school grades? The most obvious emergent theme regarding this question was the need to address the academic needs of the lowest quartile of students. The eighth graders among this group who had been at the school since sixth grade had not shown sufficient growth, specifically in reading. The principal expressed the need for additional professional development for the faculty to meet this need. Other emergent themes included making sure that all faculty were aware of formative academic data, keeping students abreast of their own academic data and helping them understand what to do to improve their academic achievement, and holding students to a high academic standard with common expectations in every classroom.

The fourth question was: How is your single gender program impacting students in character development, specifically in the areas of responsibility, respect, honesty, integrity, confidence, perseverance, courtesy, good judgment, good sportsmanship, confidence, competence, connectedness, dedication, commitment, focus, empowerment,
resilience, and concern for others? Each of the interviewees identified core values stated in the school’s creed that were emphasized at the school. It was clear that all nine core values are taught and practiced. The lead teacher said the core values were demonstrated when the boys were found, “Doing the right thing when nobody is looking.” The school was not only building confidence for student leaders who were outspoken students, but also for students who were quiet leaders making good choices. Again the vision statement resurfaced, “Molding young men of distinction who will achieve greatness.”

There are several resounding themes among the responses to all four of these questions. The single gender program at the school was positively impacting the students, according to all the interviewees. As with the interviewees at the all-girls school, the principal and teacher leaders I interviewed at the all-boys school demonstrated a strong commitment to the school, its students, and gender differentiated instructional practices. The emergent theme of character development was prevalent with an emphasis on the nine core values identified in the school’s creed, and the school’s vision statement was a driving focus of character development, as well as the Prep Scholar Profile. In addition to character development, the interviewees identified improved attendance and a low rate of disciplinary issues as areas of impact. Other emergent themes included students as leaders and increased intrinsic motivation among the students. Finally, the identification of the lowest quartile of students as an area of instructional focus was a theme that emerged during the interviews.

I asked my fifth question to the principal only. I asked: How can the design of the Annual Review of Program be improved to enable you to provide a true picture of your single gender program’s effectiveness and areas for improvement? The principal said the
document did not need to be improved, but more people should be included in providing input in order to get a true picture of the school’s effectiveness. He suggested that input be gleaned from custodians, parents, cafeteria workers, district employees who visit the campus, students, and clerical staff, in addition to the school’s administrators and teachers. He explained that input from a wider variety of stakeholders would reveal the impact of the single gender environment based upon observations of the students in action daily.

I asked the sixth question to the principal only. I asked: What suggestions do you have on how qualitative data, along with quantitative data, can be incorporated into district reports to show results of your students in single gender classes in ways that are not measured on standardized tests and other data collection mechanisms? The principal reiterated the need to include a wider variety of stakeholders who observed or interacted with his students. He also suggested that district leaders compare discipline data from his school to all the other middle schools across the district. His rationale for these suggestions was that the inclusion of more stakeholder groups and the comparison of discipline data would provide a clearer picture of the impact of the school on its students, as well as areas in need of improvement.

**Interpretation**

During this program evaluation project, I collected a variety of quantitative and qualitative data for Middle School A and Middle School B. These data sets included attendance, discipline, academic achievement, summary analysis, and anecdotal data within the ARP; as well as survey scaled items and survey free responses from perception
surveys of students, parents and guardians, and teachers; and interview data. I will interpret these data in this section.

**Middle School A**

Because this is a single gender school, it is important that the school meet the federal requirements stated in the Amendments of 2006 to Title IX, essentially demonstrating that its intent is to increase student achievement. As a single gender school, the district has established overarching objectives, and those objectives are to increase student achievement and improve discipline. All the data I have collected indicate that Middle School A is meeting these objectives. Not only has the school demonstrated increased student achievement and improved discipline among the girls enrolled in the school, but it has also demonstrated improved attendance among the girls. The school earned a state assigned school grade of A. That was a two letter grade increase over the previous year, and at a time when the state had raised the bar in its school grading formula.

Middle School A made the highest academic gains of all 44 middle schools in the district. Among all middle schools across the state, it was second in reading gains and fifth in math gains. Among over 1,600 Title I schools across the state, it was in the top 1.1% in reading gains and the top 2.5% in math gains. It was the only Title I middle school in the district to earn a state assigned grade of A. The school identified academic points of pride for 2012-2013 as follows:

a. 8% gain among 6th grade students passing the state assessment test in Reading
b. 8% gain among 6th grade students passing the state assessment test in Math
c. 16% gain among 7th grade students passing the state assessment test in Reading
d. 15% gain among 7th grade students passing the state assessment test in Math
e. 23% gain among 8th grade students passing the state assessment test in Reading
f. 14% gain among 8th grade students passing the state assessment test in Math
g. 4% gain among 8th grade students passing the state assessment test in Science
h. 4% gain among 8th grade students passing the state assessment test in Writing
i. 54.65% gain among students passing the Algebra I End of Course Exam and earning high school credit for the course

While the Annual Review of Program demonstrated that the all-girls school outperformed its co-gender counterparts across the district in attendance, discipline, and academic gains, the Likert scale survey questions addressed the affective domain. The level of agreement among teachers at Middle School A to the Likert scale survey statements was overwhelmingly positive. It is obvious that the teachers believe in the value of single gender education, and they clearly want to work at Middle School A. The only statement on the survey to which any of the teachers disagreed was #4 (My single
gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed). I noticed a pattern of an increased level of disagreement or no opinion on this particular statement among the teachers at both schools. I also noticed a similar pattern of disagreement or no opinion on the corresponding statement on the parent and guardian surveys among both schools. Some respondents included written statements with this Likert scale statement indicating that they noticed no difference between single gender classes and co-gender classes related to homework completion rates. My conclusion on this point is that single gender education at these schools has not had a significant impact on homework completion rates.

