

Lindenwood University

Digital Commons@Lindenwood University

Dissertations

Theses & Dissertations

2-25-2022

An Investigation of Single-Sex Classrooms in an Urban, Public School Ninth Grade Academy

Vivian Johnson
Lindenwood University

Follow this and additional works at: <https://digitalcommons.lindenwood.edu/dissertations>



Part of the [Education Commons](#)

Recommended Citation

Johnson, Vivian, "An Investigation of Single-Sex Classrooms in an Urban, Public School Ninth Grade Academy" (2022). *Dissertations*. 703.

<https://digitalcommons.lindenwood.edu/dissertations/703>

This Dissertation is brought to you for free and open access by the Theses & Dissertations at Digital Commons@Lindenwood University. It has been accepted for inclusion in Dissertations by an authorized administrator of Digital Commons@Lindenwood University. For more information, please contact phuffman@lindenwood.edu.

An Investigation of Single-Sex Classrooms in an Urban, Public School
Ninth Grade Academy

by:

Vivian Johnson

A Dissertation submitted to the Education Faculty of Lindenwood University
in partial fulfillment of the requirements for the
degree of
Doctor of Education
School of Education

An Investigation of Single-Sex Classrooms in an Urban, Public School
Ninth Grade Academy

by:

Vivian Johnson

This dissertation has been approved in partial fulfillment of the requirements for the
degree of
Doctor of Education
at Lindenwood University by the School of Education

Graham Weir

Dr. Graham Weir, Dissertation Chair

02/25/2022

Date

Sherrie Wisdom

Dr. Sherrie Wisdom, Committee Member

02/25/2022

Date

Edward Haynie
Dr. Edward Haynie, Committee Member

2/25/2022
Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Vivian Denise Johnson

Signature: Vivian Denise Johnson Date: 2/25/22

Acknowledgements

First of all, I am thankful to God for the perseverance and fortitude to complete this dissertation. I also wish to express my sincere gratitude to my dissertation chair, Dr. Graham Weir; my mentor and committee member, Dr. Sherrie Wisdom; my committee member, Dr. Edward Haynie; and my mother, Dessie Exum. All of which have been an outstanding support system, and guidance through this highest educational process. In addition, I am grateful to Normandy School District, now known as Normandy Schools Collaborative, for the opportunity to conduct research in the district and make recommendations for future improvements.

Abstract

The American education system is continually in pursuit of equity, mirroring our nation's pursuit of equity for citizens and non-citizens in all areas of life, liberty and the pursuit of happiness. There should not be discrimination towards any individual on the basis of sex, race, or physical disability. A person's sex has always been a consideration within the confines of the American educational system. The question as to whether or not separating the sexes is advantageous for boys and girls to give them the opportunity to excel academically in the classroom learning environment is worth serious contemplation. Especially, when considering the plight of African American students in urban environments who need more supports in place to be on an equal footing with their Caucasian counterparts. This study proves that separation creates a more focused environment for both boys and girls to academically improve, but there must be a buy-in and commitment from all stakeholders. Separating sexes for the sake of separating without the vision, the purpose, or the fidelity of following the educational philosophy behind the process of the model, will not thrive. Normandy School District meant well, but the systems behind the model are just as important as the model itself. As educators may we remember this as we put in place and establish any educational model to improve our school systems.

Table of Contents

Abstract	ii
Table of Contents	iii
List of Tables	vi
List of Figures	viii
Chapter One: Introduction	1
Introduction.....	1
Research Site.....	12
Statement of Problem, Rationale, & Purpose	13
Hypotheses	14
Research Questions.....	15
Interviews.....	16
Observations	17
Variables:	17
Limitations:	17
Definitions of Terms.....	17
Summary	18
Chapter Two: The Literature Review	20
The History of the Educational Concept of Single-Sex Classrooms	21
Rationale Behind Implementing Single-Sex Classrooms:	28
Academics.....	28
Behavior and Attendance:.....	38
The Unique Challenges of African American Males and Male Students, and Benefits of Single-Sex Education	38
Self Esteem	43
Perspectives on Single-Sex Education.....	50
Parents’ Perspectives	50
Administrators’ Perspectives	51
Teachers’ Perspectives.....	53
Teachers Analyze Students’ Perspectives.....	54
Students’ Perspectives	56

Results from Research	59
Effects of Single-Sex Education on Girls	59
Science	59
Technology	61
Effects of Single-Sex Classes on Boys	62
Effects of Single-Sex Education in Large Urban, At-risk Public-School Setting	64
The Differing Definitions of Gender and Sex.....	65
Chapter Three: Methodology	68
Introduction.....	68
Research Hypotheses	69
Research Questions.....	70
Population (demographics).....	72
Data Collection Methodology.....	74
Quantitative Data	74
Qualitative Data	76
Data Analysis	77
Summary.....	78
Chapter Four: Results and Presentation of Data.....	79
Introduction.....	79
Results for Null Hypothesis 1:.....	79
Results for Null Hypothesis 2:.....	87
Results of Null Hypothesis 3:	87
Teacher Survey	89
Question 1	89
Summary of the Teachers' Individual Responses of Question 1	90
Question 2	91
Summary of the Teachers' Individual Responses of Question 2	92
Question 3	92
Summary of the Teachers' Individual Responses of Question 3	93
Student Survey	93
Question 1:.....	94

Question 2:	97
Question 3:	101
Question 4:	104
Question 5:	108
Question 6:	111
Question 7:	113
Administrator Interview Summary	116
Results from Observations.....	121
Organization (operating systems in place):.....	122
Student to Student Interactions (comfortable or uncomfortable) and.....	123
Teacher and Student Interactions (comfortable or uncomfortable):	123
Differentiated Instruction (gender specific):.....	124
Student Engagement (high, medium, or low):	126
Summary.....	126
Chapter Five: Discussion and Reflection.....	128
Introduction.....	128
Personal Reflection	128
Recommendations to the Program	130
Instructional and Consistent Leadership.....	132
Pedagogical Training	134
Sensitivity Training.....	137
Mentoring.....	138
Buy in from Staff, Students, and Parents	139
Positive Relationship Building	140
Recommendations for Future Research	141
Conclusion	142
References.....	143

List of Tables

Table 1. End of Course Algebra Data.....	80
Table 2. Total population descriptive statistics for test the year before single-sex classes	81
Table 3. Sample population of descriptive statistics for the test the year before single-sex classrooms	82
Table 4. Total population of descriptive statistics for the test results year of single-sex classes	84
Table 5. Sample population of descriptive statistics for the test results the year of single-sex classes	85
Table 6. Teacher Survey Question 1	89
Table 7. Teacher Survey Question 2.....	91
Table 8. Teacher Survey Question 3.....	92
Table 9. Student Survey Question 1	94
Table 10. Student Survey Question 1: Comments in Favor.....	95
Table 11. Student Survey Question 1: Comments Not in Favor.....	96
Table 12. Student Survey Question 1: Comments Indifferent.....	97
Table 13. Student Survey Question 2	97
Table 14. Student Survey Question 2: More Favorable than Ninth Grade	98
Table 15. Student Survey Question 2: More Favorable than Tenth Grade.....	99
Table 16. Student Survey Question 2: No Different than Ninth & Tenth Grades	101
Table 17. Student Survey Question 3	101
Table 18. Student Survey Question 3: Behaviors Improved.....	102
Table 19. Student Survey Question 3: Behaviors Not Improved	103
Table 20. Student Survey Question 3: No Change in Behaviors.....	104
Table 21. Student Survey Question 4	105
Table 22. Student Survey Question 4: Explaining Positive Ratings.....	106
Table 23. Student Survey Question 4: Explaining Negative Ratings	107
Table 24. Student Survey Question 4: Explaining Average Ratings	108
Table 25. Student Survey Question 5	108
Table 26. Student Survey Question 5: Explaining A Change in Behaviors	109

Table 27. Student Survey Question 5: Explaining a Lack of Change in Behaviors	110
Table 28. Student Survey Question 6	111
Table 29. Student Survey Question 6: Explaining Improvement in Grades.....	111
Table 30. Student Survey Question 6: Explaining Lack of Improvement in Grades ...	112
Table 31. Student Survey Question 7	113
Table 32. Student Survey Question 7: Explaining a Growth in Learning	114
Table 33. Student Survey Question 7: Explaining a Lack of Growth in Learning	115

List of Figures

Figure 1. Building Attendance Rate.....	87
Figure 2. Building Discipline Incidents	88

Chapter One: Introduction

Introduction

Historically an equitable education for all people in the American public school system has been a quest for many generations. The pursuit has included eliminating discrimination in public schools due to sex, race, and disability. Educational models have reformed to better serve the specific needs of all people in the United States regardless of their sex, race, or disability. A free, compulsory primary education is a basic human right determined by the United Nations. Within the borders of the United States the protection of that right is executed at the state level and is entrenched in the fourteenth amendment rights of the Constitution. Many public laws have been passed to ensure the delivery of the basic human right of a free and equal education for all Americans (“Understanding Education as a Right,” n.d., para. 1).

The oldest educational dilemma to be resolved and test the human rights issue was the educating of both boys and girls. As early as the mid-1600s a public education was required with a penalty of twenty shillings for neglect in Massachusetts. The Commonwealth of Massachusetts imitated the English educational system which educated both boys and girls. In the beginning of the American education system the priority was to educate boys. By the late 1700s both sexes were admitted to the public school. The girls could only attend within specific time frames, for example April to October, when the boys were in the fields. Even Sunday-schools included secular instruction with the religious instruction for both boys and girls (Massachusetts Passes First Education Law, n.d., p. 1).

Women were the primary educators. Elizabeth Peabody introduced the kindergarten in Boston in 1861. Many free kindergartens were financed by, the well-known philanthropist, Pauline Shaw. Grammar schools were the most important in educating the masses in Massachusetts and were open to both boys and girls under varying conditions (Beatty, 1997, p. 74).

The question of co-education was settled differently depending on the local school boards. Typically, in most towns, schools were opened to both sexes. In primary school both girls and boys were educated together, then separated or educated together in grammar school and high school depending on the community. Most educated women experienced single-sex education in higher education. The Colony of Massachusetts is the root of and representative of the education delivery model for the sexes throughout the United States. Coeducation was the norm early in the history of public education. Most schools were poor and rural, and it was more economical to educate both boys and girls together. If boys and girls could go to church together, they could learn the three Rs together (Hansot & Tyack, 1992, p. 14).

Although boys and girls were educated together early in America's history, the nineteenth century brought new questions and coined the phrase "institutional sexism" as feminists believed girls were not as prepared as boys for their future by the public school system. The major tool for implementing equal coeducation in public schools for both sexes was Title IX of the 1972 Education Amendments. The controlling provision read as follows: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance (Title IX of the

Education Amendments Act of 1972, 2017).” Documented in *No Child Left Behind, Title V, Part D, Subpart 21, Women’s Educational Equity* Title IX is implemented through special and innovative programs as stated from the document in the following:

This program provides financial assistance to enable educational agencies to meet the requirements of Title IX of the Education Amendments of 1972, and promotes educational equity for girls and women who experience multiple forms of discrimination based on gender, race, ethnic origin, limited English proficiency, disability, or age. (No Child Left Behind, 2002, p. 143).

The second educational dilemma in the quest for an equitable education for all people in America was whether or not to continue to educate black and white students separately. In the early 1950s, an historically, racial segregation was the norm across America. Although schools in a district were supposed to be equal, black schools were inferior to white schools.

The case that set the precedence was *Brown v. Board of Education*. In this case a black- third grader, Linda Brown, residing in Topeka, Kansas had to walk one mile to her black elementary school through a railroad switchyard. A white elementary school was only seven blocks away. Her father, Oliver Brown, attempted to enroll her in the white school, and she was denied. He went to the NAACP and with their help challenged segregation in the public school system. The NAACP argued that segregated schools made black students feel inferior, and they received inferior educational preparation for their future success (Landmark Supreme Court Cases).

The Federal District Court agreed that segregation had a detrimental effect on the colored children but decided to agree with the precedent of *Plessey v. Ferguson* which

allowed segregated but equal schools. Brown and the NAACP appealed to the Supreme Court on October 1, 1951, and their case was combined with cases from other states that challenged public school segregation. On May 17, 1954, Chief Justice Earl Warren read the famous, unanimous court decision:

We come then to the question presented: Does segregation of children in public schools solely on the basis of race, even though the physical facilities and other "tangible" factors may be equal, deprive the children of the minority group of equal educational opportunities? We believe that it does...We conclude that in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the laws guaranteed by the Fourteenth Amendment. (*Brown v. Board of Education of Topeka, 1954*)

School segregation was declared unconstitutional.

The third educational dilemma, in the quest for all Americans to have an equitable education, was the inclusion of Americans with disabilities into the public school system. The norm in the 1960s was to segregate and institutionalize disabled students. Institutions grew as the population grew with more school aged children being institutionalized more than ever before. In 1966 President Lyndon B. Johnson continuing the late President John F. Kennedy's work in supporting efforts to make life better for the disabled population established a permanent Committee on Mental Retardation. Institutions were investigated and held accountable. Robert Edgerton's expose on Pacific State Hospital in California,

and Burton Blatt and Fred Kaplan's photographic essay, *Christmas in Purgatory* shocked the American public and led to criticism and policy-re-evaluation (Osgood, 2005, p. 3).

A more normalized- community approach to caring for and educating the disabled was founded and applied in the late 1960s with federal aid given to states. Also, Lyndon B. Johnson signed the Elementary and Secondary Education Act opening doors for the disabled to attend public school. In spite of these two important accomplishments, a large percentage of disabled students did not attend public school. Two federal laws, the Education for All Handicapped Children Act (EAHCA or Public Law 94-142) and Individuals with Disabilities Education Act (IDEA) passed in 1975 changed this dynamic. Public Law 94-142 (PL 94-142 or EAHCA) required states to provide a "free, appropriate public education for every child between the ages 3 -21 regardless of how, or how seriously, he or she may be handicapped." IDEA required schools to provide Individualized Education Plans or special education for students with disabilities (The History of Special Education in the United States, 2014, p. 3). Finally, the American public-school systems were diverse including all American children regardless of sex, race, or disability.

Although many hurdles have been overcome to provide an equitable education to all Americans, there is still much work to be done. The state of the American public school system is in dire need of reform, yet again, as America lags behind other countries in reading, science, and math. The following outlines the rise and fall of American public education from the mid-19th century to the present. When Sputnik was launched by the Soviet Union, October 4, 1957, the United States took an aggressive approach in the delivery of science and math education. This became known as the "space race." Science

education improvements became the focus of many Federal programs making pedagogical advancements from 18th century science to 20th century science (A&E Television Networks, *The Space Race*, 2009).

Science and math education were at a peak during 1965 to 1975, which overlapped with the Civil Rights Movement, Handicapped, and Women's movements in the United States. With scientific advances and America's brightest minds; inclusive of gender, race, and the physically challenged; working together, the United States was the first country to have a man walk on the moon July 20, 1969, thus winning and gaining momentum in the "space wars," after Apollo 11 successfully landed two astronauts, Neil Armstrong, and Edwin Aldrin on the moon (A&E Television Networks, *The Space Wars*, 2018).

Neil Armstrong took his famous steps on the moon and placed an American flag in the ground, stating, "That's one small step for man, one giant leap for mankind" (p. 1). America had reached its goal set by President John F. Kennedy to land a man on the moon by the end of the 1960s (A&E Television Networks, *1969 Moon Landing*, 2018). "A decade later, the rush to reconstruct American education ended as abruptly as it had begun. When Neil Armstrong walked on the moon in 1969, it signified that the immediate job of "catching up with the Russians" had been accomplished. The Great Society programs, the war in Vietnam and other changes sent the country looking in other directions," (section C, p. 1), stated Fiske, in his New York Times article, *Education; Sputnik Recalled: Science and Math in Trouble Again* (Fiske, 1982).

Since 1975 studies performed by the National Assessment of Education Progress (NAEP), known as the nation's report card since 1969, and the International Association

for the Evaluation of Educational Achievement (IEA) founded in 1958, known for its international comparative studies, showed evidence that the United States Education System has declined since those glory days and has remained at the status quo for decades. *A Nation at Risk* authored by the National Commission of Excellence in Education presented April, 1983 during the Reagan administration shined a spotlight on how The American education system once held the dominant rank and position among other nations, but now many other industrialized nations have superseded the United States in the areas of reading, math, and science. *A Nation at Risk* saw the impending decline in the 1980s and urgently called for education reform throughout the United States (Gardner, 1983, p. 9).

The Organisation for Economic Co-operation and Development (OECD) based out of Paris has been conducting the Programme for International Student Assessment (PISA) since 2000, internationally assessing the preparedness of each participating nation's 15-year-old student population in math, science, and reading. PISA has evaluated the education systems of 92 participating countries during the course of two decades. PISA's purpose is that countries learn from each other and change their education system to reflect the best practices that promote student learning. The assessment is given every 3 years (OECD, 2018).

In 2000 the United States ranked at the midpoint out of the 28 participating countries. In reading literacy, the United States ranked 15. Finland, Canada, and New Zealand outperformed the United States. The United States performed the same as 19 other nations with a score of 504 with the OECD average being 500.

The United States ranked 17 in math performing the same as 14 other countries with a score of 493, and the average OECD score being 500. Japan, Korea, New Zealand, Finland, Australia, Canada, Switzerland, and the United Kingdom outperformed the United States in mathematics.

In science the United States ranked 14 performing the same as 14 other countries with a score of 499: the OECD average was 500. Korea, Japan, Finland, the United Kingdom, Canada, New Zealand, and Australia outperformed the United States in science (Highlights From the 2000 Program for PISA, n.d.). During the 2015 assessment with 70 countries participating, the United States still ranked near the midpoint. Analyzing the average of the reading, science, and math scores, the United States ranked 31 out of 70. The top ten performing countries were Singapore, Hong Kong, Japan, Macau, Estonia, Canada, Taiwan, Finland, South Korea, and China. Participating countries have increased since the initial test in 2000 (Program for International Student Assessment (PISA) - Trends in Student Performance: Trends in U.S. Performance, 2019).

The trend continued with the release of each PISA assessment year after year. The last PISA results were released December 3, 2019. Students in the United States as compared to the 35 other OECD members performed above the OECD average in reading (505 score points) and science (502), and below the OECD average in mathematics (478). Their scores were similar to those of students in Australia, Germany, New Zealand, Sweden and the United Kingdom in at least two of these three subjects. The trend lines of United States' mean performance in reading since 2000, mathematics since 2003 and science since 2006 are stable, with no significant improvement or decline. Beijing, Shanghai, Jiangsu and Zhejiang (China) and Singapore scored significantly

higher in reading than all other countries/economies that participated in PISA 2018. Estonia, Canada, Finland and Ireland were among the highest-performing OECD countries in reading and continue to outperform the United States. ("Program for International Student Assessment (PISA) - Welcome to PISA 2018 Results", 2019).

After the 2000 PISA, witnessing the steady decline of the American public school system, and in an attempt to reform education; George W. Bush, the 43rd president of the United States, announced the *No Child Left Behind Act of 2001* based on accountability, choice, and flexibility to improve public education and meet the needs of the “neediest children” (p. 9). Now a new group was in need of an equitable education, the poor. The fourth dilemma in a quest for all Americans to receive an equitable education is providing the poor with an equal opportunity education (*No Child Left Behind*, 2002).

With NCLB 2001, came the age of accountability in all states. In Missouri the Missouri Assessment Program (MAP) began in 2002 with targeted goals for student achievement. By 2014, the target year for NCLB, 12 years to meet the goal, all public-school students were supposed to meet or exceed the state’s proficient level in reading and math. This did not take place. The age of accountability dramatically changed the profession of teaching with educators striving to collaborate and use the best researched instructional practices, data driven instruction, and technological advancements (Klein, 2015, p. 3).

Regardless of the many changes in education, some schools were behind at the onset of NCLB 2001. Primarily those schools with the “neediest children,” are typically rural and urban schools. Urban schools have been low performing across the nation for

many years. The urban areas are characterized by students belonging to a low socioeconomic status (as President Bush termed the “neediest children”), minority groups, and parents with a low level of education. Some come from single-parent homes, with many children in one family. During these years of accountability “the neediest students” have been a group that educators have been trying to propel to the level of academic proficiency, in spite of community or home dynamics (No Child Left Behind, 2002).

Educators like Ruby Payne, Larry Bell, and Jawanza Kunjufu became famous by sharing best practices for urban schools. In addition, the research of Reeves (2005) coined the phrase “90/90/90” schools (urban schools) in his book, *Accountability in Action*, which are characterized by the following:

- 90 percent of the students are eligible for free and reduced lunch used for low-income families
- 90 percent of the students are from ethnic minorities
- 90 percent of the students met or achieved high academic standards according to academic achievement tests (Reeves, 2005, p. 186).