The parents who responded to the survey were nearly as enthusiastic as the teachers. They agreed at a rate of 66.7% or more on all the Likert scale statements except #4 (My student is completing homework more often than when in a mixed gender class/school) which I addressed above. They most strongly agreed with statements #1 (I believe that boys and girls learn differently) and #6 (My student has adjusted well to the single gender educational environment). A positive response to the concepts indicated in both of these statements is significant to the success of the school, as well as the success of the children both academically and emotionally.

The students at Middle School A also seemed to value the education they received in an all-girls setting. They agreed at a rate of 54.6% or more on each Likert scale question except number #2 (I am more interested and motivated to achieve in the single gender class than when in a mixed gender class). I find that to be interesting, especially when contrasted to their 71.6% rate of agreement with statement #7 (Overall, being in a
single gender class has been a positive experience for me). This will cause me to reflect and to research more thoroughly in the future on that specific point. In conversation with the lead teacher at the school, I learned that in a survey she conducted among the students, more than 80% of the girls said that they were more academically engaged at the all-girls school than in their previous co-gender school.

The responses to the open-ended survey questions demonstrated notable patterns. The teacher stakeholder group and the parent and guardian stakeholder group both expressed their perceptions that the girls had developed greater self-confidence and increased focus on academics, as well as fewer distractions at the all-girls school when compared to their previous experiences as co-gender schools. Most of the responses that indicated fewer distractions referred to those caused by the presence of boys in co-gender settings. The student stakeholder group and the teacher group indicated the positive impact of the school creed. Altogether, the responses to the open-ended questions among all three stakeholder groups indicated that the all-girls school was meeting the district’s goals for single gender programs to increase academic achievement and to improve student discipline.

The interview data indicated that the school was positively impacting its students in academic achievement, character development, attendance, and discipline. The use of the school creed as a tool to help develop character among the students was successful. The focus areas of developing confidence, competence, and connectedness were clearly stated. Identified areas of improvement include continued academic achievement with an emphasis on science.
All indicators point out that the school is undoubtedly successful. This can be attributed, in part, to the fact that the principal is an instructional leader. Also, the faculty and other staff members want to work at the all-girls school and believe in its merit. The parents are satisfied with their daughters’ experience at the school, and the girls are happy and thriving.

**Middle School B**

Middle School B is the all-boys counterpart to Middle School A, and its results are remarkably similar. The data indicate that the school has met the district’s objective of increasing student achievement, and improving discipline among the boys enrolled in the school. Middle School B ranked second only to Middle School A in academic gains among all 44 middle schools in the district. Among all middle schools across the state, it was 6<sup>th</sup> in reading gains and tied the all-girls school for 5<sup>th</sup> place in math gains. Among Title I schools across the state, more than 1,600, it was in the top 2.7% in reading gains and the top 2.5% in math gains. The school lists its academic improvements as follow:

a. 18% gain among 6th grade students passing the state assessment test in Reading

b. 14% gain among 6th grade students passing the state assessment test in Math

c. 11% gain among 7th grade students passing the state assessment test in Math

d. 7% gain among 8th grade students passing the state assessment test in Reading
e. 3% gain among 8th grade students passing the state assessment test in Math

f. 31% gain among 8th grade students passing the state assessment test in Writing

g. 7% gain among students passing the Algebra I End of Course Exam and earning high school credit for the course

h. 100% of students who took Geometry passed the End of Course Exam and earned high school credit for the course

i. The state assigned school grade increased two letter grades in one school year

j. The school is now a B school based upon the state’s school grading system

When considering the Likert scale survey statements, the teachers at Middle School B were enthusiastic on a very similar level to those at Middle School A. It is significant that 100% of the teachers at both middle schools who responded to survey question #1 agreed that boys and girls learn differently. As that is the premise upon which single gender education is based in the district, it is foundational that the administrators and teachers support that learning assumption.

The parents demonstrated a strong agreement with the Likert scale statements, indicating their satisfaction with the school and its impact on their children. Their responses indicated over 90% agreement on four of the seven statements and over 80% agreement on two of the statements. The lowest percentage of agreement was on question #4 regarding homework completion. As I mentioned in my interpretation of the
The students’ responses show that more of the boys who responded to the survey agree with each statement than those who have no opinion or disagree, except on question 2 (I am more interested and motivated to achieve in the single gender class than when in a mixed gender class). That is notable because the girls at Middle School A also had the lowest rate of agreement with that statement. The continuity between both schools on such a significant statement bears further research. The lead teacher of Middle School B indicated that the timing of the survey was crucial and influenced the boys’ responses, especially on statement 2. The survey was given during the first week of June, mere days before school was over for the year. The weariness of school and the anxiousness for summer influenced the boys’ attitudes in many ways. Additionally, the entire school had lost privileges that week that essentially eliminated House competitions. I know from my review of the literature that competition drives motivation for boys. Therefore, the lead teacher’s analysis of these data elements rings true.

The responses to the open-ended survey questions at Middle School B were remarkable in their agreement among stakeholder groups, as well as their agreement with the responses from Middle School A. These data showed a connection between the responses of the teachers at the all-boys school and those at the all-girls school with themes related to academics and to using the schools’ creeds to increase character development among students.
Similarly, responses from the parents and guardians at both schools showed connections regarding the themes of focus on academics, fewer distractions from students of the opposite sex, and academics, as well as self-confidence and the implementation of gender differentiated instructional strategies. Another emergent theme among the parents at Middle School B was the development of moral or core values. This theme reflects the school’s creed. The same theme emerged in the responses of the teachers at Middle School B, as well as the teachers and students of Middle School A.

The students’ responses at Middle School B to the open-ended survey questions indicated three dominant themes – fewer distractions by the opposite sex, stronger focus on academics, and improved academic achievement. This is significant because the students’ responses at Middle School A indicated the same three dominant themes. The students’ responses from both schools also showed a common theme related to the influence of the school creed at each school.

The interview data demonstrate that Middle School B was positively impacting its students, especially in the area of character development. It was clear that the school is focused on its vision of “Molding young men of distinction who will achieve greatness,” as well as the nine core values stated in the creed the students recite daily, and the ten traits identified in the Prep Scholar Profile. Additional areas of positive impact included attendance, discipline, and academic achievement.

The all-boys middle school is successful in every way that we measure schools. The students are thriving as evidenced by their observable levels of engagement, their discipline, attendance, and academic achievements. As in the case of the all-girls middle school, the principal at the all-boys school is an instructional leader, the faculty and other
staff members want to work there, the parents believe in the mission and vision of the school, and the boys are happy and thriving.

**Conclusion**

In conclusion, a personal observation applies here. In the past decade and a half, the state has implemented high stakes testing. Many educators have expressed their concern over the amount of time spent preparing students to pass the comprehensive assessment test at the cost of neglecting other activities that nurture and enrich students. Middle School A and Middle School B are the best, if not the only, examples I’ve seen since we began high stakes testing where the students’ needs are truly being met with fidelity while there is a strong focus on student achievement data to drive academic instruction that increases state assessment test scores. These schools are educating the whole child while meeting the state’s expectations for academic growth.
SECTION FIVE: JUDGMENT & RECOMMENDATIONS

Judgment

As I review all of my data, I find some rather clear answers to each of my research questions. I have given a great deal of consideration to my primary exploratory question 1a, “How are the Single Gender Programs impacting students in the area of character development, as indicated by the perceptions of parents, teachers, administrators, and students, themselves, via the ARP and related surveys?” I see that the utilization of a creed to drive character development and discipline has had significant impact on the students based upon the survey data and the interview data. The students seem to be able to understand various character traits, take ownership of those traits, and develop them. An interesting correlation I did not anticipate is that the use of a school or class creed is not only impacting character development and discipline, but it seems to contribute positively to academic achievement, as well.

I have reflected upon question 1b, “In what areas are the Single Gender Programs affecting student achievement, as measured by standardized test scores?” I see positive results at both single gender middle schools. The survey data and interview data demonstrate that the single gender schools have strong support from the site administration and strong buy-in from all three key stakeholder groups – students, parents and guardians, and teachers – and they are showing positive results in academic achievement. Their lists of points of pride are impressive. Their academic gains as compared to the district and the state are astonishing. Based upon the ARP data, I see student achievement gains in all the areas measured by the state assessment test including
reading, math, science, and writing. I also see student achievement gains on End of Course Exams and norm referenced tests for the two single-gender middle schools.

I have reviewed school site and district discipline data in reference to my question 1c, “How are the Single Gender Programs affecting discipline, as measured by school records?” Based upon the ARP data, survey data, and interview data, the single gender schools are outperforming their co-gender counterparts in discipline. The school personnel attribute this improved behavior to the elimination of the distractions brought on by the opposite gender, as well as the gender specific teaching strategies they implement.

The answer to question 1d is obvious. “How are the Single Gender Programs affecting student attendance, as measured by daily attendance data reported to the district?” The ARP data and interview data indicate that the students in the single gender schools outperformed their co-gender counterparts. The teacher leaders and administrators attributed the increased attendance rates, as well as increased individual student attendance reported anecdotally, to the improved sense of community created by the teachers in single gender classes. These leaders and administrators believed that a sense of community is critical in a single gender environment, and it is also achievable at a higher level with only one gender of students.

My second primary exploratory question was, “How can qualitative data, along with quantitative data, be incorporated into district reports to show results in areas that are not measured on standardized tests and other data collection mechanisms?” My work with the Manager of Evaluation and his staff has helped me to understand how to formulate qualitative survey questions. Additionally, my work involved in this program
evaluation has had a strong, positive impact on my ability to formulate survey questions. I have used Likert scale questions that can easily be quantified for evaluative and reporting purposes. I have also used open-ended questions to develop insight into the perceptions of key stakeholder groups. Additionally, I have learned how to create charts to represent the qualitative data in reports for the district and in presentations.