Ninety percent of all students meeting the achievement level is an outlier and not usually the norm for urban schools with a low- socioeconomic status, and with a student population comprised of 90% minority students. In spite of the social obstacles, student achievement is possible in the “90/90” school making it the “90/90/90” school. Some of the strategies used in these schools to make their students successful are listed in the following (Reeves, 2005, p. 187):

- A focus on academic achievement
- Clear curriculum choices

- Frequent assessments
- Data driven opportunities for improvement
- An emphasis on nonfiction writing
- Teacher collaboration
- Collaborative scoring of student work
- Identified Power standards
- Display student exemplars

This model shows that academic achievement is possible in low performing schools in areas of low socio-economic status. Reeves' (2005, 2018) research continues as many more schools across the country are classified as 90/90/90 schools. His April 16, 2018 webinar and Power point, "90 90 90 Schools Revisited," shows progress as the research expands from 135 schools studied to, now over 2000 schools studied and the conclusions remaining the same (Minority, and High Achieving Schools Succeed, n.d.).

Other factors contribute to academic achievement as well as those indicated by the 90/90/90 schools. The following: parent involvement, technology, teacher expectations, positive teacher/student relationships, and differentiated instruction are researched methods of improving academic achievement (Wong & Wong, 2018).

More recently, in the United States urban, public educators have tried many strategies to improve student achievement, one example is looping; and most recently, single-sex classrooms. No Child Left Behind 2001 brought changes and flexibility in Title IX giving public schools the choice to use single-sex education to improve student performance. Again, the question was asked, "What is this best model to provide the best education for this particular group?" Maybe the traditional model of coeducational

classes is not best or maybe it is. This research will investigate this question in the setting of a low performing, urban school (No Child Left Behind, 2002).

Research Site

The Normandy School District located in the county of St. Louis, Missouri, is considered an urban school district, even though it borders the city of St. Louis, and is a school district of St. Louis County it has the characteristics of an urban school. The Normandy School District comprised 24 small municipalities: Bellerive, Bel-Nor, Bel-Ridge, Beverly Hills, Charlack, Cool Valley, Greendale, Glen Echo Park, Hanley Hills, Hillsdale, Normandy, Northwoods, Norwood Court, Pagedale, Pasadena Hills, Pasadena Park, Pinelawn, St. John, Uplands Park, Velda City, Velda Village Hills, Vinita Park, Vinita Terrace and Wellston. Wellston merged with the Normandy School District in June 2010 when the school district was closed due to its continued low academic performance.

Normandy High School served 1,190 students during the 2009-2010 school year. The demographic break down was the following: 97.90% Black, 1.60% White, .30% Asian, .40% Hispanic, and .0% Indian, and of this total population 81.7% received free or reduced lunch. During the 2010-2011 school year, Normandy High School served 1,184 students. The demographic break down was the following: 97.70% Black, 1.30% White, .50% Asian, .40% Hispanic, and .0% Indian, and of this total population 82.5% received free or reduced lunch. The high school was a Title 1 school. The Annual Yearly Performance Goals (AYP) had not been met, and the school was on level 1 of the school improvement plan.

Normandy High School had the first two attributes of a “90/90/90 school”:

- 90 percent of the students were eligible for free and reduced lunch used for low-income families
- 90 percent of the students were from ethnic minorities

But, 90 percent of the students were not achieving at the proficiency level required by the state. In fact, the Normandy School District was one of the lowest performing school districts within the St. Louis Metropolitan area.

The Normandy School District made measurable improvements in attendance, and instruction using some of the methods of the 90/90/90 schools. The 2010 – 2011 school year, the Normandy School District employed a new method now legally allowed for public schools, implementing the use of single-sex classrooms, for the ninth-grade center to improve academic achievement.

Statement of Problem, Rationale, & Purpose

The researcher wanted to study the historical data from a time period when the Normandy School District piloted a program to run the Ninth Grade Academy with single-sex classes. The researcher wanted to discover if single-sex classes made a difference in students' academic achievement and should be considered again as Normandy Schools Collaborative (formerly Normandy School District) was again the lowest achieving school district in the state of Missouri. The problem was the low academic performance of students in the Normandy School District. To solve the problem, the high school piloted the use of single-sex classrooms to improve academic performance.

This study was necessary to determine if single-sex classrooms improved the academic performance, attendance, and the behavior of students in the Normandy School

District. This study focused on the academic achievement, attendance rate, and behavioral performance of students in the ninth-grade center and researched if there is a correlation between the use of single-sex classrooms and improvement in these students' academic performance, average daily attendance rate, and disciplinary referrals.

Hypotheses

This study was both a quantitative and qualitative study. The three hypotheses of this mixed study are the following:

Hypothesis 1: The implementation of single-sex classes will improve academic achievement (as measured by the end of course exams) between the 2010 – 2011 freshmen class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Hypothesis 2: The implementation of single-sex classes will improve the attendance rates between the 2010 –2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Hypothesis 3: The implementation of single-sex classes will improve the number of discipline referrals between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

The null hypotheses of this mixed study are the following:

Null Hypothesis 1: There is no difference in academic achievement (as measured by the end of course exams) between the 2010 – 2011 freshmen class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Null Hypothesis 2: There is no difference in attendance rates between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Null Hypothesis 3: There is no difference in the number of discipline referrals between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Research Questions

Research Question 1: What are the perceptions of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 2: What are the perceptions of teachers regarding students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 3: What are the perceptions of administrators regarding students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 4: What are the perceptions of students, who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, regarding their behavior?

Research Question 5: What are the perceptions of teachers regarding the behavior of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 6: What are the perceptions of administrators regarding the behavior of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 7: What are the perceptions of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, regarding teaching and learning?

Research Question 8: What are the perceptions of teachers regarding the teaching and learning of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 9: What are the perceptions of administrators regarding the teaching and learning of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Interviews

Personal interviews were conducted with the instructional leader which in this setting was the ninth-grade academy principal. Teacher and student surveys were given to

explore the affective domain and the personal perspectives of teachers and students participating in single-sex education within the Normandy School District.

Observations

The researcher conducted on-site observations of classes at the ninth-grade center. Narratives were written from on-site observations. The researcher checked five variables indicating whether these variables were observed or not observed as well as to specify what was observed. The five variables include: organization (operating systems in place), teacher and student interactions (comfortable or uncomfortable), student to student interactions (comfortable or uncomfortable), differentiated instruction (gender specific), and student engagement (high, medium, or low).

Variables:

The independent variable is single-sex classrooms. The dependent variables are academic improvement, average daily attendance rate, and the number of discipline referrals. Delimitations include the following: the research subjects were ninth grade students and teachers at Normandy High School. The research was conducted on the campus of Normandy High School located in Normandy, Missouri.

Limitations:

Limitations include the following: not having co-educational classes to study in the ninth-grade center to make comparisons, not having control over scheduling, and not having control over the complete honesty and the willingness of subjects.

Definitions of Terms

Single-sex classrooms: refer to class groupings of students of the same sex within a coeducational setting.

Coeducational classrooms: class groupings of both sexes within a coeducational setting.

Gender: is often used as a synonym when educators refer to single-sex education. Instead of saying single-sex classes, some say single-gender classes because the term gender is more inviting, even though, the term gender is incorrect. Gender refers to those social, cultural, and psychological aspects of being male or female in a particular social context and what a society defines as being masculine or feminine.

Sex: refers to the biological aspect of a person that makes them male or female, such as chromosomal, anatomical, reproductive, hormonal, and other physiological characteristics. Sex is ascribed, but gender is attained (Lindsey, 1990, p. 2).

Missouri Department of Elementary and Secondary Education (MoDESE):

The Department of Elementary and Secondary Education (DESE) is the administrative arm of the State Board of Education. It is primarily a service agency that works with educators, legislators, government agencies, community leaders and citizens to maintain a strong public education system.

Summary

In summary, historically generations of Americans have fought for an equitable public education regardless of sex, race, and disability. Now in the twenty first century as many reform efforts are on the way as Americans try to improve their educational system and compete globally, another group lags behind in achievement, communities with low-socioeconomic status, reflective of most urban and rural school districts. Now in this age of accountability educators in urban school districts are trying methods to improve student achievement. One of those methods approved by the government for the public-

school settings in May 2001 was the use of single-sex classrooms in a coeducational setting. Normandy School District an urban, public school implemented the use of single-sex classrooms in the ninth-grade center in hopes of improving student achievement and meeting the diverse needs of their student population. The researcher looked back at this piloted, single-sex program, which had undocumented results, to determine what impact the single –sex classroom model had on its students.

Chapter Two: The Literature Review

The lack of student achievement in urban middle schools and high schools, which serve a majority of students from a low socioeconomic status and from minority groups, is a problem that educators have pondered and grappled with for decades. The dynamics of what helps students achieve in an urban setting and overcome the achievement gap is a compelling question to educators who teach in this setting. Researchers have many answers to the question already. Parent involvement, challenging standards-based curriculum, quality teacher preparation, a school environment of high expectations, positive teacher-student relationships, data-driven instruction, and providing remedial and enrichment opportunities for students are all necessary components of a student's academic achievement (Education Watch, 1996).

One strategy that has been tested and researched more in the public-school setting is the use of single-sex classrooms to improve students' academic performance. One of the hypotheses investigated for this study was, does the use of single-sex classrooms to deliver instruction increase academic achievement? During the 2010-2011 school year, Normandy School District students were transitioning from Normandy Middle School, which had coeducational classes experienced single-sex classes at the Normandy Ninth Grade Center. This study detailed findings to chronicle if academic achievement increased due to the phenomena.

The purpose of this mixed study was to explore freshmen students' success and their teachers' success with single-sex classrooms, and both groups' perceptions of single-sex classrooms within an urban school district. The first phase was qualitative exploration of the effects on teaching and learning in a single-sex classroom setting from

the ninth-grade center at the Normandy High School, located in Normandy, Missouri. Themes from this qualitative data were analyzed and compared to themes derived from the population receiving instruction in the coeducational classroom setting from the Normandy School District.

Information for the quantitative portion of the study was collected using school data, such as discipline reports, state tests, and surveys analyzed by the researcher. The independent variable of this study is the students' participation in the single-sex classrooms and the dependent variable is overall student performance in academics, attendance, and behavior. The literature review for this chapter is organized by the following topics:

- I. History of the educational concept of single-sex classrooms
- II. Rationale for single-sex education:
 - A. Academics
 - B. Behavior and Attendance
 1. The Unique Challenges of African-American Students and Benefits of Single-Sex Education
 - C. Self- Esteem
- III. Varying perspectives of single-sex education,
- IV. Results or effects of single-sex education, and
- V. Differing definitions of gender and sex.

The History of the Educational Concept of Single-Sex Classrooms

In colonial America, boys had more opportunities for receiving an education than girls. A public education was required as early as the mid-1600s in Massachusetts. The

Commonwealth of Massachusetts imitated the English educational system, which educated both boys and girls. By the late 1700s both sexes were admitted to public schools. Girls could only attend when the boys were in the fields (Massachusetts Passes First Education Law, n.d., p. 1).

America saw a great expansion in public education during the mid-1800s. Women were the primary educators. Elizabeth Peabody introduced the kindergarten in Boston in 1861. Grammar schools were the most important in educating the masses in Massachusetts and were open to both boys and girls under varying conditions. Distinguished preparatory schools were single-sex (Beatty, 1997, p. 74).

The question of co-education was settled differently, depending on the local school boards. Typically, in most towns, schools were opened to both sexes. In primary school both girls and boys were educated together, then separated or educated together in grammar school and high school, depending on the community. Most educated women experienced single-sex education in higher education. Single-sex education was widely seen, even up to the collegiate level.

The Colony of Massachusetts is the root of and representative of the education delivery model for the sexes throughout the United States. Coeducation was the norm early in the history of public education. Most schools were poor and rural, and it was more economical to educate both boys and girls together. If boys and girls could go to church together, they could learn the three Rs together (Hansot & Tyack, 1992, p. 14).

Although boys and girls were educated together early in America's history, the 1960s and 1970s saw many single-sex classes in place to teach boys and girls different lessons in parallel subjects intended to prepare them for different roles. The 20th century

brought new questions and coined the phrase “institutional sexism,” and feminists believed girls were not as prepared as boys for their futures, by the public school system. The major tool for implementing equal coeducation in public schools for both sexes was Title IX of the 1972 Education Amendments, spearheaded by Representative Patsy Mink, which stated that a federally-funded school could not discriminate, based on sex (Title IX Enforcement Highlights, 2012; USDOE, 2020). This caused single-gender public schools to close or begin the integration of both sexes. Private and religious schools became the dominant representatives of single-gender education in the United States.

The proposal to give public schools more flexibility in allowing single-sex classrooms stems from public law, *No Child Left Behind*, signed in 2001 by President George Bush Junior. The law focused on four pillars listed below and are taken from the U.S. Department of Education (USDOE, 2017) website:

The Four Pillars of NCLB:

Pillar 1: Stronger Accountability for Results

Pillar 2: More Freedom for States and Communities

Pillar 3: Proven Education Methods

Pillar 4: More Choices for Parents. (p. 1.)

As a result of *No Child Left Behind*, more reforms and new regulations facilitating single-sex classrooms in public education were written by the Department of Education in 2006 (Cable & Spradlin, 2008, p. 1).

California was the first state in America to undertake a large-scale study to explore the implications of single-sex education in public education. Six school districts opened single-gender academies for boys and girls under the leadership of Governor Pete

Wilson, as he passed legislation and provided funding for the pilot program in the public school system in 1997. Private schools had a lot of success with single-gender education, and the public-school systems were open to explore the strategy of single-sex classrooms for academic achievement. There was little systematic research conducted in the United States until California's pilot program, which lasted three years (Datnow et al., 2001, p. 5).

Not only did America begin taking initiatives to research and implement single-sex education in the public education sector, but Canada, which borders the United States, began implementing single-gender schools within public education as early as the 1980s in Quebec, to address the achievement gap of girls in math (Demers, 2007, p. 1). Also, after the observable success of girls-only private school graduates in Canada's public and private sector, schools in Western Canada began implementing and researching single-gender academies for girls to close the achievement gap (Blair & Sanford, 1999, p. 3). In the late 1900s and early 2000s single-sex education became recognizable for benefiting the deficits in boys' education. Introduced as an intervention to address perceived educational gaps in both girls and boys, single-gender education is still an educational intervention in Canada (Demers, 2007, p. 1).

In addition, other English-speaking countries, such as Australia, the United Kingdom, Ireland, and New Zealand pursued single-sex education nationwide throughout their public-school systems during the 20th Century. The intervention of single-sex education in these countries have had different motivations related to student achievement. Whether addressing male underachievement or to promote female achievement in science, math, and technology; single-sex education was always

undertaken to improve student outcomes. Educators internationally saw single-sex education as a way to improve their students' academic achievement (Smyth, 2010, p. 49).

Previously, public school districts in the United States had to comply with the Equal Protection Clause of the federal constitution. Single-sex schools had to have an "exceedingly persuasive justification" to survive constitutional scrutiny, such as a program designed to overcome the hurdles to educational and employment opportunity faced by women or minorities would have met this standard; but, neither of the first single-sex programs that came before the Court persuaded them to maintain the schools' single-sex status (Ekpo, 2011, p. 329). The courts decided on two public single-sex cases, both in higher education.

In the first single-sex education decision, *Mississippi University for Women v. Hogan* in 1982, the Court decided against an all-female nursing school. The Court's primary reason was that the school could not continue to operate single-sex, because there was not any evidence women had been discriminated against in obtaining the necessary education or gaining access to the nursing profession. Nursing, like teaching, had been a stereotypically "female" profession, and excluding men from being admitted to the program perpetuated the stereotype that nursing was a woman's job (Simson, 2005, p. 445).

Fourteen years later in 1996, the Court decided against the all-male admissions policy at the Virginia Military Institute (VMI) in *United States v. Virginia*. There, the Court held that the State had failed to make a showing that the exclusion of women was necessary to its educational mission (Mael, 1998, p. 1).

A large number of classrooms were single sex before 1965, but over the next 30 years racial and sexual integration became the norm. The Department of Education established civil rights enforcement as one its focused pursuits with the passage of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendment of 1972, and Section 504 of the Rehabilitation Act of 1973, which prohibited discrimination based on race, sex, and disability; respectively. Affecting single-sex classes and schools was the passage of the U.S. law of 1972, Title IX, which made co-education in public school mandatory (Ekpo, 2011, p. 324).

Philadelphia had two of the oldest-operating single-sex high schools in the United States. Central High School, founded in 1838, was an all-boys' school. Girls' High School, founded in 1848, formed from Central High School's Saturday classes for teachers and interested women. These classes were the first opportunity for females in Philadelphia to acquire a higher education in a public-school setting. Girls' High School still continues to operate as a single-sex girls' high school, whereas Central High School now operates as a mixed-gender high school, after litigation based on gender equity in 1983 (Friend, 2007, p. 58).

In addition to schools complying with Title IX, single-sex educational programs also had to comply with Title IX of the Education Amendments of 1972. Title IX is a federal statute prohibiting sex discrimination in schools receiving any form of federal funding. The core provision of Title IX states that no individual shall be "excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance" (Title IX Enforcement Highlights, 2012; USDOE, 2020).

First, with respect to admissions, Title IX only applied to graduate, professional, and vocational schools, and to public undergraduate institutions that have not traditionally been single-sex. Thus, private undergraduate institutions and all elementary and secondary schools (public and private) were seemingly permitted to admit only students of one sex – as are public undergraduate schools that had traditionally done so (Brake, 1999).

One Michigan federal district court held, in the case of *Garrett v. Board of Education*, that this exception only applied to existing single-sex elementary and secondary schools, and thus should not allow the creation of new single-sex schools. Second, with respect to programs within coeducational schools, the statute exempts a few specific programs. They include Boys' and Girls' State programs; father-son or mother-daughter activities at school; and scholarship awards in beauty pageants (Brake, 1999).

Beyond the statute itself, there were administrative regulations designed to interpret and implement Title IX. Unlike the statute and the relevant Supreme Court single-sex education rulings, these regulations could be amended or erased by the relevant executive agency without Congress' approval. Accordingly, regulations could change when Administrations changed – or through the course of a single Administration; but, the changes had to take into account the rulings of the two aforementioned federal court cases.

Title IX regulations placed some restrictions on the ability to create or maintain single-sex elementary and secondary schools. The restrictions also contained rules governing the ability of schools to offer single-sex classes within coeducational institutions. The regulations stated that a public elementary or secondary school may

exclude an individual on the basis of sex only if the educational district or board makes available to him or her a “comparable” course, service, or facility. In contrast, private elementary and secondary schools may operate single-sex classes without regard to the opportunities available to the opposite sex (Cable & Spradlin, 2008).

No Child Left Behind changed the Title IX restrictions for the public-school settings (Title IX Enforcement Highlights, 2012; USDOE, 2020). According to OCR with the new amendments to *No Child Left Behind*, its goal was to

support efforts of school districts to improve educational outcomes for children and to provide public school parents with a diverse array of educational options that respond to the educational needs of their children including, but not limited to single-sex classes or academies. (Grossman, 2002, p. 2)

Rationale Behind Implementing Single-Sex Classrooms:

Academics

Advocates for single-sex classrooms give many advantages. One reason given for single-sex classrooms is that boys and girls learn differently, due to their rates of physical and intellectual development. Research established that the male brain is 10-to-15% larger than the female brain. Brain mapping shows that males have six times more the amount of gray matter than women, and females have 10 times the amount of white matter as related to intelligence. The parietal lobe is the part of the brain that is larger in males and develops four years earlier in males than in females. This lobe helps in spatial, and mathematical reasoning, skills that boys tend to perform better than girls. The left side of the brain develops about six years earlier in females and is responsible for

language and connected to verbal and writing ability, which girls tend to perform better than boys (Bonomo, 2010, p. 257).

Sensory-perception based differences are also recognizable from brain research. Studies found significant differences in the ways that boys and girls hear, see, and smell. The male eye is drawn to cooler colors, and the female eye is drawn to warmer colors. Male infants visually respond to moving objects, and female infants visually respond to faces. Females' sense of smell is one hundred thousand times more sensitive than males, and female hearing is more sensitive to higher frequencies than males.' Such differences can prove significant in determining interest and success in the classroom environment (Dalton, 2006, cited in Sax 2006).