I have interviewed a combination of administrators and teacher leaders individually at both middle schools to answer my fourth primary exploratory question, “What do teacher leaders and administrators at Middle School A and Middle School B report as program improvements that are needed, specifically to improve student achievement as measured by state assessment test scores and state assigned school grades?” When I consider their responses to this question, I see that a clear pattern has emerged at both schools. At Middle School A, the all-girls school, they identified science as a content area of focus for the entire school. They also expressed a desire to implement STEM initiatives in concert with the current magnet theme of College Preparatory. At Middle School B, the all-boys school, they identified the lower quartile of students as a sub-group about which they are concerned and upon which they are focusing. They also expressed a need to ensure that all faculty members share a unified vision and approach to raising the level of rigor in every lesson.

I have found the information gleaned from my interviews with school administrators and teacher leaders to be very valuable. I gathered information from the interviews that the survey results did not reveal. The responses to the interview questions were insightful in every instance. They also revealed a deep respect and commitment to the single gender program at each school where I conducted interviews.
Recommendations

I recommend, with some important strategies based on my experiences working with single gender schools and classes along with the results of this study, that the district continue its implementation of single gender programs. In fact, the district should grow additional programs at the elementary level to build capacity within an academic program that is achieving positive results in attendance, discipline, academic achievement, and character development. It is important that the schools identified to house additional programs be carefully selected based upon administrative support and interest among the school community, including teachers and parents. The district has already begun this process by holding a meeting with one of the eight Area Leadership Directors to discuss the high interest level in single gender education as demonstrated by the number of families from his area who have applied to and accepted seats at the all-boys and all-girls middle schools.

I strongly recommend that the district consider initiating a single gender high school. Parents, teachers, and business partners regularly pose questions to the district regarding the possibility of offering a high school option for the students currently thriving at Middle Schools A and B. Because of the success of both middle schools, the community is demanding a high school single gender option. My recommendation is that the district allow Middle Schools A and B to grow an additional grade level each year to create an all-girls school and an all-boys school for grades 6-12.

Regarding both middle schools, I applaud the huge gains they have made in all areas of this program evaluation in their second year of operation as single gender schools. I recommend, with certain specifications, the continuation of the program. I also
recommend that the district administrators who manage the magnet lottery offer more
seats to bring both schools to a full enrollment of 600 students with 200 per grade level at
each school. I also recommend that each school send one teacher leader to the Gurian
Institute’s Summer Institute in 2014 to broaden the capacity of training in single gender
strategies at both sites. Both schools should continue the intense focus on academic rigor
and further the development of the magnet theme of college preparation.

Additionally, I recommend that the district identify two elementary magnet
schools in which to open single gender classes in 5th grade. Magnet schools have diverse
populations, and they tend to feed other magnet schools. Opening single gender programs
in magnet elementary schools would serve two purposes. First, it would enhance
attendance, discipline, student achievement, and character development based upon the
data presented in this study. Second, it would generate a larger applicant pool for middle
schools A and B, as magnet application data show a large number of applicants to those
middle schools from the elementary schools that implement single gender classes. I
recommend that the district take these steps toward developing a strong feeder
application pattern for Middle Schools A and B.

Conclusion

The breadth and depth of this Program Evaluation Project has impacted positively
my work as an educator. The refined approach to data collection has given me a much
clearer understanding of the impact of single gender education in the district in my study
and at the middle schools involved. I now understand where the strengths and weaknesses
in the programs at these schools lie and what they are.
Through the data collection process, I began to realize the burden the district was placing upon principals to collect surveys and compile information for the ARP. I have reflected deeply upon how the district can accomplish the necessary and ongoing data collection process without undue burden upon the principals. At the same time, I have reflected upon how the district can provide stronger support to all the schools involved in its single gender initiative with the time and human resources available.

As a result of my reflection, I have worked with the principals to identify a single gender lead facilitator for each school site involved in implementing a single gender program. In this role, each lead facilitator is responsible to meet monthly with the supervisor who oversees the programs for two hours as a whole group for several purposes. The group has met three times thus far, and their work has included multi-directional information sharing. That is, supervisor to lead facilitators, lead facilitators to the supervisor, and lead facilitators to each other. In this way, best practices are shared.

This group has developed plans for professional development that is differentiated for the various levels of teacher expertise in single gender education like the district has never before provided. This group is also taking responsibility for the ARP, thus relieving the principals of that responsibility. The group has identified specific members to serve on sub-committees that are working on several projects. One of the projects is the development of perception surveys for key stakeholders similar to those I evaluated in this Program Evaluation Project, except the new surveys will be delivered online, as well as on paper. Another project is the development of a tool to help teachers new to single gender education identify whether they would be more effective and more satisfied working with all-girls or all-boys.
An important benefit of this newly established group is that it affords the district an opportunity to remain more fully aware of the fidelity of the single gender program at each school site in a way that site visits do not accomplish. The lead facilitators provide the supervisor with updates on personnel changes, program events, program successes, and program challenges. They also serve as an information conduit. The most recent single gender education professional development course the district offered did not require any promotion from the Office of Single Gender Programs. The supervisor shared the details of the course with the lead facilitators, and they, in turn, shared the information with the teachers of single gender classes at their schools. Within days, the course was full.