A biological difference perceived in boys' and girls' responses is their preference for ambient temperatures in the classroom environment. Ergonomic specialists have found the ideal ambient temperature for young men is 71° F or lower, whereas 77° F is preferred by young women (Bonomo, 2010, p. 261). A physical difference in boys and girls is the organization of the autonomic nervous system in males and females. The female autonomic system is influenced more by the parasympathetic nervous system responsible for rest and digest. The male autonomic system is influenced more by the sympathetic nervous system responsible for fight or flight. These differences may affect how boys and girls react and express themselves in classroom situations. Knowledge of these differences can sway teaching strategies to enhance student success (Bonomo, 2010, p. 261).

Therefore, taking into consideration brain-based, physical, biological, and sensory differences between boys and girls, it is suggested that educators should cater to their

unique learning styles, as presented by Willis et al. (2006). Their studies researched in Australia, which implemented single-sex classes nationwide, found gender behavioral differences and related these differences to learning styles. Differences in the behavior of girls and boys have been observed and commented on for generations, until relatively recently, social expectations of girls were very different to that of boys, especially regarding education (Gill, 2004, p. 14).

Bednell (1993) noted a most damaging claim, emerging from the debate on equity in primary school education, is that ‘we must treat boys and girls the same, because they are the same’ (Bednell, 1993, p. 22). In truth, to suggest that pre-adolescent boys and girls develop in ways that are synchronous is to deny the facts of science, since many boys develop language skills, the capacity for quantitative analysis, and large and small muscle proficiency, at a developmentally different tempo from girls’ (Hawley, 1993, p. 11).

Sherman (1977) of the Women’s Research Institute of Wisconsin presented the “bent twig” hypothesis which began with the assumption that girls develop language skills earlier than boys, and talk at an earlier age than boys, and because of this earlier advantage with language, girls rely on more verbally, and socially-mediated approaches in their interactions with people and objects in their world (p. 180).

Boys, on the other hand, rely on their better-developed musculature to interact with people and objects, they move about more, a fact that contributes to their enhanced development of their spatial skills (Halpern, 1986, p. 330). The clearly differentiated outcomes of boys’ and girls’ developmental trajectories have both academic and social implications. The preferred learning style and interests of girls and boys have been

consistently noted as different: “Girls acquire a learning method involving personal relationships and imitation. Boys learn through defining a goal, restructuring the field, and applying abstract principles” (Zanders, 1993, p. 16).

Alternatively, “girls’ learning styles require more open-ended learning tasks, they are both more reflective and engage with tasks that are related to real situations” (Zanders, 1993, p. 17), whereas boys “show a preference for memorizing rules and abstract facts and express their comprehension factually” (Arnot et al., 1998, p. 42). Such evidence prompted both Sax (2005) and Halpern (1986) to suggest a need for different pedagogical approaches for girls and boys.

Girls work well in groups and like to face each other. They prefer softer voices, and enjoy lessons tied to emotions. Girls will focus on visuals in the classroom, and puzzles to promote perceptual and symbolic learning. Girls also need activities that provide opportunities for them to take calculated risk and should not be protected from physically challenging tasks to avert learned helplessness. Girls respond to bright colors, and descriptive phrases (Bonomo, 2010, p. 263).

On the other hand, boys like brevity, to be involved actively in the lesson, and competition. Provide boys with a physical outlet, otherwise their aggressiveness will show up elsewhere inappropriately. Provide large, cooler learning areas for boys. Lessons should be kinesthetic and experimental with a variety of manipulatives. Boys need close proximity to instruction to focus and hear better (Bonomo, 2010, p. 263).

In addition to different learning styles, another reason advocates support the use of single-sex classrooms is to resolve the past disadvantages (specifically in science and math) that females have had in competing with their male counterparts in higher

education and the job market, as examined by Tsolidis and Dobson (2006). Historically, women have not been as successful in the fields of math and science, and advocates believe that single-sex classrooms could resolve this problem. They believe female students would get the needed instructional attention aligned with their “learning style” to advance in science and math.

When *Girls, School and Society* was published in Australia in 1975 (Schools Commission, 1975) the link between female disadvantage and school completion rates and university entry was readily argued. Further to this, these factors were linked to employability, which in turn was linked to the significance of sex-segregated subject selection in high school. The case having been made and translated into policy and funding, the stage was set for a range of initiatives including those aimed at increasing female participation and success at school and subsequent entry into higher education. (Collins et al., 2000, Yates 1993).

The academic debates surrounding these policy initiatives reflect theoretical differences, as well as shifts in understanding, which have evolved particularly through the practice of reform within schools. Of most concern in this context are the debates related to single-sex provision and the range of assumptions, which have been at their core. The interest in girls-only provision was linked, in broad terms, to arguments about differentiated learning styles and the deleterious effect of boys on girls’ experience of schooling (Yates, 1993).

These were applied most fervently to high status subjects, which were non-traditional for girls, most particularly in the math and science areas. A commonly held view has been that girls benefit from teaching and learning strategies which emphasize

communication and cooperation, relative to boys, who are less comfortable with expressing themselves and relatively more comfortable with individualized and competitive styles of learning (Tsolidis & Dobson, 2006, pp. 213- 214).

Paralleling girls' underachievement, more recently boys' underachievement is being noted in other countries and the United States. The use of single-sex education is an educational theory that is as much incorporated into schools for boys' academic achievement as well as girls' academic achievement. This recommendation was but one from the government in the United States as, noted in *No Child Left Behind* and in Australia's nation-wide study, as noted by Hansen et al. (2004).

Debate on the issue of boys' underachievement continues in Australia and New Zealand (Martino et al., 2005, p. 237). Concerns over boys' lack of educational success are not new, but girls' out-performance of boys in more stereotypically attributed masculine subjects, such as mathematics and science (Younger et al., 2005, p. 12) indicates further complexities, which need consideration. Suggestions that girls are leaving boys behind in terms of educational performance have generated a variety of possible reasons including external faults, internal inadequacies, laddish behavior, parental influences, socio-cultural expectations and poor pupil-teacher interaction (Hansen et al., 2004, p. 20).

The Australian House of Representatives Standing Committee on Education and Training report (2002) on the inquiry into the education of boys entitled evidence of boys' under-achievement and disengagement from learning, as well as strategies being used by schools to address these issues' (Executive Summary, xv). The Report is comprehensive, offering 24 recommendations for school

communities and governments to consider, so as to better enhance the learning opportunities for boys in Australian schools. In an endeavor to bridge the achievement gap, schools have considered the issue of single-gender versus co-educational classrooms and gender-specific strategies as one of a number of possible approaches to improve the situation (Hansen et al., 2004, p. 20; Varlas, 2005).

In an effort to individualize education more, governments are considering single-sex education to meet the general learning styles of male and female students. Australia has incorporated and researched these efforts nation-wide for the last decades in public education, and the United States became open to schools on an individual basis implementing single-sex education as a strategy to improve public education during the passing of the legislation of *No Child Left Behind*. A study by the Australian Council for Education Research in 2017 found that, after accounting for socioeconomic status, students in single-sex schools did outperform their co-ed counterparts in reading and numeracy Naplan scores, between grades 3 and 7 (Ribeiro, 2019, p. 1).

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

schools provided the first real look into public single-sex schools in the United States (Faddis et al., 2008, p. 1).

As a result, the United States' most comprehensive study of single-sex education compared to coeducational education, *Early Implementation of Public Single-Sex School: Perceptions and Characteristics*, was released in 2008. The report prepared by RMC Research Corporation of Portland, Oregon, explored the 14 theoretical benefits of single-sex education, listed in the following:

Diminished strength of youth cultural values.

Emphasis on academic achievement and aspirations.

Greater degree of order and control.

Provisions of positive same sex teacher and student role models.

Reduction of sex differences in curriculum and student opportunities.

Reduction of sex bias in teacher-student interactions.

Better peer interactions (e.g., less teasing, less dominance).

Greater leadership opportunities.

Greater staff sensitivity to sex differences in learning and maturation.

More opportunities for students to pursue non-sex role stereotyped activities and aspirations.

Less sexual harassment, violence, delinquency, drugs, and predatory behavior.

Pro academic parent and student choice to attend.

More same sex bonding and community.

Greater social-emotional benefits (e.g., self-efficacy, confidence) (Faddis et al.,

2008,

p. 12).

Survey and observation data provided information on the characteristics of public single-sex schooling in the United States. The study team distributed surveys in February 2005 to principals and teachers in 19 of the 20 single-sex schools in operation during fall of 2003. In 17 of the schools, the students were predominantly non-white, and in 18 of the 19 schools the majority of the students were eligible for free-and-reduced lunch. In order to draw comparisons with coeducational schools, the team analyzed Schools and Staffing Survey (SASS) data from 1999-2000 and 2003-2004 from 150 demographically-similar schools. The team gathered qualitative data from eight single-sex schools and two coeducational schools, from site observations (Faddis et al., 2008, p. 12).

The site visitors observed academic behaviors in 164 single-sex classrooms and 45 coed classrooms during their site visits. Students in the single-sex elementary schools were more likely to complete homework than students in the coed elementary schools; but, they did not differ in engagement in academic activities. Students in single-sex middle schools were more likely to turn in their homework and more likely to be engaged in academic activities than the coeducational middle school. Students in the single-sex high school exhibited high levels of homework completion and engagement in academic activities (Faddis et al., 2008, p. 33).

Supporters of single-gender education maintain that single-sex environments allow students to learn without distractions. Girls feel free to ask questions and emerge as leaders without boys in the classroom. Teachers can differentiate lessons to focus on the competitive nature and curiosity of boys without girls in the classroom. Although national student achievement for single-sex education versus coeducational education is

mixed, most formal reports conclude there is no scientific data proving single-gender schools perform better than coeducational schools (Dodd, 2015, p. 2).

A 2014 report by the American Psychological Association (APA) found that separating genders results in little-to-no difference in student achievement, besides modest advantages in math. The APA reported, “The Effects of Single-Sex Compared with Coeducational Schooling on Students’ Performance and Attitudes: A Meta Analysis,” whose authors analyzed 184 studies, testing nearly 2 million, K-12 students from more than 20 nations. The report confirmed the 2005 U.S. Department of Education Report’s overall findings in comparing single-sex and coeducational schools that, single-sex education does not guarantee student success (Dodd, 2015, p. 2).

Nevertheless, scientific evidence does prove that the brains of boys and girls develop differently. According to the National Institute of Mental Health, the occipital lobe, the region associated with visual processing, develops faster in girls between ages 6 to 10, while that region shows the largest growth in boys after age 14. Using brain-based research has given single-sex academies academic success. Anecdotal evidence and school data suggest that single-sex education is a tool to help improve the academic achievement of students, notably African American and Hispanics, who are subgroups that lag behind their Caucasian counterparts in achievement. Nationally, only approximately 50% of black males on average graduate in four years from high school. Blacks and Hispanics also face higher rates of suspension and expulsion (Dodd, 2015, p. 2).

In the United States, white males underperform all groups in Great Britain, where single-sex education is prevalent. In the United States, African American males

underperform all groups nationally. Single-sex education is an intervention used for the population that is statistically behind every other group, African American males.

Roderick argues that black boys face unique challenges that affect their education as they transition from middle school to high school. First, black boys have the fewest resources to meet academic and social challenges. Disparities in teacher expectations, curriculum, and structural support produce significant gaps in black boys compared to their peers. Second, black boys are at risk because they experience the most dramatic decline in support and quality of relationships and school experiences as they make the move to high school. Lastly, even if they have skills and supports similar to their peers, they have fewer positive coping resources and are likely to practice negative coping mechanisms, like avoidance and withdrawal (as cited in Dodd, 2015, p. 54). Single-sex classes, academies, and learning spaces have been a response to these challenges, and single-sex education has made a difference as a strategy developed to improve academic performance outcomes and overall citizenship within the school community.

Behavior and Attendance:

The Unique Challenges of African American Males and Male Students, and Benefits of Single-Sex Education

Proponents for single-sex classrooms across the United States have gone to great lengths to provide single-sex classes for their students. Some pioneers in pursuing single-sex classes as an advantageous education methodology for instructing African-American boys followed their insights to provide this type of schooling for their students at a time when it was considered illegal to do so, encountering lawsuits from the American Civil Liberties Union (ACLU), because they saw the need for African-American males to have

black, male role models and an education more tailored to their needs (Scott, 1994, p. 1). The Detroit district opened three African-Centered schools in 1990 that implemented single-sex classes to help African American boys whose rates of suspension, absenteeism, and delinquency were the highest in the school system (Scott, 1994, p. 2). Nationally the 8.0% high school dropout rate of African American males was disproportionate to the 4.9% high school dropout rate of European-American males, but has been the trend for decades (National Center for Education Statistics, 2017, p. 19). As well, the national incarceration rate of African American males is one of the highest nationally, even though they are a minority group. The 2019 incarceration of black males was 5.7 times more the rate of white males incarcerated, according to Prison Policy Initiatives (2021) compiled data. This data has also been an ongoing trend. Overall, the incarceration rate of blacks is higher than that of their white counterparts. For example, the 2019 incarceration rate for violent offenders was 64% for both blacks and Hispanics, and 42% for whites (Prison Policy Initiative, 2021). Those who support single-sex education fundamentally believe that single-sex education is a way to support and focus on African-American boys and girls to redirect delinquent or criminal behavior and act as a safety net to propel them into academic success. Additionally, this has helped to change the derogatory statistics to a more fundamentally positive picture for many students changing their perceptions about who they believe they are and who they can become (Livingston & Nahimana, 2006, p. 213).

Advocates have argued that single-sex classes provide a better learning environment for at-risk urban African-American youth - especially the males among this population. They further claim that gender-separate schooling enhances academic

motivation and lessens behavioral problems among black students (Riordan, 1990). They further view single-sex education as offering these students an experience of genuine equality of opportunity that is unattainable in a coeducational setting (Vaught et al., 1998, p. 158). The analysis of attendance data of two inner-city schools that offered single-sex classes showed significantly higher student attendance in the same-sex classes. On average, students in the coeducational classes missed 9.4 days of school, while those in the same-sex classes missed 5.73 days of school. There were significant differences in attendance between male and female students noted. Females in either class organization had fewer absences than males in either class organization. The most notable finding related to attendance was that males in the coeducational classes missed the highest number of school days annually (13.39), while males in single-sex classes missed only 5.77 days, slightly higher than females in either class configuration. The large difference in attendance noted by boys in the coeducational and single-sex classrooms are notable. If single-sex classes promote better school attendance, as proven in the study, this trend is a positive outcome, because attendance is strongly related to school learning (Vaught et al., 1998, p. 164).

Over the past 30 years, many debates have ensued about the educating of African American males in the public school system. Although 72% of black students in America graduate from high school, upon the review of urban schools in America, 45% of black males drop out of high school (Green & Carl, 2000). One-in-four African American males is expelled from school each year, and a disproportionate number of black males are in special education and remedial reading classes (Gardner et al., 2000). The overall graduation rate for African Americans has improved, according to the National Center for

Education Statistics (2021). Currently trending at 79% for the adjusted cohort graduation rate for public school 2017-2018, African American males still have a higher drop-out rate than African American females (7.8% vs. 4.9%; NCES, 2021).

To address the public-school system's perceived inability to educate children, like African-American males, for years legislators, school boards, and the broader community have called for new curriculum and special programs, like single-sex education (Livingston & Nahimana, 2006, p. 209). Although African American males comprise only 6% of the country's population, they represent over 50% of the penal population (Kunjufu, 2001). Given the limited employment opportunities in urban America, early involvement in drug trade has led to thousands of black males in detention centers by age 13 through 15. Many black males in urban areas begin as lookouts or carriers, as early as age nine or 10, and have graduated to prison by age 18, instead of high school graduation (Livingston & Nahimana, 2006, p. 211). This is the narrative that single-sex classes and academies are trying to change, as they recruit more male teachers, particularly young, urban men of color, to teach and utilize male professionals as mentors, as early as elementary school, particularly men of color (Livingston & Nahimana, 2006, p. 213).

Yes, African American males disproportionately drop out of high school, are disproportionately incarcerated, and disproportionately recommended to special education. Although African American males are most affected, because of the high numbers indicating an over-representation in special education, males as a whole are over-represented in special education. Single-sex education classes are an intervention recommended to amend this dilemma, referred to as the Boy Factor. Since the early

1990s, numerous studies have concluded there is an over-representation of males and minorities in special education.

A study conducted in 2005 by Coutinho and Oswald analyzed the state of variation in gender disproportionality in special education and found that the male-to-female ratio is between 2 to 1 and 3.5 to 1, depending on the severity of the disability. However, for students labeled severely emotionally disordered, the ratio increases to 3.43 to 1, with Black and Hispanic students averaging 3.42 to 1 and 3.65 to 1, respectively (as cited in Couture et al., 2011, p. 255).

Three reasons are given for the disproportionate rates of males and minorities in special education. The first is due to biological factors that make boys genetically predisposed to some disorders. The second is gender bias related to the referral, classification, and placement process, which suggests higher standards for males and lower standards for females. The third is that boys tend to be more active and misbehave in the classroom, more than girls and due to boys' early social learning (Couture et al., 2011, p. 256)

Single-sex classrooms would take-into-account the biological differences in physical development and brain development of both males and females and how it impacts behavior and learning in the classroom setting, instead of ascertaining or attributing these differences to a disability, in some cases. As noted before girls and boys have innate brain differences and differences in biological functioning. The differences in hearing alone between boys and girls at an early age, may account for why it seems like boys are not paying attention, and why the teacher has to redirect boys more often, when they may not be hearing as well as their female classmates.

Also, males' eyes are wired for tracking and their attention will be drawn to moving objects that make them appear off-task. Both of these examples are typical examples of boys labeled ADHD, or emotionally/behaviorally disordered. However, single-gender programs take these differences into account when planning educational experiences for boys and girls. The movement of educators towards brain-based learning has prompted many schools to offer single-gender classrooms as a viable option to counteract unnecessary recommendations of males to special education (Couture et al., 2011, p. 257).

Self Esteem

Self-esteem, the confidence in one's own worth or abilities (Self-Esteem, n.d.), is important in the success of students as they matriculate through the K-12 education system. Students do not exist in a vacuum and are affected by negative stereotypes and assumptions the dominant culture may have about them (Livingston & Nahimana, 2006, p. 212). Self-esteem affects learning and where one derives their self-esteem, which affects learning. The juvenile, high school dropout may get their self-esteem from the streets or in the juvenile detention centers where much of their formative development has occurred. Thus, early arrests, incarceration, and prison become rights-of-passage, and school or obtaining skills for the new job market become irrelevant. There is a need for students to derive their self-esteem through healthy avenues, which is a core value of supporters of single-sex classes (Livingston & Nahimana, 2006, p. 212).

The consensus of researchers is that self-esteem can be defined as a pride in one's self, holding a good opinion of one's self; a feeling of pride in one's self, or the quality of being worthy of esteem (Silber & Tippet, 1965). Some researchers use the word self-

concept in lieu of self-esteem. The consensus among researchers is that self-concept can be defined as “the totality of a complex, organized, and dynamic system of learned beliefs, attitudes, and opinions that each person holds to be true about his or her personal existence” (Purkey, 1988, p. 1).

Having a high self-esteem has many positive effects and benefits, especially among high school students. Positive self-esteem is one of the building blocks of academic achievement and provides a firm foundation for learning. Students who feel positive about themselves have fewer sleepless nights, succumb less to the peer-pressure to conform, are less likely to use drugs and alcohol, are more persistent at difficult tasks, are happier and more sociable, and tend to perform better academically. Low self-esteem can lessen a student’s desire to learn, his or her ability to focus, and his or her willingness to take risks. High school students with a low self-esteem tend to be unhappy, less sociable, more likely to use drugs and alcohol, and are more vulnerable to depression, which are all correlated with lower academic achievement (Jabari et al., 2014, p. 39).

The relationship between single-sex classes and growth in self-esteem has been studied world-wide. A few published studies have investigated the hypothesis that girls in single-sex classes have higher self-esteem than girls in coeducational classes (Anfara & Mertens, 2008, p. 55). Cairns investigated self-esteem for 2,295 students in elementary and secondary schools in Northern Ireland. He concluded that single-sex schools provide benefits in improving self-esteem (Anfara & Mertens, 2008, p. 55). However, Foon surveyed 1,675 secondary students in private coeducational and single-sex schools in Australia and found no statistical difference in girls’ self-esteem, but reported higher self-esteem for boys attending single-sex schools (Anfara & Mertens, 2008, p. 55).

Supporters of single-sex schools and classes maintain they offer girls a “safe place” for learning. Similar arguments hold that single-sex schools allow teachers to challenge students’ gendered perceptions and enhance their self-confidence in non-traditional subjects. The evidence generated in the United States in support of these claims is largely anecdotal, with much being reported in the popular press and conference presentations (Anfara & Mertens, 2008, p. 55).

Research from abroad reports girls having more positive attitudes towards science, math, and technology, as well as a higher level of comfort in classes without boys. More generally, the research suggests that girls show personal growth through improved confidence, positive self-image, and a higher self-esteem. In single-sex classrooms, girls ask more questions. Boys also benefit from improved self-esteem and tend to ask more questions in class (Anfara & Mertens, 2008, p. 55).

According to Amy Pearson, a teacher of single-sex classes, self-esteem is likely to improve for both genders when they have an opportunity to learn in an environment conducive to their gender (as cited in *Single-Sex Schools Boost Self-Esteem*, 2021). Pearson gives examples for both girls and boys. In a culture that often emphasizes looks over intelligence, single-sex schools allow girls to relax and learn without pressure to appear a certain way. Pearson continued, society often does not encourage young girls to be technically minded, aggressive, or competitive as boys, according to the Parents League of New York. However, single-sex classes allow girls to pursue science and math, subjects often associated with males, because they experience less pressure to conform to gender norms, states a University of Illinois publication (*Single-Sex Schools Boost Self-Esteem*, 2021).

A survey of over 1,000 alumnae of all girls' schools supports the findings that women recognize social-emotional benefits of their education. These graduates reported single-sex schools contributed to their self-confidence, gave them leadership opportunities, supported their personal development, and prepared them for the transition to college (Beck et al., 2005).

There is something about adding boys to the educational mix that turns many girls into passive learners. According to a study, girls in coed classes speak up less often, interact less with the teacher, lack participation, and are more likely to be harassed by other students than girls in single-sex classes (Parker & Rennie, 2002). Take boys out of the picture, and girls are more likely to take risks they would have been too shy to take in coed classes.

Single-sex schools are associated with benefits in self-esteem. A study by Granleese and Joseph (1993) found the single predictor of self-esteem in coed schools was physical appearance. This was not the case for girls in single-sex schools where self-esteem was more likely based on academic confidence (Granleese & Joseph, 1993). Studies assert that this increased self-esteem in all-girl settings may be due to higher cognitive self-worth and more freedom and comfort in behaviors (Smith, 1996). Researcher Cary Watson sums it up, "Clearly, girls in single-sex schools exhibit a belief in their talent and potential that is measurable" (Williams, 2007, p. 13).

Single-sex schools allow boys to feel less pressure to impress the other gender. Because boys generally develop more slowly than girls do, their self-esteem might suffer if they are not academically, emotionally, or physically advanced as their female classmates. Even though boys-only schools might offer less interaction with the opposite

sex than a coed environment, boy-girl interactions might be healthier when they do interact, the International Boys' Schools Coalition reports. Because they are given an opportunity to become comfortable with their masculinity in a boys-only environment, they may appreciate and respect the natural differences between boys and girls (Single-Sex Schools Boost Self-Esteem, 2021).

Research suggests that single-sex school can have long-term positive benefits, as the U.S. Department of Education reports. These benefits improve self-esteem for both sexes. Single-sex schools can reduce teen pregnancies and drug addiction, according to the Center for Evaluation and Education Policy (Single-Sex Schools Boost Self-Esteem, 2021).

Extensive surveys taken by elementary students for the Journal of Curriculum and Teaching for the article, *Elementary Student Perspectives on Single-Gender Classes*, indicated that students had positive attitudes toward their single-gender classrooms. Most students believed that the single-sex classroom format positively impacted them in many important school dimensions such as self-confidence, motivation, self-esteem, independence, self-efficacy, attitude, and grades (Tichenor et al., 2015, p. 84).

These findings were similar to the study completed by the South Carolina Department of Education using the same survey administered to 131 elementary students in a public school that provided single-sex classes for students as well as coeducational classes. In another survey given to middle school teachers and students at Edward Hand Middle School indicated improved learning, higher self-esteem, and fewer discipline problems (Smith, 1999, p. 6). A four-year study of high school students suggests that due to the

increase in self-esteem that both sexes prefer segregation, work harder, and perform better on exams than in mixed-sex classes (Williams, 2007, p. 13).

Reflecting on African American males, the most vulnerable population in American education with the highest dropout rate, their self-esteem is affected by negative stereotypes and assumptions the dominant culture has about them. Over the years writers and scholars have noted the demonization of young Black males in American culture and the media (Kunjufu, 2001).

Images of young black males as lazy, incompetent, unstable, and violent are pervasive throughout American culture. Such negative perceptions of any individual can compromise one's self-esteem and belief in ones' self, but for African-American males at a young age experiencing such negative stereotypes may be too much of a burden as they are trying to figure out who they are, and what they want to become. These perceptions can have a profound influence and dictate how they see themselves, and what they believe they can achieve (Aston & Graves, 2018, p. 78).

For example, by the time that many young, Black males complete adolescence, they have been pulled over or stopped by the police, followed by store security, and heard locking car doors as they passed for no other reason than that they are young, Black, and feared. Adopting a counter-culture persona and engaging in criminal behavior become more likely given the negative perceptions held by the environment they have to navigate. These negative stereotypes lead to many young Black men to devalue education and school and develop a macho or hyper masculine posture (hard or thug) in an attempt to protect or define themselves (Livingston & Nahimana, 2006, p. 212).

Although young Black males are faced with a number of challenges in their community, there are strategies that have been proven to be effective in addressing the problems that many of these young men face (Kunjufu, 2015, p. 76-77). These include:

1. Teacher professional development to understand and work with urban Black male children from economically disadvantaged communities.
2. Identification and recruitment of male teachers, in particular more young, urban men of color.
3. Opportunities for early career exploration and development (internship) inside the classroom as part of the school curriculum.
4. Utilization of male professionals from the community as mentors beginning in elementary school, especially men of color.
5. Creation of multi-disciplined research centers to assess the factor associated with healthy African Americans and develop interventions to address the challenges faced by Black young males.
6. Creation of community collaboration made up of schools, churches, businesses, government, and community stakeholders to create experiences (i.e., rites of passage, job shadowing) which will enable healthy social and psychological development of African- American males.

These particular strategies can be readily and easily implemented into the structure of single-sex classes or academies' environment.

The coeducational classroom setting is not optimal for African American males due to negative stereotypes, and lower teacher expectations for these pupils characterized in many coeducational settings. Single-sex schools or classrooms serve as a more

effective vehicle for providing positive role models for both racial/ethnic minorities and females (Riordan, 1994). Role models have been deemed especially important for low-SES, urban, African American males, who frequently have few positive role models in their own homes or communities (Vaught et al., 1998, p. 160). Positive role models would help in building self-esteem as they see others that mirror their image achieving success in American society.

In summary, student self-esteem is a concern for parents and educators. Students in single-sex environments are more likely to be open to various fields of study and are less likely to be self-conscious or hesitant about trying out new areas of learning atypical for that gender. Structuring the classroom experience around this model allows the student to enjoy the learning experience more deeply. In turn students develop greater self-confidence, tackle more challenging or “out of the norm” courses of study, and engage more freely with peers and adults in classroom discussions. Finally, studies show that single-sex education encourages students to develop their own interests and take advantage of leadership opportunities regardless of their gender (Hunter & West, 1993, p. 370).

Perspectives on Single-Sex Education

Parents' Perspectives

Parents who advocated single-sex schooling felt that it encouraged harder work, whereas proponents of co-educational classes felt it was socially ‘natural’. In addition, over 75% of parents with girls at single-sex schools believed that a single-sex environment promoted self-confidence in their child. Contrastingly, only 34% of parents with daughters at mixed schools felt the same way (Clark, 2004, p. 9).

Parents responded that co-education was more natural because it reflected the wider society. Yet, if the nature of wider society itself is inequitable, then parents advocating for single-sex schools would argue that co-educational schools must logically be a significant contributor to this social problem of inequality due to a person's gender (Clark, 2004, p. 9).

A further consideration is the defense mechanism of 'coeducational parents' who may actually prefer single-sex education but are not able to afford the financial requirements of a private school education. These parents are likely to defend their own 'choice,' to support their choice to their child or children if single-sex schooling is not available to them (Clark, 2004, p. 9).

Administrators' Perspectives

According to *The New York Times* writer, Elizabeth Weil, administrators at single-sex schools report "fewer discipline issues, more parental support and higher test scores in reading, writing, and math" than their coed counterparts. Single-sex schools also reduce social and peer pressure, which has been intensified in recent years by social media. In some cases, removing the presence of boys can help girls become more vocal when engaging with peers because they no longer feel intimidated and are less self-conscious which builds their self-confidence. Likewise, an all-boys learning environment lets boys develop at their own pace, without the comparisons to girls, and helps them build confidence (Weil, 2008, p. 5)

As coordinator of school reform for Long Beach Unified School District, Kristi Kahl, opened the first public middle school in the United States to offer separate classes for boys and girls, she thought, "Some people pay a lot of money to send their children to

these kinds of schools... We thought maybe this could work in a public-school setting.” She added that she believes it is a mix of gender separation, parent commitment, and instruction that attribute to improvements (Sharpe, 2008, p. 1).”

Jill Rojas, the principal, said, “We have seen many students start to focus heavily on academics. They no longer clown or try to impress the opposite sex. Girls are more apt to answer questions aloud in class as well as ask them. Girls are learning to be more academically competitive, and boys are learning to collaborate (Sharpe, 2008, p. 1).”

The principal also noted that the increase in grade point averages for both genders was statistically significant from the previous year as a coeducational school. When asked about any specific problems in Jefferson Leadership Academies in Long Beach, Rojas responded, “Some teachers have had a hard time with their all-boy core classes, but I feel it is based somewhat on the fact that they feel more physically challenged by boys who misbehave than by girls (Sharpe, 2008, p. 1).”

When principals consider single-sex programs they have to satisfy the guidelines outlined in the 2006 version of federal regulations and engage in an intensive study of both “why” and “how” issues before implementation. A look at assessment data disaggregated by gender might indicate a gap in a particular grade. Administrators then lead teachers to also assess the situation, collect more data on class participation, and disciplinary actions (Protheroe, 2009, p. 34).

Principals then will consider options such as a single-sex program or staff professional development on differentiating instruction. Last a principal will visit single-sex programs and speak to administrators who lead single-sex programs. These steps, and questions will shape an administrator’s perceptions as to rather or not a single-sex

program is the intervention that should be utilized to meet the needs of their students (Protheroe, 2009, p. 34).

After choosing to implement a single-sex program, careful efforts to work with teachers, parents, and others involved are critical. Articulating a clear rationale, specific program goals, and adequate professional development will form more perceptions for an administrator to build a foundation for a single-sex program (Protheroe, 2009, p. 34).

Teachers' Perspectives

Teachers of all-girls classes seemed to validate the idea that girls performed better in single-sex classes. "I enjoyed seeing girls participate so much in class discussions. And, like it or not, girls seem to talk more in an all-female school. I often see a whole classroom of eighth graders sharing ideas in an animated manner," said Sharon Johnson-Cramer, who teaches history in a single-sex environment to middle school girls at Windsor School in Boston.

Johnson-Cramer continued, "...the scene I used to face daily: a coed class of 10th graders, in which boys talked, but it took the teacher's calling on girls to get them to participate (Sharpe, 2008, p. 3)."

Surveys administered to teachers of single-sex classes at Edward Hand Middle School analyzed teacher perceptions of single-sex classrooms. Edward Hand Middle School is located in an urban setting and composed of primarily Hispanic and African-American students, a large percent of lower socioeconomic status. In two of the statements, "There were less discipline problems in single-sex classes," and "I feel that the single-sex classroom fostered self-esteem growth," 90% of the teachers agreed with the statements.

In two more of the statements, “Students gained more academically in single-sex classes,” and “Overall, both male and female students benefited from the single-sex experience,” 80% of teachers agreed. In one statement, “Student performance in single-sex classes was better compared to coeducational classes,” 70% of teachers agreed. In another statement, “I related better to the students of the single-sex classes of my own gender,” 90% of teachers disagreed (Smith, 1999, p. 5).

Teachers Analyze Students’ Perspectives

Single-sex classes seem to improve the self-concept of both girls and boys. Boys and girls feel more comfortable in single-sex classrooms, according to teachers. They express themselves freely without the prior peer pressure of the opposite sex. Teachers, who teach their same –sex, seem to develop and have more of a bond with the same-sex student classes, and are able to tailor their lessons to meet the needs of their students better according to Martino and Meyenn (2002).

In discussing their perceptions of single-sex classes several teachers indicated that students appeared to feel more comfortable. Paul, for example, who had been teaching for 8 years, indicated that the boys worked well in small groups and that ‘the boys feel really comfortable in class’. He adds that ‘a very supportive environment has arisen in the classroom where if one student is having problems other students will say “oh try this way” or “have you thought about it this way”’ (Martino & Meyenn, 2002, p. 312).

Sharon, also an experienced teacher, spoke of discipline not being an issue now that the boys were absent: “Discipline is not one of the highest objectives in your lesson planning anymore. You can actually plan a lesson that’s not worked around are they going to behave themselves, rather that you want teaching outcomes and you want to do

this, and you can more easily plan a lesson that way. Which is fantastic, they (girls) are sometimes a bit slow to respond and need more prodding than what the boys do, they can be too quiet, so that's a bit of a worry." However, while noting the positive effects of not having to deal with the disruptive behavior of the boys (Francis, 2000; Parker & Rennie, 1997). Sharon is conscious of the need to encourage girls to step out of the constraints of a passive femininity (Martino & Meyenn, 2002, p. 310).

Interestingly, Drew, an older male teacher who has just completed his second year of teaching, also indicated that he was experiencing 'less behavioral problems and a greater sense of cohesion amongst the boys' with the implication being that boys are no longer distracted in the absence of girls in the classroom. There is also a sense in his use of the words 'greater sense of cohesion' that single-sex classes create the conditions for a particular form of male bonding. Several teachers also noted the increased self-esteem for both boys and girls in the single-sex classes. This is interesting given that some research has tended to draw attention to the positive effects, particularly for girls in terms of self-esteem measures (Martino & Meyenn, 2002, p. 310).

Paul, for example, highlights the freedom that the single-sex classroom environment afforded boys who were more expressive and eager to participate. He also mentions an increased level of trust, ". . . all of a sudden, the boys were apparently, or seemingly a lot more eager to put forward suggestions, put forward responses, put forward ideas, and feelings about things... They're not worried about sort of bringing that up in front of the class or coming and having a chat with me after class because they feel comfortable with that sort of trust (Martino & Meyenn, 2002, p. 312)."

This apparently transformative space for boys in the single-sex English classroom was often attributed to the absence of girls. This is made explicit by Alana who claims that the absence of girls enables the lessons to be tailored more to the boys' interests. Moreover, it also has the effect of creating a space where boys are supposedly free from girls who might perhaps, it is implied, snigger at the boys for talking about their interests in class... but they are much freer in their conversation about things that interest them. Skateboarding and things like that ... They feel freer in their environment because it's just boys, so they can talk about their interest (Martino & Meyenn, 2002, p. 309-310).

Students' Perspectives

A study, Elementary Student Perspectives on Single-Gender Classes, examined the views of elementary students single-gender education classes in a public elementary school. The school offers both single-sex classes and coeducational classes, has approximately 640 students in grades preK-5. Of the school population, approximately 62% are White, 18% are Black, 15% are Hispanic, 4% Multiracial and 1% Asian. Approximately seventy-five percent of these students are eligible for free or reduced lunch (Tichenor et al., 2015, p. 81).

Students are assigned to single-gender classes as they are to mixed -gender classes. The administration makes a great effort to balance classes with an equal mix of high performing and low performing students, as well as students with varying races, and ethnicities in both single-sex and coeducational classes. The only difference is that between the coeducational classes and single-sex classes is parents in the single-gender class have the right to "opt-in" to a single-gender classroom. Parents must give

permission for their children to be placed in a single-sex classroom (Tichenor et al., 2015, p. 81).

The survey instrument used in the study was the same developed and used by the South Carolina Department of Education's Office of Public-School Choice. The general categories in the survey addressed self-confidence, motivation, independence, attitude about school, grades, and behavior. Student in single-gender classes responded to 19 items regarding their attitudes about being in single-sex classrooms (Tichenor et al., 2015, p. 81).

The results from the survey suggest that students have positive attitudes towards their single-gender classrooms. Most students believed that the single-gender classroom format positively impacted them in many important school dimensions such as self-confidence, motivation, self-esteem, independence, self-efficacy, attitudes, and grades. These results were similar to the result found in the state of South Carolina's studies of students in single-gender classrooms. The South Carolina report states that more than 65% of the students indicated their single-gender classes increased their academic performance, and improved their attitudes (Tichenor et al., 2015, p. 84).

There were some differences found in the way boys and girls responded to certain survey items. Girls responded more positively than boys on items that indicated that girls are more open to expressing their opinions in single-gender settings. Girls are more apt to discuss and ask questions in single-sex classes. Another important finding was that 81% of the students wanted to continue in the single-gender program during the upcoming school year. This may be due to the extensive teacher training for teaching single-sex classes this school has established (Tichenor et al., 2015, p. 85).

Another study, *Student Academic Self-Concept and Perception of Classroom Environment in Single-sex and Coeducational Middle Grades Mathematics Classes*, only explored students' perceptions in math. Their comparison of girls in coed to girls in single-sex classes, and boys in coed to boys in single-sex classes indicated single-sex education did not significantly influence student mathematics self-concept or student perception of the classroom environment on the sub scale or domain level. Girls in all girls' classes and boys in all boys' classes do not have any significantly different views of their classrooms or themselves as mathematical learners than girls and boys in coeducational classes (Kombe et al., 2016, p. 273).

A survey given to 1,000 young alumnae of all-girls schools supports findings that women recognized socio-emotional benefits of their education. These graduates reported that their school contributed to their self-confidence, gave them leadership opportunities, prepared them for the transition to college, and supported their individual personal development (Williams, 2007, p. 1).

Adults reflected and described their single-sex classroom experience in the following statements, "It brought a different type of focus in the classroom, as well as, fostering an environment that encourages girls to be more vocal and participate in class." Also, "I am better prepared for the 'real world.' It made me strong and independent and gave me confidence in my intelligence and abilities." In conclusion, "My experience was liberating. I could shed all the concerns that derive from dual sex environments while in the classroom but assume my interest in a diverse social life when I chose to. It was all on my terms and that was a powerful dynamic for me" (Hunter, 2016, p. 1).

Single-sex classrooms seem to improve girls' self-concept in what has typically been considered masculine school subjects, such as science and math. The other study found no significant difference, but Kessels and Hannover (2008) explored this premise that girls in single-sex classes have a better self-concept of ability in masculine school subjects than the girls in mixed-sex classes, because gender-related self-knowledge is less accessible once the opposite sex is absent.

The study, used a quasi-experimental approach, aimed at replicating findings that female students benefit from a single-sex environment with respect to their self-concept in masculine domains. To circumvent the widely acknowledged problems associated with comparisons of non-equivalent groups in the debate about coeducational vs. single-sex schooling, students from mixed-sex comprehensive state schools were placed randomly in single-sex or mixed-sex physics classes throughout the first year of their physics lessons. They found that girls reported a significantly higher self-concept of ability in physics after having been taught physics in girls-only classes. Boys' self-concept of ability, however, was unaffected by the gender composition of their physics classes (Kessels & Hanover, 2008, p. 277).

Results from Research

Effects of Single-Sex Education on Girls

Science

According to psychologist, Robinson's study, *Single-Sex Teaching and Achievement in Science*, single-sex classrooms had positive benefits for high school girls in science (Gillibrand & Robinson, 2004). The school examinations and qualitative data did yield evidence to imply positive effects of SS teaching for some pupils. HS girls

registered gains over previous cohorts and gains over their own previous marks – and this was especially so in comparison with boys' marks in biology. Classes of HS girls were said by their teachers to have made more progress than previous cohorts and to have been more constructive and task-oriented in their classroom behavior.

HS boys did not have the same pattern with their examination results. The quantitative data showed them doing better than either of the previous cohorts in their examination results, but not better than they themselves had done in the previous year. While their marks in the physics and chemistry components were high, they did relatively poorly in biology. The qualitative comments of teachers and boys were consistent with each other; the teachers noted difficulties of keeping even HS boys on task in practicals; and the boys said that they missed the help girls typically gave in practicals.