The creation of the lead facilitator role and the implementation of the monthly group meetings has been one of the most empowering outcomes of my Program Evaluation Project. It has been a surprising, positive, unintended outcome. The Program Evaluation Project also has empowered me with knowledge about the single gender programs, deep understanding of the strengths and challenges of each single gender school, and both qualitative and quantitative data for which I have found many uses. My deeper knowledge of the district’s single gender initiative lends credibility to my work. It enhances professional relationships. My greater understanding of each single gender school’s program has strengthened relationships among district leaders, school administrators, and teacher leaders. These relationships, in turn, impact the students.

The large data sets that are living in my mind, in charts, in tables, and in presentation documents are a valuable set of tools for a variety of purposes. Some of these purposes include sharing best practices with educators from various districts and
states, informing parents who are trying to make decisions about their children’s education, and making the case for expanding the program to other schools in the district in my study and other districts in my state and other parts of the country. In fact, two additional elementary schools are preparing to implement single gender classes beginning in 2014-15 in the district in my study, and another middle school has formally requested to implement a single gender cohort in 2014-15. I have had the opportunity to share data from this Program Evaluation Project at a national conference, in professional development scenarios with peer evaluators, teacher mentors, and with the school sites involved in the evaluation. I have been asked to serve as a faculty member at the Gurian Institute’s Summer Institute to teach others about the legal requirements of public single gender education.

When I planned the research design of this Program Evaluation Project, I intended to use a combination of three types of evaluation including a compliance focus and a summative evaluation combined with a theory-driven evaluation (Patton, 2008). I feel that I have successfully implemented all three types of evaluation. The compliance focus was accomplished via the ARP. That particular type of evaluation was necessary because of the legal requirements of the program. The summative evaluation is embedded in my findings, judgments, and recommendations based upon all the data I collected. The theoretical foundation of the district-wide single gender program is based upon academic achievement when boys and girls are separated for academic purposes, along with character development and other aspects of the affective domain. I was able to connect the theory-driven evaluation to the summative evaluation using the data I collected.
As I worked on this Program Evaluation Project, I planned to define my second part of my three part dissertation based on my interviews and to select a school during the process for my Change Leadership Plan. I then considered carefully the responses to the interview questions I asked the principal and teacher leaders at Middle School B. I determined that school would be a good choice for change leadership that would continue to drive forward student achievement and character development. I decided to use the results of three questions I asked during my interview with the principal, questions #3, 5, and 6, as well as one question I asked the teacher leaders, question #3. I realized that when I interpreted these responses differently, as appropriate for the Change Leadership Plan, they created the sense of urgency that would be needed to drive that plan forward.

All in all, this Program Evaluation Project has been a very positive experience for me, and it has provided the school district in my study with information necessary to enhance program effectiveness. Through this evaluation process, I have expanded and solidified my knowledge and understanding of the current literature on single gender education. I have learned how to collect various types of data, how to analyze those data, and how to use those data. I have strengthened my professional relationships with teachers, school administrators, and district administrators in the district where I conducted the study. As a result of this program evaluation, I have developed plans and new ideas related to gender differentiated instruction in both single gender and co-gender environments that would be applicable in school districts in my state and the nation.
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APPENDIX A

INFORMED CONSENT
Administrator Interview: Individual Participant

You are being asked to participate in a research study conducted by Carla Sparks, doctoral student at National Louis University. The study is entitled The Impact of Single Gender Programs on Achievement, Attendance, Discipline, and Character: A Program Evaluation Project. The purpose of the study is to determine what impact the Single Gender Programs are having on students in the study district in one or more of the following areas: attendance, discipline, student achievement, and character development.

With your consent indicated by signing the bottom of this form in the space indicated, you will participate in an interview related to the single gender program at your school. The interview will involve approximately six questions and will last approximately 15 minutes. The interview will be tape recorded to help ensure accuracy of information collected. This recording will be kept confidential, as the researcher will use a pseudonym for you during the interview, and your identity will not be attached to the data collected during the interview.

Participation is voluntary and may be discontinued at any time without penalty. All identities, including that of the school, will be kept confidential by the researcher and will not be attached to the data. Only the researcher will have access to all interview responses. The researcher will keep all data collected for this project in a locked safe in her home. Only the researcher will have access to it. Participation in this study does not involve any physical or emotional risk to participants beyond that of everyday life. While each person is likely to not have any direct benefit from being in this research study, taking part in this study may contribute to decisions regarding professional development opportunities for teachers, instructional practices to enhance student achievement and character development, as well as expansion and/or adjustments to the program’s structure.

While the results of this study may be published or otherwise reported to scientific bodies, identities of participants will in no way be revealed. Results will be made available upon request in compliance with public records requirements, and the identities of participants will in no way be revealed.