This fits in with the research literature, and the 'service' role of girls in mixed classes was mentioned by HS girls as a reason for them not enjoying mixed-sex teaching; boys were said to be both interfering and obstructive in practicals. It can be noted that the preference for SS teaching was associated with progress and absolute scores for boys as well as girls (Gillibrand & Robinson, 2004, p. 668 – 669).

University of Missouri researcher, Friend (2006), in her research on same gender groupings in eighth grade classrooms, concurred with the findings that single-sex science classes not only have a positive effect on high school girls, but middle school girls and boys, as well; though not significantly different, she explained in the following,

The results of this analysis indicated that the means of the scores for females in the same-gender class were higher than the means of the scores for females in the mixed-gender classes for the six classroom assessments and for two of the three

science class trimester grades, though not statistically significant at the .05 level. (2006, p. 7)

The raw data for the male students indicated that the means of the scores for males in the same-gender science class were higher than the means of the scores for males in the mixed-gender classes, for classroom assessments one and two, and for the three science class trimester grades, though also not to the .05 level of statistical significance (Friend, 2006, p. 7). Data led to the conclusions that solely changing a school structure to create same-gender grouping did not produce significant differences in student science academic achievement.

Technology

Female high school students also benefited from single-sex classrooms in technology, which is considered a more masculine content area, according to a study presented by Burke and Murphy (2006). The portrait that emerges from participants' descriptions of their experiences of learning technology in the single-gender setting is one which is conducive to learning technology. Participants described their experiences of learning technology in the single-gender technology setting as one in which they were able to learn more and in which they enjoyed using the technology.

Participants described how in the single-gender setting, their computer skills grew and they learned more about computers and became more capable of using the technology. Some confided that they surprised themselves with what they learned to do with technology and others described having fun using and learning about computers and remarked that this made them eager to learn more, as well. Some perceived that the

knowledge and skills gained in the single-gender setting were more advanced and their tasks more complex.

As they were given more opportunities to use computers in the single-gender class, participants also described being able to grow and learn more in the area of technology in the single-gender setting. Participants spoke of the increase of opportunities to use the computer in this setting, as they had more chances to use different types of technology, more chances to do things that interested them, and more opportunities to try new things. Some commented that they were given more opportunities, because they were trusted to use the computer in the single-gender setting. Others found that they were encouraged to use the technology in the single-gender setting and that they were given the opportunity to explore the technology independently.

Some expressed the belief that these opportunities led them to take more risks and to be more creative and perceived that this, in turn, gave them more computer skills and more knowledge. As well, some remarked that this empowerment led to more opportunities for use of computers for the future, as more doors were now opened for them. Others expressed satisfaction with what they perceived as an increase of opportunities to discover what it was that interested them and being given the skills to further these interests in the future. (Burke & Murphy, 2006, p. 6-7). Girls seemed to feel more capable in their technology knowledge and skills in single-sex technology classes.

Effects of Single-Sex Classes on Boys

According to a study in the British Journals by Van de Gaer et al. (2009), claims are made that single-sex classes can have a negative effect on boys, and that boys actually do better in a co-educational language class setting. Their hypothesis, which stated that

girls and boys make more progress in single-sex classes and schools, cannot be sustained according to areas of their study. In their study, they found that boys make more progress for language (but not for mathematics) in co-educational classes.

The selection hypothesis cannot explain the negative effects of single-sex classes for boys. Although Harker (2000) claimed that the positive effects of single-sex schools could be attributed to their selective nature, in their study the (negative) effect persisted for the language achievement of boys after having taken into account the selective nature of the single-sex classes. During the years of the study, single-sex teaching has been a new strategy to boost the under-achievement of boys (Warrington & Younger, 2003). Other researchers, like Jackson and Smith (2000) and Warrington and Younger (2003), came to the same conclusion; namely, that boys do worse in single-sex classes than in co-educational classes (p. 339), although a plethora of studies support single-sex classes have a positive effect on both girls and boys.

Malacova explored the effect of the selective nature of single-sex schools and classes through an analysis of the United Kingdom's GCSE (General Certificate of Secondary Education provides a uniform framework for assessment) national, value-added, assessment data from 2002 – 2004. The data suggested that pupils in a selective environment achieve higher progress in single-sex schools; however, the advantage of single-sex schooling seems to decrease with increasing pupils' prior attainment (for girls) or with increasing school 'selectiveness' (for boys). There was strong evidence suggesting that pupils achieve higher progress in the independent sector compared to grammar education. On the other hand, in a non-selective environment only pupils with

lower prior attainment and those attending schools with a full range of abilities seem to benefit from single-sex education (Malacova, 2007, p. 233).

Effects of Single-Sex Education in Large Urban, At-risk Public-School Setting

In a large, urban at-risk setting, the single-sex instruction seemed to support female learning and better behavior, according to Hoffman et al. (2008). Although, according to their research, boys' behaviors were worse. Students appeared to exhibit behavior change contingent on the gender makeup of the classroom and acted according to a prescribed set of mores and behaviors.

This was particularly pronounced in the behavior of girls, who the researchers observed participating in more discussions and answering more teacher questions regularly in SSI than they did in CE instruction. The CE environment seemed to constrain female participation, whereas the SSI environment appeared to remove those constraints.

In SSI classrooms, the researchers observed boys displayed what Parker and Rennie (2002) reported as typical behavior patterns (e.g., dominating interactions with teachers). It appeared that their dominant behavior had a compounding effect, perhaps because there was a 100% concentration of boys and that a struggle for supremacy ensued. In these classes, they witnessed high levels of aggression, including physical violence, such as fighting; rude behavior; and students' sleeping. The teachers confirmed those behaviors.

In mixed-sex algebra classes, the boys' behaviors appeared more tempered, paralleling the scope of girls' involvement. Boys were less boisterous, perhaps because there were fewer of them. In any case, boys dominated the classroom culture and flow of

the class. Girls participated much less than they did in SSI and were often stifled or ignored when they tried to participate.

Teachers indicated that inappropriate behaviors were more frequent in CE classes. One teacher exclaimed, "I have more problems in mixed gender than in other classes. If you try 100% a day, single gender will perform better than mixed gender" (Parker & Rennie, 2002, p. 24). SSI seemed to provide a supportive learning environment for girls.

In the debate of single-sex-classes versus coeducational classes, educators recognize the dynamics within the classroom change for students and teachers. In some school settings single-sex instruction is beneficial for students and in other school settings it is not effective or makes a minimal difference. When using various strategies in school organization, the question is always, what is best for the students in that environment, based on the research. All efforts should be data-driven in order to deliver the best instruction for student learning and achievement.

The Differing Definitions of Gender and Sex

When discussing the incorporation of single-sex classrooms into a public, coeducational school environment, one cannot escape the term gender and sex used interchangeably as synonyms. Many educators use the term single-gender classrooms, because they feel the term is less loaded or has a more positive connotation than the term sex. However, this use of the term gender is incorrect, and shows a lack of knowledge of the difference between sex and gender. The meanings between sex and gender are clearly defined here using text from *Gender Roles: A Sociological Perspective* by Lindsey (2015).

According to Lindsey (2015),

there is much confusion associated with the usage of the terms sex and gender.

Sex is considered in light of the biological aspects of a person, involving characteristics which differentiate females and males by chromosomal, anatomical, reproductive, hormonal, and other physiological characteristics.

Gender involves those social, cultural, and psychological aspects linked to males and females through particular social context. What a given society defines as masculine or feminine is a component of gender. Given this distinction, sex is an ascribed status and gender is an achieved status. (p. 2)

Presently, gender identity awareness is understood more in American society. A person's sex may not be the same as with their gender identity. Therefore, a male may identify with the female gender, and a female may identify with the male gender. In such, cases educators would be sensitive to consider which sex the student ascribes to by considering their gender.

Currently, educators participate in professional development classes to make them aware of the differences between sex and gender. Our practices are now steeped in being aware of a student's gender identity, and that it may not be consistent with their physical make-up, and to handle this with sensitivity and acceptance as not to violate their civil rights. Lindsey (2015) states, as gender issues have become more mainstreamed in scientific research and media reports, confusion associated with the terms sex and gender has decreased (p. 4).

Torgrimsom and Minson (2005) explained the difference between sex and gender in his article, *Sex and Gender: What is the Difference?* "These words have specifically

different etymologies and meanings. In the most basic sense, sex is biologically determined and gender is culturally determined. (p. 785)

In summary, sex and gender have two different meanings. The terms are not synonyms and should not be used interchangeably. Gender is how a society (societal norms) portrays a man or a woman. For example, men wear ties and women wear dresses. This is a societal norm or portrayal of what a man or woman should or should not be (doing), conveyed in the essence of societal rules. While sex is biologically-based, referring to the sex of a person as male or female. This simply refers to the anatomical and biological differences of being male versus being female, or female versus being male.

Chapter Three: Methodology

Introduction

The purpose of this chapter is to introduce the methods of research used in the study of Normandy High School's use of single-sex classrooms in the ninth-grade center to improve student achievement. The problem is the overall low academic performance of students in the Normandy School District. At the time of the study, Normandy School District was one of the lowest performing school districts in the St. Louis Metropolitan area and the entire state of Missouri. As a possible solution, the high school piloted the use of single-sex classrooms in an effort to improve academic performance.

The Normandy School District traditionally operated as a co-educational public school system. Historically, only physical education was taught as a single-sex class. The use of single-sex classroom instruction in core classes was new to the Normandy School District and the high school. This pilot program was an attempt with many other factors to raise student achievement and differentiate instruction to meet the diverse needs of the student population.

The study was necessary to determine if single-sex classrooms improved the academic performance of students in the Normandy School District. This study focused on the academic achievement of students in the ninth-grade center, and researched if there was a correlation between the use of single-sex classrooms and improvement in the students' academic performance, school attendance, positive classroom behaviors, and self-esteem.

The three hypotheses of this mixed study focused on whether or not single-sex classes improved the overall academic performance, student school attendance, and

student behavior of students in the ninth-grade center in the Normandy School District. The independent variable was single-sex classrooms. The dependent variables were academic achievement, average daily attendance, student behavior, and self-esteem. The nine research questions focused on the perceptions of students, teachers, and administrators regarding the use of the single-sex classrooms in the ninth-grade center of the Normandy School District.

Research Hypotheses

This study was both a quantitative and qualitative study. The three hypotheses of this mixed study are the following:

Hypothesis 1: The implementation of single-sex classes will improve academic achievement (as measured by the end of course exams) between the 2010 – 2011 freshmen class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Hypothesis 2: The implementation of single-sex classes will improve the attendance rates between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Hypothesis 3: The implementation of single-sex classes will improve the number of discipline referrals between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

The null hypotheses of this mixed study are the following:

Null Hypothesis 1: There is no difference in academic achievement (as measured by the end of course exams) between the 2010 – 2011 freshmen class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Null Hypothesis 2: There is no difference in attendance rates between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Null Hypothesis 3: There is no difference in the number of discipline referrals between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Research Questions

The research questions are as follows:

Research Question 1: What are the perceptions of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 2: What are the perceptions of teachers regarding students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 3: What are the perceptions of administrators regarding students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, compared to traditional classrooms?

Research Question 4: What are the perceptions of students, who are traditionally accustomed to a co-educational school environment, when introduced to and

experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, regarding their behavior?

Research Question 5: What are the perceptions of teachers regarding the behavior of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 6: What are the perceptions of administrators regarding the behavior of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 7: What are the perceptions of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school, regarding teaching and learning?

Research Question 8: What are the perceptions of teachers regarding the teaching and learning of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Research Question 9: What are the perceptions of administrators regarding the teaching and learning of students who are traditionally accustomed to a co-educational school environment, when introduced to and experiencing single-sex classroom instruction in all of their classes, during their ninth-grade year of school?

Population (demographics)

The broader population which the Normandy School District served was an urban area with a majority of minority students who come from homes that were considered of a lower socio-economic status. There were a lot of students from single-parent households, and a number of students who were being raised by their grandparents.

The Normandy School District was located in St. Louis County. The results from the census of 2010 indicated, there were 998,954 people. The racial makeup of the county was 68.3% White (66.9% Non-Hispanic White), 35.3% African American, 0.2% Native American, 3.5% Asian (1.1% Asian Indian, 1.0% Chinese, 0.3% Filipino, 0.3% Korean, 0.3% Vietnamese, 0.1% Japanese, 0.4% Other), 0.03% Pacific Islander, 0.9% from other races, and 1.9% from two or more races, and 2.5% Hispanic or Latino (1.5% Mexican, 0.2% Puerto Rican, 0.1% Cuban, 0.8% Other) (U.S. Census Bureau, 2010).

The Normandy School District served 24 small municipalities within St. Louis County: Bellerive, Bel-Nor, Bel-Ridge, Beverly Hills, Charlack, Cool Valley, Greendale, Glen Echo Park, Hanley Hills, Hillside, Normandy, Northwoods, Norwood Court, Pagedale, Pasadena Hills, Pasadena Park, Pinelawn, St. John, Uplands Park, Velda City, Velda Village Hills, Vinita Park, Vinita Terrace and Wellston. Wellston School District merged with the Normandy School District in June 2010. As a result, there were a lot of divisions among students, because of the various communities. These divisions led to many gang-related fights within the Normandy School District. Some of these characteristics are prevalent in urban areas and add to the low academic performance of the students (Map: Normandy's 24 Municipalities, 2015).

The school population was representative of the 24 municipalities which had a majority African American population. Normandy High School served 1,190 students during the 2009-2010 school year. The demographic break down was the following: 97.90% Black, 1.60% White, .30% Asian, .40% Hispanic, and .0% Indian, and of this total population 81.7% received free or reduced lunch. During the 2010-2011 school year, Normandy High School served 1,184 students. The demographic break down was the following: 97.70% Black, 1.30% White, .50% Asian, .40% Hispanic, and .0% Indian, and of this total population 82.5% received free or reduced lunch (Normandy High School, 2010).

The high school was a Title 1 school. The idea of Title 1 was enacted in 1965 under the Elementary and Secondary Education Act. This policy committed to closing the achievement gap between low-income students and other students. The policy was rewritten in 1994 to improve fundamental goals of helping at-risk students. In order for a school to be considered a Title 1 school, 40% of the student population has to be enrolled in the free or reduced lunch program. In the Normandy School District almost 100% of students qualified for the free or reduced lunch program (Clayton School District, 2021, p. 1). The Adequate Yearly Performance Goals (AYP) had not been met, and the school was on level 1 of the school improvement plan. The population researched was the ninth-grade center student population within the Normandy School District. The ninth-grade center total student population was 268 students; 143 male students, and 125 female students (MoDESE, 2012). The sample population consisted of randomly selected ninth graders to participate in the research surveys. In addition, other related data from a sample population of ninth graders was analyzed. Also, the teachers that instructed the

single-sex classrooms were a population of value for data collection. The academy had 14 tenured teachers: seven males, and seven females. This was each teacher's first-time teaching single-sex classes.

Data Collection Methodology

Quantitative Data

Numerical data collected to answer the research questions and provide an accurate picture of the results of single-sex instruction used the following student data: attendance data taken from Sisk-12, as reported to MoDESE, discipline reports taken from Sisk-12, as reported to MoDESE; and state achievement data from the algebra end of course examination administered to ninth grade students, as reported by DESE. The 2010-2011 academic year's data was accessed, and the prior year's data, 2009-2010, was accessed for students to measure academic achievement results to make comparisons. Academic, attendance, and behavioral comparisons were made between the two ninth grade classes of 2009 –2010 (co-educational classes) and 2010 –2011 (single-sex classes) utilizing state reported data. Students and teachers were given a survey to determine their levels of satisfaction with single-sex classes, as compared to co-educational classes (Likert scale, using *Survey Monkey*). The researcher had three null hypotheses to consider. The researcher used three different data bases, End of Course Exam Scores, Building Attendance Rate Reports, and Building Discipline Incident Reports, as reported to MoDESE depicting the school year, specifically designed to prove or disprove the null hypotheses. The Building Discipline Report specifically disaggregated disciplinary data for the high school in the listed offenses: alcohol, drugs, tobacco, violent acts, weapons, and other.

Null Hypothesis 1: There is no difference in academic achievement (as measured by the end of course exams) between the 2010 –2011 freshmen class (single-sex classes) and the 2009 –2010 freshman class (coeducational classes). The first null hypothesis states that single-sex education does not improve academic achievement. The data used to test this hypothesis was the end of the year course exam given to freshman students in algebra. The researcher gathered all the students' test scores from 2010 and 2011, from MoDESE. The district has private access to individual students' test scores. The researcher accessed those test scores, with district permission, and downloaded the scores into an Excel spread sheet. The researcher employed a z -test for difference in two sample populations and the two total populations; comparing the two data sets with the z -test to determine the validity of the null hypothesis. The researcher also ran the following set of descriptive statistics: mean, standard of error, mode, standard deviation, sample variance, kurtosis, skewness, range, minimum, maximum, sum, and count. to support analysis of both sample populations and total populations.

Null Hypothesis 2: There is no difference in attendance rates between the 2010–2011 freshman class (single-sex classes) and the 2009–2010 freshman class (coeducational classes).

To analyze the second null hypothesis the researcher collected attendance data from the same state website utilized to gather data for Hypothesis 1. This information is open to the public and listed on the district report card. The district reports attendance totals to the state for the high school, middle school, and elementary schools. The researcher took the totals of the student populations and the rate of attendance for the

2009–2010 school year and the 2010–2011 school year and administered a z -test for difference to compare the two proportions.

Null Hypothesis 3: There is no difference in the number of discipline referrals between the 2010–2011 freshman class (single-sex classes) and the 2009–2010 freshman class (coeducational classes). The third null hypothesis related the thought that single-sex education does not make a difference in student behavior. The researcher collected discipline data from the state website. This information was also open to the public and listed on the district report card. The district reports disciplinary incidents describing the type of offense, type of removal, and length of removal to MoDESE for the high school, middle school, and elementary schools. The researcher took the totals from the disciplinary reports of the student populations for the 2009–2010 school year and the 2010–2011 school year and administered a z -test for difference to compare the two proportions.

Qualitative Data

The researcher conducted three on-site observations of classes at the ninth-grade center, observing all the classes on the boys' and girls' side for three hours, during each site visit. Fourteen teachers were observed, and 268 students were observed. The researcher observed the teaching methodologies for differentiated instruction, student-to-student interactions, and student-to-teacher interactions, student engagement, and any organizational processes in place to manage the learning environment. Narratives were written from on-site observations. The researcher used an instrument created by the researcher with the help of the committee chair and committee members. The researcher checked five variables indicating whether these variables were observed or not observed,

specifying what was observed. The five variables included: organization (operating systems in place), teacher and student interactions (comfortable or uncomfortable), student to student interactions (comfortable or uncomfortable), differentiated instruction (gender specific), and student engagement (high, medium, or low).

A personal interview was conducted with the instructional leader, which in this academic setting was the principal. Teacher and student surveys were given to all academy teachers and to all 10th grade students that attended the ninth-grade academy, to determine potential affective domain insights, analysis, and personal perspectives of teachers and students about single-sex education. The student surveys were administered by the grade-level counselor in the students' social studies classes at the end of first semester. The teacher surveys consisted of three questions sent through district email, which teachers accessed online through *Survey Monkey*.

Data Analysis

Data were presented and interpreted through descriptive statistics from the sample population and total population. Raw scores, percentiles, means, mediums, and modes were presented through charts. The z -test for difference was applied, and the analysis displayed the positive or negative relationship between single-sex classes and the three dependent variables in a numerical chart showing the results of improvement or unimproved attendance, academic achievement, and student behavior. Observations, personal interviews, and surveys were interpreted and analyzed for the prevailing themes, self-esteem, and personal perspectives.

Summary

This was a mixed-method study that used a variety of data such as surveys, observations, attendance records, behavior reports, and state student achievement data in order to determine the effect of single-sex classes in a co-educational, urban environment on academic achievement, attendance, positive classroom behavior, and student self-esteem.

Chapter Four: Results and Presentation of Data

Introduction

This chapter will explain findings from the data analysis of the researcher's created instruments, state assessment data, attendance data, and behavior data for the ninth-grade academy. The three null hypotheses will be rejected or not, and validated through the critical z -test. The researcher will present both quantitative and qualitative descriptive analysis. Qualitative findings will be presented, for each qualitative research question. Then qualitative findings will be presented to answer the research questions from an affective perspective. Lastly, a summary will conclude the chapter. The research question encompasses the factors to investigate perspectives of and effects of single-sex classrooms on students, teachers, and administrators, as well as the correlation to school achievement data, attendance data, and behavior data. The researcher will determine and present the perceptions, impact, and experiences of ninth grade single-sex classrooms for students, teachers, and administrators in the Normandy School District.

The null hypotheses and null hypotheses' results of this mixed study are the following:

Results for Null Hypothesis 1:

Null Hypothesis 1: There is no difference in academic achievement (as measured by the end of course exams) between the 2010–2011 freshmen class (single-sex classes) and the 2009–2010 freshman class (coeducational classes).

The researcher gathered results from the algebra end-of-course exam, which at the time was the only state data collected during the freshman year of high school. Thirty students were randomly selected for the sample group from both the 2011 and 2010

populations of students. The researcher figured the descriptive statistics for the total population and descriptive statistics for the sample population. The researcher completed a two-tailed z -test for difference in the two mean scores. A significant difference was found between the mean score of 192.93 for the year the students in the single-sex classes took the algebra end of course exam in 2011 and the mean score of 180.27, when the students who were in mixed-sex classes took the end of course exam in 2010. The alternative hypothesis is supported, and the null hypothesis is rejected ($z=2.839$). Single-sex classes did improve the test scores.

Table 1

End of Course Algebra Data

z-test for difference in means
two-tailed test

z-Test: Two Sample for Means		
	2011	2010
Mean	192.9333333	180.2666667
Known Variance	305.16	291.92
Observations	30	30
Hypothesized Mean Difference	0	
z	2.839270088	
$P(Z \leq z)$ two-tail	0.004521687	
z Critical two-tail	1.959963985	

Table 2

Total population descriptive statistics for test the year before single-sex classes

<i>172</i>	
Mean	181.3534884
Standard Error	0.947745066
Median	182
Mode	177
Standard Deviation	13.89667056
Sample Variance	193.1174527
Kurtosis	0.441441558
Skewness	0.20165754
Range	83
Minimum	144
Maximum	227
Sum	38991
Count	215

The above table, Table 2, provides summary statistics of the algebra end-of-course exam scores for the total population of students before the single-sex educational model was instituted for the Ninth Grade Center. The total number of variables in the data set, or count, was 215. The minimum, or smallest, number within the data was a test score of 144 (Below-Basic) and the largest number, or maximum test score was 227 (Advanced). The range, or difference, between the maximum and minimum test scores was 83. The sum of all values in the data set was 38991.

Next, the analysis of the central tendency; the mean, mode, and medium are given in the following statements. The most frequent test score, or mode, was 177 which was the cut off score for Basic. The 2010 and 2011 Algebra 1 achievement levels were the following: Advanced (250-225), Proficient (224-200), Basic (199-177), and Below-Basic

(176-100). The average score or mean was 181.35 (Basic). The middle value or median was 182 (Basic).

The standard error, 0.947, was lower than the sample population standard error; meaning the sample means are closely distributed around the population mean, and that this sample is representative of the population. A high sample variance, 193.117, shows the scores in the data set are far from the mean with a wide distribution. The high standard deviation, 13.896, also indicates the data is spread out. The skewness and kurtosis are both close to 0 and in between 1 and -1, showing a normal distribution of the variables or scores.

Table 3

Sample population of descriptive statistics for the test the year before single-sex classrooms

Mean	180.2666667
Standard Error	3.119436043
Median	179
Mode	169
Standard Deviation	17.08585487
Sample Variance	291.9264368
Kurtosis	0.18387092
Skewness	-0.128198652
Range	73
Minimum	144
Maximum	217
Sum	5408
Count	30

The above table, Table 3, provides summary statistics of the algebra end-of-course exam scores for the sample population of students before the single-sex educational model was instituted for the Ninth Grade Center. The total number of variables in the data set or count was 30. The minimum or smallest number within the data was a test score of 144 (Below-Basic) and the largest number or maximum test score was 217 (Proficient). The range or difference between the maximum and minimum test scores was 73. The sum of all values in the data set was 5408.

Next, the analysis of the central tendency; the mean, mode, and median are given in the following statements. The most frequent test score or mode was 169 which was Below Basic. The 2010 and 2011 Algebra 1 achievement levels were the following: Advanced (250-225), Proficient (224-200), Basic (199-177), and Below-Basic (176-100). The average score or mean was 180.26 (Basic). The middle value or median was 179 (Basic).

The standard error, 3.12, was higher than the total population standard error; meaning the sample means are widely spread around the population mean, and that this sample may not closely represent the population. A high sample variance, 291.93, shows the scores in the data set are far from the mean with a wide distribution. The high standard deviation, 17.09, also indicates the data is spread out. The kurtosis, 0.1839, was close to 0 and in between 1 and -1, showing that the distribution is neither too flat or too peaked. A negative skewness, -0.128, indicates the data set is skewed to the left and not a normally distributed curve.

Table 4

Total population of descriptive statistics for the test results year of single-sex classes

<i>207</i>	
Mean	183.0508021
Standard Error	0.783040707
Median	183
Mode	183
Standard Deviation	15.14328657
Sample Variance	229.319128
Kurtosis	0.237749252
Skewness	0.42631288
Range	92
Minimum	147
Maximum	239
Sum	68461
Count	374

The above table, Table 4, provides summary statistics of the algebra end-of-course exam scores for the total population of students after the single-sex educational model was instituted for the Ninth Grade Center. The total number of variables in the data set or count was 374. The minimum or smallest number within the data was a test score of 147 (Below-Basic) and the largest number or maximum test score was 239 (Advanced). The range or difference between the maximum and minimum test scores was 92. The sum of all values in the data set was 68461.

Next, the analysis of the central tendency; the mean, mode, and medium are given in the following statements. The most frequent test score or mode was 183 which was Basic. The 2010 and 2011 Algebra 1 achievement levels were the following: Advanced (250-225), Proficient (224-200), Basic (199-177), and Below-Basic (176-100). The

average score or mean was 183.05 (Basic). The middle value or median was also 183 (Basic). The mode, mean, and median were the same value, 183 (Basic).

The standard error, 0.7830, was lower than the sample population standard error; meaning the sample means are closely distributed around the population mean, and that this sample is representative of the population. A high sample variance, 229.32, shows the scores in the data set are far from the mean with a wide distribution. The high standard deviation, 15.14, also indicates the data is spread out. The skewness and kurtosis are both close to 0 and in between 1 and -1, showing a normal distribution of the variables or scores.

Table 5

Sample population of descriptive statistics for the test results the year of single-sex classes

Mean	192.9333333
Standard Error	3.189398146
Median	193
Mode	204
Standard Deviation	17.4690531
Sample Variance	305.1678161
Kurtosis	0.220684509
Skewness	0.507622587
Range	75
Minimum	164
Maximum	239
Sum	5788
Count	30

The above table, Table 5, provides summary statistics of the algebra end-of-course exam scores for a sample population of students after the single-sex educational model was instituted for the Ninth Grade Center. The total number of variables in the data set or count was 30. The minimum or smallest number within the data was a test score of 164 (Below-Basic) and the largest number or maximum test score was 239 (Advanced). The range or difference between the maximum and minimum test scores was 75. The sum of all values in the data set was 5788.

Next, the analysis of the central tendency; the mean, mode, and median are given in the following statements. The most frequent test score or mode was 204 which was Proficient. The 2010 and 2011 Algebra 1 achievement levels were the following: Advanced (250-225), Proficient (224-200), Basic (199-177), and Below-Basic (176-100). The average score or mean was 192.93 (Basic). The middle value or median was also 193 (Basic). The mean and median were only 7 points away from Proficient.

The standard error, 3.19, was higher than the total population standard error; meaning the sample means are widely spread around the population mean, and that this sample may not closely represent the population. A high sample variance, 305.17, shows the scores in the data set are far from the mean with a wide distribution. The high standard deviation, 17.47, also indicates the data is spread out. The skewness and kurtosis are both close to 0 and in between 1 and -1, showing a normal distribution of the variables or scores.

Results for Null Hypothesis 2:

Null Hypothesis 2: There is no difference in attendance rates between the 2010–2011 freshman class (single-sex classes) and the 2009–2010 freshman class (coeducational classes).

The researcher examined attendance data for both school years to determine if single-sex classes made a difference in the students' attendance rate. The z -test value, .466, was less than the critical value, +1.96 and -1.96, therefore the alternative hypothesis was rejected and the null hypothesis was supported. Single-sex classes did not make a difference in the attendance rate of the students.

Figure 1*Building Attendance Rate*

NORMANDY (096109)

School	2010	2011
Missouri	94.3	94.4
Normandy High (1050)	84.5	83.8

Results of Null Hypothesis 3:

Null Hypothesis 3: There is no difference in the number of discipline referrals between the 2010 – 2011 freshman class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

The researcher examined the discipline referrals for both years to determine if single-sex classes made a difference in the number of discipline incidents that occurred during the school year, thus showing an improvement in discipline. The z -test value was -3.18 which is less than the -1.96 critical value, not rejecting the null hypothesis and not

supporting the alternative hypothesis. Single-sex classes did not make a difference in the amount of discipline incidents. Below is a breakdown of incidents for both the 2011 and 2010 school year with the number of incidents and the rate per student enrollment.

Figure 2

Building Discipline Incidents

NORMANDY (096109)

Normandy High (1050)	2010	2011
Enrollment	1,190	1,184
Total Number of Incidents	176	193
Incident Rate (per 100 students)	14.80	16.30
Type of Offense		
Alcohol (number rate)	0 0.0	0 0.0
Drug (number rate)	15 1.3	12 1.0
Tobacco (number rate)	0 0.0	0 0.0
Violent Act (number rate)	9 0.8	13 1.1
Weapon (number rate)	4 0.3	5 0.4
Other (number rate)	148 12.4	163 13.8
Type of Removal		
In-School Suspension (number rate)	0 0.0	1 0.1
Out of School Suspension (number rate)	176 14.8	192 16.2
Expulsion (number rate)	0 0.0	0 0.0
Length of Removal		
10 Consecutive Days (number rate)	140 11.8	189 16.0
More than 10 Consecutive Days (number rate)	36 3.0	4 0.3

Qualitative data includes results of teacher surveys, student surveys, and an interview with the head principal, and observations. Each data point will be discussed and summarized.

Teacher Survey

Teachers were asked three questions electronically using a link to *Survey Monkey* in the form of a Likert scale and short responses. Seven teachers responded out of 14 teachers.

Question 1

Teacher Survey Responses to Question 1: How would you agree with recommending single-sex classes to continue in a school district or a school district similar to yours?

Table 6

Teacher Survey Question 1

Question #1	Frequency
strongly disagree	0
disagree	0
neither	1
agree	5
strongly agree	1

Question number 1 was, how would you agree with recommending single-sex classes to continue in a school district or a school district similar to yours? The teachers' choices were strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. The teachers explained their answers by answering, why or why not? The majority of teachers answered they agreed with single-sex classes for their school district and for school districts similar to theirs. The teachers' short answers are bulleted and summarized below:

- There is a distinct difference in the way boys and girls learn (that's noticeable from a teacher's perspective). Thus, single-sex classrooms make it much easier to

customize messaging / instruction (e.g., emphasizing "gentlemanly" behaviors, competition, etc.) and I have found them helpful. However, it might also be beneficial from a social interaction standpoint to let the boys and girls mingle occasionally.

- Able to implement methods of teaching suitable to males/females. Less distractions of students trying to impress the opposite sex.
- Students have to learn in any environment. In the real-world students will not have a choice if they can work with males or females.
- I believe gender separation is a useful tool but must be implemented correctly. The program currently at Normandy High School is only in effect for the students for one year. I believe if this time were extended into the middle school or even throughout their high school career, academic performance would continue to improve.
- I believe it should be an option. For many, it helps tremendously.

Summary of the Teachers' Individual Responses of Question 1

The majority of teachers agreed with single-sex education classes continuing in the school district or would recommend single-sex classes to a similar school district. The reasons for teachers recommending single-sex classes were their abilities to address the unique learning styles of girls and boys, and the ability for girls and boys to focus more with less distractions from the opposite sex. Teachers also concluded that single-sex classes should be an option in a school district, and that these types of classes or education should be offered in earlier grades and continue throughout high school. Also,

girls and boys in a single-sex educational environment should have planned events in which girls and boys would come together.

Question 2

Teacher Survey Responses to Question 2: How would you rate your experience teaching single-sex classes?

Table 7

Teacher Survey Question 2

Question #2	Frequency
Failure	0
Below Average	0
Average	2
Satisfactory	4
Excellent	1

Question number 2 was, how would you rate your experience teaching single-sex classes? Teachers were given the choices of failure, below average, average or mediocre, satisfactory, or excellent. Next, they were asked to explain their answer or give an example that describes their experience. The majority of the teachers were satisfied with their single-sex teaching experience. None of the teachers selected below average or failure. The teachers' short answers are bulleted below:

- It makes it much easier to get to know my students and simplifies interactions / instruction to some degree (recognizing that every boy is not the same, of course). Thus, though I can fall into the trap of over-simplifying the dynamic occasionally, I would say that on the whole, single-sex classes have been very beneficial.
- Satisfactory, because I like working with both male and female.

- As I stated before, I do not believe the program at the high school has reached its full potential.
- It really depends upon the students. In the NHS situation, there are too many female teachers teaching males.

Summary of the Teachers' Individual Responses of Question 2

The majority of teachers rated their experience teaching single-sex classes as satisfactory. The reasons for single-sex classes being a satisfactory teaching experience were that teachers had the ability to get to know their students better, build a deeper relationship, and as a result were able to better meet their students' educational needs. Teachers pointed out a negative aspect as not being able to teach both boys and girls, or female teachers teaching male classes, and males teaching female classes.

Question 3

Teacher Survey Responses to Question 3: Did this program improve the quality of education you were able to deliver to your students?

Table 8

Teacher Survey Question 3

Question #3	Frequency
Yes	5
No	2

Question number 3 was, did this program improve the quality of education you were able to deliver to your students? Teachers were then asked if they responded, yes, to explain how. If they responded no, they were asked to explain why. The majority of the teachers responded yes. The short answers are bulleted below:

- Much like responses above, it means that I can customize lesson plans and messaging to males. It simplifies my interactions as a teacher (to some degree) and allows me certain freedoms as a teacher that I did not previously have in mixed-gender classrooms.
- They're more focused on their education.
- Yes, because the boys were not afraid to ask questions, whereas if female students were in the class the boys would not ask questions.
- Yes, I believe it did. Having the genders separated has cut down on distractions in the classroom and behavior problems. Also, I believe the females are more comfortable to speak their minds without fear of judgment by male peers.
- Single gendering did not change the quality of the instruction. It changed the instruction in what benefits each gender most, but not the quality.

Summary of the Teachers' Individual Responses of Question 3

The majority of teachers answered yes in response to single-sex classes improving the quality of education they were able to deliver to their students. The reasons that single-sex classes improved the quality of education teachers were able to deliver were that they could customize students' education according to their gender giving teachers more freedom to differentiate instruction. Also, students were able to focus more in class resulting in fewer behavior problems, and students asked more questions than they did in co-educational classes.

Student Survey

The researcher surveyed 60 students out of 268 students who had participated in the single-sex classes. The counselor distributed the surveys and collected the surveys

from the 60 students, which represented 22% of the student population. The students took the survey during their 10th grade year of high school, so that they could have a comparative experience. Seven questions were asked with short responses to explain each question.

Question 1:

How would you agree with recommending single-sex classes (classes with all boys and classes with all girls) for incoming freshman?

Table 9

Student Survey Question 1

Question #1	Frequency
strongly disagree	17
disagree	5
neither	12
agree	15
strongly agree	11

Question number 1 was, how would you agree with recommending single-sex classes (classes with all boys and classes with all girls) for incoming freshman? Students were given the choice to choose strongly agree, agree, neither agree or disagree, disagree, and strongly disagree. Twenty-two students strongly disagreed and disagreed with recommending single-sex classes for freshman, while 12 neither agreed nor disagreed, and 26 students strongly agreed and agreed with recommending single-sex classes for freshman students. Students were almost equally split in recommending or not recommending the freshman class participate in single-sex education classes. Analyzing the themes below students are also evenly split when describing the single-sex classroom environment as having less distractions or more distractions.

Table 10*Student Survey Question 1*

Comments in Favor of Single-sex Classrooms
Able to focus better and less distracted-13
Easier to get the help you needed and easier to learn-5
Students learn differently (meet students' needs)-4
Boys are class clowns (play) and will distract girls -3
Freshmen are not mature, will benefit from single-sex as preparation for high school-2
My grades improved (improves grades)-2
Student should have the experience of learning without the opposite sex-1
Girls do not show out as much to impress boys-1
Successful, school needs to keep up the progress-1
32 student answers total

The number one response from students who would recommend single-sex classes for incoming freshman with 13 respondents was that they were able to focus better and were less distracted. The next highest number response, with five respondents, was that it was easier for them to learn and get the help they needed and that it was easier to learn in the environment. Four students responded that students learn differently, and single-sex classes met the individual needs of boys and girls learning styles. Three students responded that boys are class clowns and play too much distracting the girls from learning. My grades improved, and freshman are not mature and would benefit from single-sex classes as a preparation for the rest of high school, received 2 respondents each. Single student responses included: students should have the experience of learning without the opposite sex, girls do not show off to try to impress boys, the program has been successful, and the program needs to continue.

Table 11*Student Survey Question 1*

Comments Not in Favor of Single-sex Classrooms
Single-sex causes too many problems (behavior)(fights) (drama)-14
I like to see the opposite sex (attraction)-4
Boys and girls work better together (a variety of ideas shared)-4
Single-sex will make students gay-4
Single-sex makes students crazy-2
Dumb idea-2
Boys are class clowns will distract each other if all together-1
As a boy I like to compete with girls-1
Feels like in jail, no freedom-1
Co-ed will better prepare students better for future-1
34 student answers total

The number one response to why students did not recommend single-sex classes for incoming freshmen, with 14 respondents, was that single-sex classes caused too many problems such as fights, other behavior problems, such as arguments and drama. The next response with six respondents was that single-sex classes will not change anything, because it is up to an individual to learn. Other responses included, I like to see the opposite sex, boys and girls work better together, and single-sex classes will make students gay had four respondents. Single-sex classes will make students crazy, and single-sex classes were a dumb idea had two respondents. Other responses with only one respondent were: co-ed classes better prepare students for the future, single-sex classes make me feel like I am in jail and have no freedom, one boy responded he likes to see girls, and boys are class clowns when they are all together and will distract each other.

Table 12*Student Survey Question 1*

Comments Indifferent About Single-sex Classrooms

 Single-sex classes will not change anything (up to individuals to learn)-6

 6 student answers total

Six students remained neutral and did not feel that single-sex classrooms or co-educational classrooms made a greater difference in the education of students when compared to each other, but the students felt it was up to the individual student to take ownership of their learning no matter the gender configuration of the class.

Question 2:

How do you feel about your ninth grade, single-sex educational experiences compared to your tenth grade, coeducational (boys and girls in the same class) experiences?

Table 13*Student Survey Question 2*

Question #2	Frequency
60 students made 84 comments	
Single-sex 9th grade positive	35
Co-ed 10th grade positive	41
Neutral	8

Question number 4, was how do you feel about your ninth grade, single-sex educational experiences compared to your tenth grade, coeducational (boys and girls in the same class) experiences? The researcher divided the responses into three categories: students who had a more positive 9th grade experience, students who had a more positive 10th grade experience, and students who were indifferent. Sixty students made 84 comments;

35 comments described 9th grade as a more positive experience, 41 comments described 10th grade as a more positive experience, and 8 comments described both 9th grade and 10th grade as the same. One can see a fairly even split as to how students perceived single-sex and co-educational classrooms. In the following tables the student responses are divided into the major themes.

Table 14

Student Survey Question 2

Students feel their experience was more favorable in 9th Grade.

I focused/learned/concentrated better in 9th grade and stayed on task-12
 The boys talk, play too much in 10th grade can't focus-4
 9th grade better-3
 10th grade harder, more advanced-3
 Both girls and boys are not focusing on work as much as they did in 9th grade, on focusing on work, but focusing on each other boys on girls and girls on boys-3
 I did more work-2
 Girls moved at a faster pace separate from boys-2
 My grades better in 9th grade
 Good experience (9th grade)
 9th grade an unforgettable experience
 It was a fun experience
 Feel more on my own, more difficult
 Girls had an opportunity to relate to each other
 35 student answers total

The number one response to why students had a more positive perception of their 9th grade single-gender academy experience with 12 respondents was that they focused/learned/concentrated better in 9th grade and stayed on task. The next response with four respondents was that the boys talked and played too much in 10th grade and they cannot focus. Both girls and boys are not focusing on work as much as they did in 9th grade, but focusing on each other; boys on girls, and girls on boys had three

respondents. Also, the responses that 9th grade was better, and 10th grade was harder had three respondents for each answer. Girls moved at a faster pace separate from boys, and I did more work had 2 respondents for each answer. Ninth grade was an unforgettable experience, it was a fun experience, I felt more on my own, and 10th grade was difficult, my grades were better in 9th grade, 9th grade was a good experience, girls had an opportunity to relate to each other had single respondents.