In the event you have questions or require additional information you may contact the researcher: Carla Sparks, National Louis University doctoral student, email: csparks3@nl.edu. If you have any concerns or questions before or during participation that you feel have not been addressed by the researcher, you may contact my Dissertation Chair: Dr. Jim Schott, Distinguished Professor of Practice, EDL Program, Department of Educational Leadership, National Louis University, email: jschott@nl.edu or jimua@aol.com; or NLU’s Institutional Research Review Board: Dr. Generosa Lopez-Molina, National Louis University, 122 South Michigan Avenue, Chicago, IL 60603, (312)-261-3135; email: glopezmolina@nl.edu.

Principal Name (Print) ____________________________________________________________

Principal Signature ___________________________________________ Date ________________

Researcher Name (Print) __________________________________________________________

Researcher Signature ___________________________________________ Date ________________
APPENDIX B

INFORMED CONSENT
Academic Coach/Teacher Leader Interview: Individual Participant

You are being asked to participate in a research study conducted by Carla Sparks, doctoral student at National Louis University. The study is entitled The Impact of Single Gender Programs on Achievement, Attendance, Discipline, and Character: A Program Evaluation Project. The purpose of the study is to determine what impact the Single Gender Programs are having on students in the study district in one or more of the following areas: attendance, discipline, student achievement, and character development.

With your consent indicated by signing the bottom of this form in the space indicated, you will participate in an interview related to the single gender program at your school. The interview will involve approximately four questions and will last approximately 15 minutes. The interview will be tape recorded to help ensure accuracy of information collected. This recording will be kept confidential, as the researcher will use a pseudonym for you during the interview, and your identity will not be attached to the data collected during the interview.

Participation is voluntary and may be discontinued at any time without penalty. All identities, including that of the school, will be kept confidential by the researcher and will not be attached to the data. Only the researcher will have access to all interview responses. The researcher will keep all data collected for this project in a locked safe in her home. Only the researcher will have access to it. Participation in this study does not involve any physical or emotional risk to participants beyond that of everyday life. While each person is likely to not have any direct benefit from being in this research study, taking part in this study may contribute to decisions regarding professional development opportunities for teachers, instructional practices to enhance student achievement and character development, as well as expansion and/or adjustments to the program’s structure.

While the results of this study may be published or otherwise reported to scientific bodies, identities of participants will in no way be revealed. Results will be made available upon request in compliance with public records requirements, and the identities of participants will in no way be revealed.

In the event you have questions or require additional information you may contact the researcher: Carla Sparks, National Louis University doctoral student, email: csparks3@nl.edu. If you have any concerns or questions before or during participation that you feel have not been addressed by the researcher, you may contact my Dissertation Chair: Dr. Jim Schott, Distinguished Professor of Practice, EDL Program, Department of Educational Leadership, National Louis University, email: jschott@nl.edu or jimua@aol.com; or NLU’s Institutional Research Review Board: Dr. Generosa Lopez-Molina, National Louis University, 122 South Michigan Avenue, Chicago, IL 60603, (312)-261-3135; email: glopezmolina@nl.edu.

__________________________________________
Teacher Name (Print)

__________________________________________
Teacher Signature

__________________________________________
Date

__________________________________________
Researcher Name (Print)

__________________________________________
Researcher Signature

__________________________________________
Date
APPENDIX C

Interview Protocol for School Site Administrators

1) Do you believe that the single gender program at your school is making a positive difference in the lives of your students? If so, in what ways?

2) Please explain any impact of your single gender program on student achievement, attendance, discipline, and/or character development that is not evident in test data.

3) What improvements in your single gender program do you believe are needed to improve student achievement as measured by state assessment test scores and state assigned school grades?

4) How is your single gender program impacting students in character development, specifically in the areas of responsibility, respect, honesty, integrity, confidence, perseverance, courtesy, good judgment, good sportsmanship, confidence, competence, connectedness, dedication, commitment, focus, empowerment, resilience, and concern for others?

5) How can the Annual Review of Program be improved to enable you to provide a true picture of your single gender program’s effectiveness and areas for improvement?

6) What suggestions do you have on how to incorporate qualitative data, along with quantitative data, into district reports to show results of your students in single gender classes in ways that are not measured on standardized tests and other data collection mechanisms?
APPENDIX D

Interview Protocol for Academic Coaches and Teacher Leaders

1. Do you believe that the single gender program at your school is making a positive difference in the lives of your students? If so, in what ways?

2. Please explain any impact of your single gender program on student achievement, attendance, discipline, and/or character development that is not evident in test data.

3. What improvements in your single gender program do you believe are needed to improve student achievement as measured by state assessment test scores and state assigned school grades?

4. How is your single gender program impacting students in character development, specifically in the areas of responsibility, respect, honesty, integrity, confidence, perseverance, courtesy, good judgment, good sportsmanship, confidence, competence, connectedness, dedication, commitment, focus, empowerment, resilience, and concern for others?
APPENDIX E

Single Gender Programs
Annual Review of Program

2012-2013

This is a copy of the ARP form the school district used to collect data for School Year 2012-2013. It is the same form I will use, if I gather further data.

These data should be submitted by June 30, 2013.