Table 15

Student Survey Question 2

Students feel their experience was more favorable in 10th Grade.

I learn more in 10th grade as an upper classman with mixed classes (co-ed) love/like co-ed better -12
 10th grade better because of training in 9th grade to block out distractions, 9th grade made me better for 10th grade-3
 Less fights, arguments, and drama in co-ed classes, get along better-3
 Socially able to learn more about classmates in 10th grade and hear different thoughts and ideas, learn more social skills-3
 I do better in 10th grade, more successful graded better-2
 Girls gossiped too much in 9th grade
 Sophomores more mature-2
 9th grade stupid and hard to concentrate-2
 All girls in one class not productive, too many fights, hard to concentrate-2
 More distracted in single-sex classes-2
 Too much testosterone and boys wanted to fight-2
 Even though a girl, work better with boys-1
 Glad 9th grade is over it messed me up-1
 Fun, but not a real or realistic high school experience-1
 I feel like I have more freedom than in 9th grade-1
 My behavior better in 10th grade-1
 10th grade more of a real-world experience-1
 10th grade more exciting-1
 41 student answers total

The number one response to why students had a more positive perception of their 10th grade co-educational experience with 12 respondents was that they learned more in

10th grade as an upper classman with mixed classes (co-educational). The next most frequent responses, with three respondents for each answer were, I am socially able to learn more about classmates in 10th grade and hear different thoughts and ideas, I am learning more social skills, 10th grade is better because of training in 9th grade to block out distractions, 9th grade made me better for 10th grade, and there are less fights, arguments, and drama in co-ed classes; we get along better. Six answers had two respondents, each given in the following: sophomores are more mature, 9th grade was stupid and hard to concentrate, all girls in one class were not productive, because of too many fights, and it was hard to concentrate, I was more distracted in single-sex classes, I do better and I'm more successful in 10th grade, and lastly, there was too much testosterone in one class and boys wanted to fight. All of the following answers had single respondents: 10th grade was more of a real-world experience, 10th grade was more exciting, I'm glad 9th grade is over it messed me up; 9th grade was fun, but not a real or realistic high school experience; I feel like I have more freedom in 10th grade; even though I am a girl, I work better with boys; girls gossiped too much in 9th grade, and my behavior was better in 10th grade. A combined 15 students shared the ideas of being more mature, better behavior, more freedom, excitement, and real-world experiences.

Table 16*Student Survey Question 2*

Students feel indifferent when comparing their
9th grade single-sex to their 10th Grade coeducational classes.

I still learn the same, no difference-4
Mixed feelings; was bad and good-1
The same cannot concentrate in either one, too much drama-1
Same level of education-1
It is up to the individual student to learn or not to learn if class is co-ed or not-1
8 student answers total

The number one response for students who perceived their 9th grade single-sex education experience, and 10th grade co-education experience as the same was, I still learn the same, no difference. The following answers had single respondents: I have mixed feelings, it was bad and good; both are the same and I cannot concentrate in either one, because there is too much drama; both 9th grade and 10th grade are the same level of education, and it is up to the individual student to learn or not to learn if class is co-ed or not.

Question 3:

Do you think that students' behavior was better in single-sex classes? If yes, how? If no, why not?

Table 17*Student Survey Question 3*

Question #3	Frequency
yes	9
no	51

Question number 3 was do you think that students' behavior was better in single-sex classes? If yes, how? If no, why not? Sixty students responded. Nine students responded yes that behavior was better, in contrast to an overwhelmingly 51 students responded with, no that behavior was not better. The themes below explain the behaviors students based their answer on.

Table 18

Student Survey Question 3

Comments describing how students' behavior was better in single-sex classes.

Better focus, more engaged, more learning- 6
 Less fights-2
 Better grades-1
 Now too much talking to opposite sex-1
 Boys and girls did not feel the need to show off-1
 Boys and girls show off to impress each other-1
 12 student answers total

Six students described students' behaviors in single-sex classes as more focused and engaged in the learning activities. Five of the students that responded that the behavior was better during the single-sex classroom year described students as still acting up and that having both males and females in the classroom did not improve behavior. Two students stated that there were fewer fights during their year of single-sex classes as compared to their sophomore coeducational experience. One student described, students' behavior as producing better grades. Other similar single student responses included: now boys and girls show off for each other, whereas in single-sex classes they did not feel the need to show off, and now boys and girls try to impress each other which makes behavior worse.

Table 19*Student Survey Question 3*

Comments describing how student' behavior was not better in single-sex classes.

A lot of altercations, conflicts, and bad attitudes with the girls (similar schedules so easier to fight)-11
 Girls (and boys) get in trouble to see boys (girls) they planned it-6
 Boys and girls bored so started trouble-5
 More people showed off, more disruptions, and conflicts, on purpose- 5
 The girls (and boys) started drama -4
 Boys were awful and fighting, try to establish dominance-4
 Behaved poorly because unfocused-3
 Lot of she said stuff (rumors)-2
 Boys do not like boys-2
 A lot of bullying-2
 Skipping (to see the opposite sex)-2
 I could not focus-1
 Behavior worse because separated-1
 Set stuff on fire-1
 Students were immature, just left middle school-1
 50 student answers total

Fifty students responded that behavior was not better in single-sex classes. The top answer, with 11 respondents, described a lot of altercations, conflicts, and bad attitudes with the girls. Adding, the girls had similar schedules, so it was easier to fight as a reason why. Girls (and boys) got in trouble to see boys (girls), as described by six respondents. The respondents said this was planned out. Boys and girls were bored, so they started trouble, shared five respondents. Five more respondents described that more people showed off and there were more disruptions and conflicts started by students on purpose. The girls (and boys) started drama, described four respondents. The boys were awful and fought to try to establish dominance, described four more respondents. Three respondents stated students behaved poorly because they were unfocused. Other students

described a lot of ‘she said’ stuff (rumors), boys did not like boys, a lot of bullying on both the girls’ and boys’ side, and students skipped to see the opposite sex. Each of these responses had two students for each. Single student responses included: students were immature because they just left middle school, students set stuff on fire, and the behavior was worse because of the separation, and lastly, I could not focus because the behavior was so bad.

Table 20

Student Survey Question 3

Comment describing how students’ behavior was the same in their single-sex and coeducational class.

Still act up with both boys and girls in class, the same-5
5 student answers total

Five students described the behavior as the same in both the coeducational setting and single-sex classroom setting.

Question 4:

Using the scale (failure, below average, average, satisfactory and excellent), how would you rate your experience in single-sex classrooms? Explain why or give an example that shows why.

Table 21*Student Survey Question 4*

Question #4	Frequency
Failure	2
Below Average	8
Average	28
Satisfactory	18
Excellent	4

Question number 4 asked students to rate their experiences in single-sex classrooms on a scale that had five answer choices: failure, below average, average, satisfactory and excellent. After choosing an answer, students were asked to explain why or give an example that shows why. Out of the 60 respondents two considered the experience a failure, eight considered their experience below average, 28 students described their experience as average, 18 students considered their experience satisfactory, and four considered their experience excellent.

Table 22*Student Survey Question 4*

Students explain why for their positive rating of single-sex education.

I got better grades-6
I focused better (less distractions)-5
I got more work done-3
Good teachers, they taught us a lot-2
Now too much work put on me-2
Teachers taught so we could understand the lesson, communication on point – 2
Teachers taught more for females, could understand better-1
The classes were excellent-1
I made great grades-1
Talked less-1
We learned on a higher level-1
Satisfied with education-1
The experience helped me, even though I was not mature enough to develop everything-1
27 student answers total

The top reason students felt their education was excellent or satisfactory with seven respondents was that they got better grades. The second reason with five respondents was that they focused better. The third reason with three respondents was that they got their work done. The fourth, fifth, and sixth reasons, with two respondents each, was that teachers taught so that they could understand the lesson, they had good teachers, and were not overloaded with work.

Single respondent answers included: teachers taught more for male or female learning styles or interest, the classes were excellent, students talked less, learned on a higher level, the education was satisfactory, and the experience was helpful.

Table 23*Student Survey Question 4*

Students explain their negative rating of single-sex education.

I could not focus, distracted by classmates, too much violence, always had to stop class-5
 We didn't learn a lot, too many disruptions-3
 Bad attitudes-2
 We did not get much done due to students doing stupid things-2
 Students more serious now, better grades-1
 I was bored-1
 Poor experience-1
 Below average education-1
 Boys played a lot-1
 I had trouble expressing ideas-1
 Teachers had to re-teach lessons from last year-1
 We are doing better in the 10th grade, getting better grades and acting more mature-1
 20 student answers total

The reason five, or half the 10 students, rated their education as below-average or a failure was that they felt there were too many distractions from other students, and that they could not focus in the classroom environment. In addition, the teachers had to stop classes frequently. Three respondents worded it similarly by describing that there were too many classroom disruptions. The next two responses had two respondents each. Students stated that they did not get much work done because students did stupid things. Also, students' bad attitudes lessened the quality of education for individual students. Single respondent answers included: students are more serious in the 10th grade, 9th grade was boring, the education was below average, boys played a lot, and we are doing better in 10th grade.

Table 24*Student Survey Question 4*

Students explain their average rating of single-sex education.

OK-6
Learned the same with or without boys (girls)-4
I was a mediocre student; my grades were fine-3
It was not the best, but good enough-1
Average-1
It was like a normal learning experience, nothing special-1
Neither good or bad experience-1
17 student responses total

The reasons students rated their education as average was that they considered their education OK, as described by six students; average, it was not the best but good enough, it was like a normal learning experience; nothing special, neither a good or bad experience as described by single respondents. Four female respondents felt they learned the same with or without boys present, and three respondents focused more on them being mediocre students with fine grades.

acting more mature.

Question 5:

Do you feel better about yourself after participating in single-sex classes? If yes how? If not, why?

Table 25*Student Survey Question 5*

Question #5	Frequency
yes	25
no	35

Question number 5 asked students if you felt better about yourself after participating in single-sex classes? If yes how? If not, why? Twenty-five of the 60 respondents answered, yes, that they felt better about themselves, while 35 answered no that they did not feel better about themselves after participating in single-sex classes.

Table 26

Student Survey Question 5

Students explain a change in their self-esteem related to single-sex education.

Better grades, better GPA, more responsible because of 9th grade-5
 Felt better (taught me how to focus and not focus on females my weakness)-4
 Taught me to be a better student, to focus and work harder-2
 I learned how to get along with females and build relationships (social skills)-2
 Learned more-2
 I was not distracted by boys-1
 Accomplished more-1
 Was not a show off for boys, still not (not an attention seeker)-1
 Felt special, like in an all-boys school (private school)-1
 Made me feel more positive-1
 I feel better because I passed-1
 Better perspective-1
 I feel more confident about being a female-1
 I feel better about myself the discussions changed my life-1

24 student answers total

The top reason with five respondents why students felt better about themselves was because their GPA and grades were better, and they felt like they learned responsibility. The next highest answer with five respondents was that they learned to focus and not be distracted. Three answers received two respondents: I learned more, I learned to get along with the same gender and build relationships (social skills), and the academy taught me to be a better student and work harder. Single respondent answers included: I accomplished more, I did not show off or have to impress the opposite sex, I

felt special like I was in a private school, I felt more positive, I felt better because I passed even though it was a challenge, I have a better perspective, I felt better about being a female, and I feel better about myself because the discussions changed my life.

Table 27

Student Survey Question 5

Students explain no change in their self-esteem due to single-sex classes.

I feel the same-18
 Did not change me, no effect-3
 I feel the same, more serious now-2
 Did not teach me to be a better(man)-2
 Did not want to be with all boys-2
 My grades were worse-1
 Like being in jail (Morehouse)-1
 I feel good about who I am and who I will be in the future-1
 Only one year, no effect on the rest of high school-1
 Now I care about the way I act-1
 I care more about my reputation-1
 33 student answers total

Thirty-five respondents said no, they did not feel better about themselves, because of single-sex classrooms. The most frequent answer from 18 respondents was that they felt the same. Three respondents answered similarly, saying that the program had no effect on them at all and did not change them. Answers with two respondents each said the program did not teach them to be a better man, which they expected, they did not like being with all boys, and they feel the same but they are more serious now. Single-answer respondents included: my grades were worse, I felt like I was in jail, I feel good about who I am and who I will be in the future, this was only one year I feel it does not affect the rest of high school, now I care about the way I act, and I care about my reputation.

Question 6:

Do you think your grades were better in single-sex classes?

Table 28

Student Survey Question 6

Question #6	Frequency
yes	23
no	37

Question 6 asked students do you think your grades were better in single-sex classes? Out of the 60 respondents 23 answered yes and 37 answered no. The answers were split similarly to question 5 which asked if students felt better about themselves in singles sex classes; 25 students answered yes; and 23 answered in thinking their grades were better. One could draw a correlation between grades and self-esteem. The major themes are unfolded below.

Table 29

Student Survey Question 6

Students explain why their grades improved in single-sex classes.

I focused on my work and not others (not distracted by boys and girls)-11
 The teachers were always giving help-1
 There was not a lot of distractions when everyone behaved-1
 I was not distracted-1
 My peers were focused not trying to impress anyone (easier to learn)-1
 Learned better because teaching directed towards females-1
 I was not distracted by the looks of the opposite sex and dating-1
 I was responsible to do my work-1
 Because of personal choice-1
 19 student responses total

The most answered reason explaining why they thought their grades were better, with 11 respondents, was, I focused on my work and not others (not distracted by boys and girls). All other answers were single respondent answers. Individual answers were: the teachers were always giving help, there was not a lot of distractions when everyone behaved, I was not distracted, my peers were focused not trying to impress anyone (easier to learn), I learned better because teaching directed towards females, I was not distracted by the looks of the opposite sex and dating, I was responsible to do my work, and because I made a personal choice to get better grades.

Table 30

Student Survey Question 6

Students explain why grades didn't improve in single-sex classes.

Could not focus due to behavior of peers-5
 I focus and do my work regardless of single-sex or mixed classes (due to self)-3
 I have better focus now-2
 I am attracted to the same sex-1
 I did not want to be around all females-1
 More mature, more responsible now-1
 Better student-1
 Distracted by girls' rude behavior with other girls-1
 We have girls in class and can focus now, we are more mature, not little kids like in 9th-1
 I make better grades because of mixed classes-1
 The boys are choosing to behave and control (more mature) themselves in front of the girls and now the teachers can teach-1
 Grades were not better but could have been due to the environment-1
 Grades not affected by gender but personal knowledge-1
 20 student answers total

The reason given most as to why students felt their grades did not improve which, had five respondents was, that they could not focus due to the behavior of their peers. The

next most answered reason given by three respondents was that as individuals they focused and did their work regardless of single-sex or mixed classes. The next most answered reason with two respondents was that I have better focus now in the 10th grade. All other answers had single respondents and are given in the following statements: I am attracted to the same sex, I did not want to be around all females, I am more mature, more responsible now, I am a better student now, I was distracted by girls' rude behavior with other girls, we have girls in class and can focus now because we are more mature and not little kids like in 9th grade, I make better grades because of mixed classes, and the boys are choosing to behave and control (more mature) themselves in front of the girls and now the teachers can teach, grades were not better but should have been due to the environment of single-sex classes, and grades were not affected by gender but personal knowledge.

Question 7:

Do you feel like you learned more in single-sex classes?

Table 31

Student Survey Question 7

Question #7	Frequency
yes	21
no	39

Question number 7 was, do you feel like you learned more in single-sex classes?

The respondents answered yes or no and explained their answer. Twenty-one students answered yes, and 39 students answered no.

Table 32*Student Survey Question 7*

Students explain why they did learn more in single-sex classes.

Teachers were able to limit distractions and help us focus-11
Teachers taught us in ways we could understand, more male centered, or gender based-2
I learned more -1
Boys are a distraction to my learning (good separated)-1
I had one on one concentrated time with my teachers-1
Learned better from female perspective and point of view, how females learn-1
Learned better study habits, note-taking-1
Yes, was better; now I am nervous to ask for questions and for help-1
Teachers taught in a way everyone could understand-1
The teachers broke down things for me-1
Classes were smaller-1
I can better summarize the daily lessons, more mature-1
23 student answers total

The top answer for students believing yes had 11 respondents and included the following response, teachers were able to limit distractions and help us focus. The next frequent answer with two respondents was, teachers taught us in ways we could understand for example more male centered, or gender based. All other answers had single respondents. Students responded in the following, boys are a distraction to my learning (good separated), I had one-on-one concentrated time with my teachers, I learned more, I learned better from female perspectives and points of view (specifically how females learn), I learned better study habits and note-taking skills, yes, my experience was better; now I am nervous to ask questions and for help, teachers taught in a way everyone could understand, the teachers broke down things for me, classes were smaller, and I could better summarize the daily lessons.

Table 33*Student Survey Question 7*

Students explain why they did not learn more in single-sex classes.

I learned the same, no more or less-15
 I barely paid attention in class, too many distractions, hard to concentrate boys acted up-4
 I was not prepared for 10th grade, did not learn anything-2
 I did not like single-sex or ROTC, it made me dislike classes-2
 I am a better student-2
 We are giving the same amount of information-2
 Boys and girls learn better together or I learned better with both genders, coed, can learn better things from both genders-2
 I like being with females, they elaborate more than males, I learn more from their discussions-1
 I am learning more in 10th grade and feel ready for 11th grade-1
 We received the same information as in middle school-1
 We often got side-tracked and off the subject-1
 Teachers could not teach due to student behavior-1
 I am learning more since out of 9th grade-1
 35 student answers total

The top answer for the respondents that felt they did not learn more in single-sex classrooms was that they learned the same; no more, no less, had 15 respondents. The next most frequent answer with four respondents was that, I barely paid attention in class, there were too many distractions, and it was hard to concentrate when boys acted up. Five answers had two students respond. The responses were: I was not prepared for 10th grade and did not learn anything; I did not like single-sex or ROTC, it made me dislike classes; I am a better student now and we are given the same amount of information, boys and girls learn better together, or I learned better with both genders, in coed I can learn better things from both genders. Six answers had single student respondents and are given in the following: I like being with females, they elaborate more than males, I learn more from their discussions; I am learning more in 10th grade and feel ready for 11th grade, we

received the same information as in middle school, we often got side-tracked and off the subject, teachers could not teach due to student behavior, and I am learning more since out of 9th grade.

Administrator Interview Summary

Dr. Annie Chambers, formerly an instructional coordinator, with eight years at the middle school level, an assistant principal for two years at the middle school level, and a head administrator in an urban St. Louis City school for 10 years, served as the head principal of the Ninth Grade Academy during the first year. Dr. Chambers compared and contrasted being an administrator in a school with single-sex classrooms to a school without single-sex classroom settings. She detailed her insights, which are summarized here by the researcher (A. Chambers, personal communications, November 30, 2012).

According to Dr. Chambers, students enjoyed the single-gender piece, because they were separated like private school. The Ninth Grade Academy was modeled after the colleges Morehouse and Spelman College, which are private, single-sex African American colleges. The colleges were a sister and brother school. Plans were made for the students to visit the colleges, but the plans never came to fruition.

The academy had strong core teachers that were sensitive to the needs of the students they were servicing. Students participated in the school pep-rallies, in after-school tutoring, athletic programs, and Better Family Life planned after school programming. One of the focuses of the Ninth Grade Academy was that each student had their own laptop; and the program was to be technology driven. There was less conflict with boys and girls with the single-sex classroom model. The boys and girls ate lunch at

the same time, but separately. It was important for Normandy to offer an alternative program, like the single-sex academy to give variety and choice to parents and students.

Some of the improvements Dr. Chamber alluded to were that the parents and students should have been knowledgeable of the vision of the academy and had more of a voice. Students should have had more of a voice in planning the logistics of the academy. Sometimes students felt like they were missing out on something, being separated from the opposite sex, and that they were being punished. More co-educational activities should have been planned. Students would misbehave, mainly the girls, to come to the office, which was near the boys' side to see the opposite sex. We also needed more parental support.

Dr. Chambers' recommended changes were more single, gender-related professional development for teachers. We only had two trainings, based on the single-gender academy out of Atlanta Public Schools. Mr. Green, the high school principal, had served as a principal at the Single-Gender Boys Academy in Atlanta. As a staff, they were supposed to review their data and complete a book study, but nothing was ever revisited or completed.