Name of Person Completing Review:

Rationale for Single Gender Program as stated on the Program Creation Form:

**ARP Table 1**
Program Design Table

<table>
<thead>
<tr>
<th>School Name:</th>
<th>School Principal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>Male students only</td>
</tr>
<tr>
<td>Grade/Course</td>
<td>of Classes/Sections</td>
</tr>
<tr>
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</tbody>
</table>
Supporting data – Compare the students in Single Gender classes to others in your school and district-wide:

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Average Attendance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-wide</td>
<td></td>
</tr>
<tr>
<td>Co-gender – KG</td>
<td></td>
</tr>
<tr>
<td>All Female – KG</td>
<td></td>
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<tr>
<td>All Male – KG</td>
<td></td>
</tr>
<tr>
<td>Co-gender - Grade 1</td>
<td></td>
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<tr>
<td>All Female - Grade 1</td>
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<tr>
<td>All Male - Grade 1</td>
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<td>Co-gender - Grade 2</td>
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<td>Co-gender - Grade 3</td>
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<td>Co-gender - Grade 4</td>
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<td>All Female - Grade 4</td>
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<td>All Male - Grade 6</td>
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<td>Co-gender - Grade 7</td>
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<td>All Female - Grade 7</td>
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<td>All Male - Grade 7</td>
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<td>Co-gender - Grade 8</td>
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<td>All Female - Grade 8</td>
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<td>All Male - Grade 8</td>
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<td>Co-gender - Grade 9</td>
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<td>All Female - Grade 9</td>
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<td>All Male - Grade 9</td>
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<tr>
<td>Co-gender - Grade 10</td>
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<tr>
<td>All Female - Grade 10</td>
<td></td>
</tr>
<tr>
<td>All Male - Grade 10</td>
<td></td>
</tr>
</tbody>
</table>
Supporting data – Compare the students in Single Gender classes to others in your school and district-wide:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Number of Referrals</th>
<th>Number of In School Suspensions</th>
<th>Number of Out of School Suspensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-wide</td>
<td></td>
<td></td>
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<tr>
<td>Co-gender - KG</td>
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<td>All Female - KG</td>
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<td>Co-gender - Grade 1</td>
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<td>All Female - Grade 1</td>
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<td>All Male - Grade 1</td>
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<td>Co-gender - Grade 2</td>
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</tbody>
</table>
Student Achievement – use as many of the following data sets as applicable:

<table>
<thead>
<tr>
<th>STATE ASSESSMENT TEST</th>
<th>STATE ASSESSMENT TEST Reading Percent of Students achieving level 3 or higher</th>
<th>STATE ASSESSMENT TEST Math Percent of Students achieving level 3 or higher</th>
<th>STATE ASSESSMENT TEST Science Percent of Students achieving level 3 or higher</th>
<th>STATE ASSESSMENT TEST Writes Percent of Students achieving level 3 or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
</tr>
</tbody>
</table>

School-wide

Co-gender
Grade 3

All Female Grade 3

All Male
Grade 3

Co-gender
Grade 4

All Female Grade 4

All Male
Grade 4

Co-gender
Grade 5

All Female Grade 5

All Male
Grade 5

Co-gender
Grade 6

All Female Grade 6

All Male
Grade 6

Co-gender Grade 7

All Female Grade 7

All Male
Grade 7

Co-gender Grade 8

All Female Grade 8

All Male
Grade 8

Co-gender Grade 9

All Female Grade 9

All Male
Grade 9

Co-gender Grade 10

All Female Grade 10

All Male
Grade 10
Student Achievement – use as many of the following data sets as applicable:

<table>
<thead>
<tr>
<th>School-wide</th>
<th>Co-gender – KG</th>
<th>All Female – KG</th>
<th>All Male – KG</th>
<th>Co-gender – Grade 1</th>
<th>All Female - Grade 1</th>
<th>All Male - Grade 1</th>
<th>Co-gender - Grade 2</th>
<th>All Female - Grade 2</th>
<th>All Male -Grade 2</th>
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</thead>
<tbody>
<tr>
<td>SY 2011-12</td>
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<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
</tr>
</tbody>
</table>
Student Achievement – use as many of the following data sets as applicable:

<table>
<thead>
<tr>
<th>Formative Tests SY 2012-2013</th>
<th>Form A High Likelihood of Level 3+</th>
<th>Form B High Likelihood of Level 3+</th>
<th>Form C High Likelihood of Level 3+</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-wide</td>
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<td>Co-gender - KG</td>
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<td>Co-gender – Grade 1</td>
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<tr>
<td>All Male – Grade 10</td>
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</tr>
</tbody>
</table>
Student Achievement – use as many of the following data sets as applicable:

### ARP Table 7

<table>
<thead>
<tr>
<th>End of Course Exams</th>
<th>Course Title</th>
<th>Course Title</th>
<th>Course Title</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
<td>SY 2012-2013</td>
<td>SY 2011-12</td>
</tr>
<tr>
<td>School-wide</td>
<td>Co-gender</td>
<td>Co-gender</td>
<td>Co-gender</td>
<td>Co-gender</td>
</tr>
<tr>
<td>All Female Grade 6</td>
<td>All Female</td>
<td>All Female</td>
<td>All Female</td>
<td></td>
</tr>
<tr>
<td>All Male Grade 6</td>
<td>All Male</td>
<td>All Male</td>
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<tr>
<td>Co-gender Grade 7</td>
<td>Co-gender</td>
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<tr>
<td>All Female Grade 7</td>
<td>All Female</td>
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<tr>
<td>All Male Grade 7</td>
<td>All Male</td>
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<tr>
<td>Co-gender Grade 8</td>
<td>Co-gender</td>
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<tr>
<td>All Female Grade 8</td>
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<td>All Male Grade 8</td>
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<td>Co-gender Grade 9</td>
<td>Co-gender</td>
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<tr>
<td>All Female Grade 9</td>
<td>All Female</td>
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<td>All Male Grade 9</td>
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<tr>
<td>Co-gender Grade 10</td>
<td>All Female</td>
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<td>All Male Grade 10</td>
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</tbody>
</table>
ARP Table 8

Summary Analysis
Please write a brief summary that explains how your data relates to your educational rationale for implementing this program.

Anecdotal Data
Please describe the success of your Single Gender (SG) Program this year. Examples may include, but are not limited to:

- Percent of SG participation in Science/STEM Fair
- Character Development initiatives and results
- Number of SG students winning academic awards
- Innovative teaching strategies implemented in SG
- Parent satisfaction with SG Program
- Other evidence of success
APPENDIX F

Teacher Survey
(Elementary, Middle & High School)

This is a copy of the teacher survey form the school district used to collect data for School Year 2012-2013. It is the same form I will use, if I gather further data.

- Name of School:
- Current Position: Circle One
  - Principal
  - Assistant Principal
  - Classroom Teacher
  - Academic Coach
  - Guidance Counselor
  - Other________________________

To what extent do you agree or disagree with the following statements regarding the instruction and outcomes in your Single Gender Program?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have received sufficient training in brain research and/or single gender strategies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Students are more interested and motivated to achieve in single gender classes at my school than my previous coed students or other coed students I have observed.</td>
<td></td>
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</tr>
<tr>
<td>3. Learning activities address the needs of students better in single gender classes at my school than in coed classes.</td>
<td></td>
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</tr>
<tr>
<td>4. My single gender students are completing class assignments/homework more satisfactorily than my previous coed students or other coed students I have observed.</td>
<td></td>
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</tr>
<tr>
<td>5. My single gender students display greater self-confidence than my previous coed students or other coed students I have observed.</td>
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<tr>
<td>6. I have used at least two single gender strategies in my classroom this school year.</td>
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</tr>
<tr>
<td>7. Overall, teaching single gender class(es) has been a positive experience for me.</td>
<td></td>
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<tr>
<td>8. The use of a school/class creed has positively impacted my single gender students this year.</td>
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</tr>
</tbody>
</table>

9. What do you consider to be the greatest benefit of single gender education for the students at your school?
10. How is your single gender program impacting students in the area of character development?
11. If there were one word or phrase to describe the impact of single gender education at your school, what would it be?
APPENDIX G

Parent/Guardian Survey (Middle School)

This is a copy of the parent/guardian survey form the school district used to collect data for School Year 2012-2013. It is the same form I will use, if I gather further data.

- Name of School:
- Relationship to student: Circle One
  o Parent
  o Guardian
  o Other (Please list)_______________________________

To what extent do you agree or disagree with the following statements regarding your student’s experience in the Single Gender Program?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that boys and girls learn differently.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. My student is more interested and motivated to achieve in the single gender school than when in a mixed gender school.</td>
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<tr>
<td>3. Lessons and activities address the academic needs of my student better in single gender classes than in mixed gender classes.</td>
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<tr>
<td>4. My student is completing homework more often than when in a mixed gender school.</td>
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<tr>
<td>5. My student displays greater self-confidence in the single gender school than when in a mixed gender school.</td>
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<tr>
<td>6. My student has adjusted well to the single gender school.</td>
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<tr>
<td>7. Overall, having my student in a single gender school has been a positive experience for him/her.</td>
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</tr>
<tr>
<td>8. What do you consider to be the greatest benefit of single gender education for your student?</td>
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<tr>
<td>9. How has being in a single gender program impacted your student in the area of character development?</td>
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</tr>
</tbody>
</table>
This is a copy of the student survey form the school district used to collect data for School Year 2012-2013. It is the same form I will use, if I gather further data.

- Name of School:
- Grade level:
- Courses:
- Gender: Circle one
  - Female
  - Male

How much do you agree or disagree with the following statements regarding your experience in the Single Gender Program?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I believe that boys and girls learn differently.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I am more interested and motivated to achieve in the single gender school than when in a mixed gender school.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Lessons and activities address my academic needs better in single gender classes than in mixed gender classes.</td>
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<td></td>
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<tr>
<td>4.</td>
<td>I feel more successful in this single gender school than in a mixed gender school.</td>
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<tr>
<td>5.</td>
<td>I feel that I have greater self-confidence in this single gender school than when in a mixed gender school.</td>
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<tr>
<td>6.</td>
<td>I feel that I am better able to communicate my ideas effectively in a single gender class than in a mixed gender class.</td>
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<tr>
<td>7.</td>
<td>Overall, being in a single gender school has been a positive experience for me.</td>
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</tr>
<tr>
<td>8.</td>
<td>What about being in a single gender school has helped you the most this year?</td>
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<tr>
<td>9.</td>
<td>How has being in a single gender school helped you to become a better citizen?</td>
<td></td>
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<td></td>
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</tbody>
</table>