She continued with her assessment of the program, we needed to meet student needs with an alternative education program, like single-gender education for students not achieving or being successful in high school. Motivational alternative schools with different avenues to motivate students, like the 9th grade Academy, are needed. Public schools need to put the money where it needs to be, to solve the problems and invest in these programs. More money would have helped. Kipp Academy is successful with financial backing. We do not stick to what we say in public schools, and public schools

can be great. We cannot PR it through like it has to be shiny and great; in actuality it's not just about the appearance but the reality of financially supporting new programs so that they are successful (A. Chambers, personal communications, November 30, 2012).

Dr. Chambers responded to questions about the Ninth Grade Academy and the dynamics of the single-gender classes program (A. Chambers, personal communications, November 30, 2012).

1. How do single-sex sites operate?

All data points to single-sex sites lead to better achievement, but it has to be set up right with parent support, and let the children know why they are there, and instill in them the desire to be there. It might have gone better if students were eased into the program, rather than mandated. If they could have had a choice and applied, there would have been buy in. Even the teachers were mandated. The core principles of the program needed to be taught. "What am I getting myself into?" should have been explained. We needed the commitment and the buy in. That piece was missing.

2. How did the teachers respond to single-sex classes?

Some teachers wanted to do it, but others did not; and if they had a preference, they would not be there. But they did their job and did a great job, and for the most part they liked it; men taught men; women taught women. There was not enough ongoing PD to make it work. An outside study working with kids and teachers would have helped to answer teachers' questions: What is data saying about what can be accomplished? Can I wrap my mind around what I am doing? Teachers can't be immersed in it, if they do not know what they are doing. We

had a good workshop on how to teach children of that age single gender, but we did not continue PD by visiting single-gender schools. We planned to visit some private schools in the St. Louis area such as Rosati Kain and Christian Brothers College but didn't.

3. How did boys and girls respond to single-sex classes?

I am biased when it comes to the boys. The boys responded better, even though they wanted to act macho. They responded better than the girls. The boys were more comfortable being with their peers. They were more mature than the girls. The girls wanted to run down the hall and get to the other side where the boys were. I received more discipline infractions from girls than boys. Some girls had cat fights; he said, she said stuff. The girls received more 10 day referrals than the boys. The boys were able to squash their disagreements. The boys were involved in more pranks and horsing around, but they were able to resolve it. The girls had more fights and long-term suspensions due to the cat fights even though there were more boys than girls.

4. How are staff trained to be single-sex classroom educators?

Our teachers had two PD sessions prior to school. The ladies were from the Single- Gender Girls Academy within Atlanta Public Schools System. We based our model off their model. Their demographics were the same as ours. Many of their students were from a housing project. Mr. Green set up the professional development, because he was the prior principal at the Boys Single-Gender Academy in Atlanta; but he never came through to help or enforce the application of what was learned. He did not evaluate the teachers even though he

said he was. They were evaluated like everyone else, not on how well they did with the single-gender practices.

5. How are staff trained to be single-sex classroom educators?

A number of other professional developments were scheduled, such as visiting single-gender academies in Chicago, but that was canceled. We were also participating in a book study on related teaching strategies to follow the Georgia model.

6. How do you believe single-sex education has affected the 9th Grade Academy?

I believe the real teaching and learning of single gender was not there. The buy in was not there. There was a lot of frustration, and the teachers wanted the PD and support many came to teach the freshman from teaching seniors and needed the professional development. So, the expected effect would not have been authentic.

7. What changes would you recommend for next year to improve the 9th Grade Academy's single-sex program?

First, students would have a choice for single- sex education. Students would understand the concept. Student input would be important as well as student organizations, activities and more intermingling of genders. Teachers would also have a choice to be a single -sex classroom educator, and participate in intensive summer training, and ongoing PD. A look at comprehensive data to make continued program improvements. Also, follow through on original planning, and a positive public relations plan to attract students.

8. On a scale from 1 to 10, 10 being the highest, how would you rate being an administrator in a school that has single-sex classes?

Dr. Chambers indicated, “I would rate the academy as a 5, because there was so much, I could have done to have programs for teachers and students. I also could have had a leadership team, but I was micro-managed. He, the head principal, was not interested in making the program work, just keeping a lid on it or just doing it.”

9. How long do you think this program will last?

She estimated the program would last three years, which was accurate.

10. Do you believe other sites within the Normandy School District will adopt this program? Explain Why or why not.

Not yet unless it is perfected, and we have a good prototype and work out the kinks before it’s duplicated, get some data on it and perfect it and then build. The concept was good, but more preplanning, consistent stable core –teachers, PD benchmarks, periodic reviews, goal setting, and input from parents would have experienced success. We got stagnated. Students did not see the vision and why single-sex education was beneficial for them. They felt as if they were being punished and isolated. Teachers did not receive adequate PD and did not use the strategies for teaching gender-based education.

Results from Observations

The researcher visited the Ninth Grade Center on three occasions, April 21, 2011, November 30, 2011, and December 14, 2011, to make observations. A check list was

used, and the researcher recorded notes next to each item on the check list. The researcher summarized their findings in each category for each of the site visits.

Organization (operating systems in place):

The Ninth Grade Academy had a mission statement in place, “Fostering Excellence in Education.” Classes were held in East Hall, a separated building from the other part of campus. The 9th grade Academy followed the team concept which is similar to the middle school concept. The males were Team Morehouse, and the females were Team Spelman. Both were named after historically black colleges.

Men taught boys, and women taught girls. There were smaller class sizes than the district average class size (14 students in one class I visited, as opposed to 25 students). The composition of the Ninth Grade Academy consisted of one assistant principal, one secretary, 14 teachers, 143 boys, and 125 girls, totaling 268 students. Class offerings included the following list:

1. Communication Arts
2. Social Studies
3. Science
4. Math
5. ROTC
6. Computer Applications
7. Health
8. Career Orientation Exploration
9. Computer Applications

Computer applications class was an attempt to have a curriculum driven by technology. The students used netbooks in each class as their technological device to implement technology. The use of technology included but was not limited to textbooks, presentations, research, and math. Data walls were used to keep students aware of their progress in the core content areas. During lunch students had to walk to the cafeteria and gym located elsewhere and boys and girls ate separately in the two areas of the cafeteria. This was considered their social break, even though they did not intermingle. Students wore school uniforms except on ROTC days when they would wear the ROTC uniform.

The principal's office handled disciplinary concerns. The principal gave real-life examples of the effect of behavior or the consequences the student would receive in accordance to the disciplinary code book. Student interventions were established, and proper problem-solving skills were iterated. Girls and boys had the opportunity to discuss the issue and resolve the conflict. The disciplinary code book was followed. Students were aware of the step they were on or their consequence for their action.

***Student to Student Interactions (comfortable or uncomfortable) and
Teacher and Student Interactions (comfortable or uncomfortable):***

The researcher observed student-to-student interactions and student-to-teacher interactions. The researcher was looking for the absence of conflict and comfortable, social interactions which appear to be at ease for each of the individuals in the setting. In all of the three student-to-student observations the students were comfortable, meaning no conflict was evident. Students were friendly and engaged with one another in appropriate mannerisms and conversations. The observer witnessed a camaraderie both

among the students on the all-boys side and all-girls side. The students seemed relaxed and at ease in the learning environment.

The student-to-teacher interactions were ranked as comfortable, as well. The students were respectful, and the teachers were respectful. The boys had a freedom to move about the classroom and stand if they chose to do so, rather than sitting at a desk. Their movement was not disruptive, and they were engaged in the lesson. The teachers also had an openness with the students as they discussed gender-related issues and cultural issues that could affect them. Scenarios helped the students think about the moral implications and what the best decision would be in each case. The interactions between teachers and students were overall positive, and both groups had a willingness and openness to discuss. Only one incident occurred in which a young man was asked to leave the classroom because he wanted to continue to joke. The teacher felt this was disruptive to the classroom environment and sent the young man to the office. The young man said, the teacher was giving him a hard time and did not like him. Even in this redirection the situation did not escalate. The young man followed the teacher's directive and left the classroom. The interactions between students and teachers were comfortable.

Differentiated Instruction (gender specific):

As Carol Ann Tomlinson (1999) has said, differentiation means giving students multiple options for taking in information. Differentiating instruction means that the teacher observes and understands the differences and similarities among students and uses this information to plan instruction. Differentiation means tailoring instruction to meet individual needs. Whether teachers differentiate content, process, products, or the

learning environment, the use of ongoing assessment and flexible grouping makes this a successful approach to instruction (Robb, p. 1, 2021).

The ninth-grade center, by its very organization incorporated Differentiated Instruction by organizing students in homogeneous groups according to their sex. Furthermore, the content was differentiated, based on the particular groupings with learning styles and interest in mind. The researcher observed a variety of teaching strategies used on the boys' side and the girls' side, which are recorded below.

Boys Side:

A strategy observed was the Jig Saw method of giving each group information to report out to the group in order to capture the whole picture. In each subject area the researcher saw collaborative groups. The groupings on the boys' side used games and competition as a method for learning the content presented. One game included tapping and counting, which lends itself to the kinesthetic learning style, which is dominant in African American males. Teaming and team bonding activities built the classroom culture, so that the boys would learn the process of working in groups. The teachers also used lighting. The lights were dimmed on the boys' side which had a calming effect.

Girls Side:

A strategy that was observed on the girls' side as well was the Jig Saw method of giving each group a small chunk of information to process and report out to the group, in order to see the big picture. Collaborative groups were used in each disciplinary area with the girls as well. The girls' collaborative teams exhibited more socializing, and discussion. The groups were self-managed, and the students helped and assisted each other with their classwork.

Student Engagement (high, medium, or low):

The researcher observed student engagement. Student engagement is the extent to which the students are participating in the activity. High constituted all students engaged and participating. Medium consisted of the majority of students participating, and a few off tasks or uninvolved in the lesson. Low equaled more than half of the students being inattentive and not participating in the activity or lesson. On all three visits the observer considered what she saw in each of the classrooms as a high level of engagement. Students were excited about the lessons and participated in conversations related to the topic. Students participating in collaborative work, testing, lecture, questions and answers format were, from what the observer could establish, highly engaged. The researcher could not value or observe what the student was thinking, therefore they could have been wandering in their thoughts and not concentrating on the subject matter, but from physical and outward appearance students were involved and following the given instructions and putting forth effort.

Summary

Chapter Four included the results from both quantitative and qualitative data. Quantitative data included the results from the end-of-course state assessment, attendance rates, and behavior reports. Overall student achievement improved, but attendance and behavior were unaffected by single-sex education. Qualitative data results included a teacher survey, a student survey, the researcher's observations, and an interview with the principal. Overall students indicated both positive and negative experiences in the single-sex academy. The teachers described a mostly positive experience for their students and their selves. The principal described both positive and negative aspects of the single-sex

academy. The principal explained the lack of commitment from district-level administrators as fatal to the success of the program. The researcher's classroom observations depict a positive learning environment. Chapter Five will further discuss reflections, and recommendations for futures studies.

Chapter Five: Discussion and Reflection

Introduction

An Investigation of Single-Sex Classrooms in an Urban, Public School Ninth Grade Academy is a mixed-method study researching the effects of single-sex classes on the freshman students in the Normandy School District. The investigation had three null hypotheses for the quantitative study stated in the following:

Null Hypothesis 1: There is no difference in academic achievement (as measured by the end of course exams) between the 2010–2011 freshmen class (single-sex classes) and the 2009 – 2010 freshman class (coeducational classes).

Null Hypothesis 2: There is no difference in attendance rates between the 2010 – 2011 freshman class (single-sex classes) and the 2009–2010 freshman class (coeducational classes).

Null Hypothesis 3: There is no difference in the number of discipline referrals between the 2010–2011 freshman class (single-sex classes) and the 2009–2010 freshman class (coeducational classes).

In the qualitative study the researcher wanted to understand the feelings, perspectives, and opinions of the administrator, teachers, and students in the school environment. References will be made to these interviews and the results of the hypotheses along with recommendations.

Personal Reflection

Historically Normandy School District practiced the coeducational model of education. The 2010-2011 school year was the first advent of the Normandy School District to use the model of single-sex classrooms to configure a whole grade level, the

Ninth Grade Academy. The model effectively improved academic achievement, but failed to make a difference in attendance, and the number of behavior incidents according to the researcher's data. The application of the strategy of single-sex classes may have and could have been more effective in improving student attendance and the number of behavior incidents if the model was used with preparation, fidelity, and a continued cycle of reflection, re-evaluation, and redesign if necessary. In the midst of constant change there was never any follow through with professional development for teacher preparation or follow through for suggested changes that would improve the Ninth Grade Academy. None of Dr. Chambers suggested improvements were ever tried or instituted.

The single-gender Ninth Grade Academy lasted three years, as the administrator, Dr. Chambers predicted, amid constant changes in administration, and district-wide instability. Ideally, single-gender classes would still be offered each new school year. The single-gender academy could have been a beacon of success and still in existence in the school district with passionate teachers and motivated students. There is a need and a place for single-sex education classes in the Normandy School District to meet the academic and social needs of students. As a middle school teacher for 21 years, the researcher hoped that a successful Ninth Grade Academy could have translated into a successful Middle School Single-Gender Academy.

Middle school is the perfect age for a single-gender academy. Pre-teens are developing both physically and mentally. The learning differences of males and females are evident, and the maturation in socialization is still very new to them as boys and girls begin to become more sexually interested in each other. Teachers in this single-gender setting could focus on differentiating instruction for the varying needs of the adolescent

boy and girl. They could be mentors in the development of healthy peer relationships and interactions at an age where peer acceptance and self-esteem are most important in the adolescent mind.

Adolescents have a short attention span, and it is exacerbated by boys trying to impress girls, and girls trying to impress boys, and all around both of them trying to impress their peer group. This is the age when a new way of viewing the opposite sex emerges. Students who were once A and B students often drop in their academic status.

Other urban public-school districts in Atlanta and Detroit have practiced and sustained both male and female single-gender academies which are still successful to this day and have been for over a decade (Atlanta Single-Gender Academies; Frederick Douglass Academy for Young Men, n.d.). There is not any reason Normandy Schools Collaborative could not successfully accomplish this feat. Unlike Atlanta and Detroit, Normandy did not invest time, money, and other supports. Had they done so, there would have been more positive returns from the 9th Grade Academy.

Recommendations to the Program

Presently the program does not exist anymore, if the recommendations that will be discussed in this chapter were followed with fidelity the program could have had an extended period of longevity or still be in existence, and expanded to other grades levels, either secondary, middle, or elementary. The program lasted for three years within the Normandy School District at a time when the Normandy School District experienced the threat of a state take over and all employees had to reapply for their jobs. Many employees left or lost their job. Many students left to attend accredited school districts. With the unaccredited status the school district had to pay for students to go to other

schools, and, in addition, pay for the student's transportation to the Francis Howell School District.

This almost financially broke the Normandy School District. Few resources could be used to support new, and innovative programming such as the single-gender Ninth Grade Academy. The Ninth Grade Academy needed funding or money to provide the teachers with ample professional development, and ample, competitive classroom resources. The money was not there, and the idea was abandoned for the traditional coeducational model practiced in the Normandy School District.

As important as money, is faith, belief in the programming as an essential to the academic achievement of the Normandy Ninth Grade Center students. Faith in what one is doing, faith in who one is doing it for, faith in why one is doing it, and faith in the results that will follow, are necessary for the success of any educational programming. Faith is an immeasurable factor, and the faith of many teachers and students during this time period had been broken. There was barely enough faith to continue with business as usual, let alone, the Ninth Grade Single-Gender Academy. The Ninth Grade Academy would no longer continue in the single-sex classroom methodology. However, for the success of the Ninth Grade Single-Gender Academy, aligned with faith the immeasurable factor, are the following recommendations: instructional and consistent leadership, pedagogical training including sensitivity training and mentoring; buy in from staff, students, and parents; and lastly relationship building between all entities involved in the single-gender academy.

Instructional and Consistent Leadership

The first recommendation is instructional and consistent leadership. The leader should spearhead the development of a mission, vision, and goal statement for the students, staff, district, and community specific to the single-gender academy but congruent with the district mission, vision, and goal statements. A corporate mission, vision, and goals statement that are derived from what is best for the students should be created. The single-sex academy must know why it exist (it's purpose), and what it is going to do to fulfill the purpose of its existence. Thus, collaboratively the members propose a mission, vision, and goal statements, which will direct its fundamental practices. A successful leader of a single-sex academy must believe in the mission of single-sex academy and make a commitment to the success of the academy, like the example of Principal Skyles Calhoun who steeped himself in best practices for single-gender academies before, and during his leadership role as the head administrator of a single-gender academy (Principal Leadership, 2012).

The leader should serve at least five years with a consistent staff of teacher leaders. The Ninth Grade Academy on the other hand had a new administrator every year of its existence. It takes about five years to truly implement a program. Three-to-Five years of consistency is recommended to see change by Dufour (2004). He explained, "It takes time for a change initiative to take root within the culture of any organization, and until the initiative takes root, it is extremely fragile and subject to regression." Rick Dufour, referencing Dennis Sparks, advises that the key to school improvement is sustained effort over three to five years in which the entire staff seeks incremental annual improvements related to important school goals. The leader would serve as an

instructional leader and lead the staff in the practice of professional learning communities with an emphasis on single-sex instructional strategies (Dufour, 2004, p. 64).

Rick Dufour's (2004) model for professional learning communities would be an educational model that could align with and support single-sex academies' mission, vision, and goals within the public-school setting. This model would support the academic achievement of all students which is the premise for single-sex academies. The three big ideas that define professional learning communities are communicated in the following:

The first big idea in the professional learning communities' model is to ensure that all students learn. Collaboratively teachers must ask what they want students to learn, how will they know that the student has learned it, and what happens when a student does not master the content. These questions help educators to develop systematic best practices to meet the needs of individual students. (Dufour, 2004, p. 1)

The second big idea of professional learning communities that would support student academic success in single-sex learning academies is fostering a community of collaboration. Best practices for educators are to work in collaboration instead of isolation. Educators should plan together the strategies that will best meet the needs of their students. (Dufour, 2004, p. 1)

The last big idea of the professional learning communities' model is for the teams to focus on results. The teachers look at the data and make goals based on that data. The teams figure out SMART (Specific, Measurable, Attainable,

Realistic, Timely) goals to improve each student's academic achievement and their teaching skills. (Dufour, 2004, p. 1)

Pedagogical Training

The second recommendation to the program is pedagogical training; instructional methods that enhance the science and art of teaching. Not only should pedagogy be addressed in the beginning of the school year, but ongoing throughout the school year and the summer months as well. The Ninth Grade Academy administrators and teachers complained that as a staff they would begin professional development but would not continue. They began a book study and never completed the study. They were supposed to visit successful single-sex academies and the visits never happened. Both book studies, and site visits are excellent types of professional development, and are highly recommended, but follow through is a necessity. The hard work and commitment must be put forth by the staff as an investment in themselves and their students. Each teacher involved in the program should be immersed in related pedagogy to the extent that they are experts. One of the ways that teachers become experts is by studying other experts and applying the methodologies to their teaching methods.

An expert in differentiating instruction is Carol Tomlinson (1999) who states that differentiating instruction is a teacher's response to a learner's need. Tomlinson suggested, differentiating instruction by using data to gauge a student's readiness level, interest, and learning style. Gender based educational settings at their very core are differentiating instruction on the basis of sex, but knowing instructional strategies that better motivate boys or girls to learn is just the beginning point of single-sex classrooms, because within each of the sexes individuals still learn differently. So, within single-sex

classrooms instructors should not only focus on strategies that improve learning situations for that gender, but also look at the individual learner beyond their sex and create a profile that is unique to their individual learning needs (Tomlinson, 2014).

Recommended books by Tomlinson that could give teachers insight into differentiating instruction for their single-sex classrooms include: *The Differentiated Classroom*; *The Differentiated School: Making Revolutionary Changes in Teaching and Learning*, *Leadership for Differentiating Schools and Classrooms*, and *Differentiation*; and *The Brain: How Neuroscience Supports the Learner* (ASCD, Carol Ann Tomlinson).

There are experts who have written books on the rationale for single-sex education and the best practices for single-sex educational settings. The National Association for the Advancement of Single-Sex Public Education (NASSPE) provides information on single-sex education in public schools. Dr. Leonard Sax, an American psychologist and a practicing family physician, chaired the governing board of this organization for years and authored *Boys Adrift*, *Girls on the Edge*, and *Why Gender Matters* (NASSPE, 2009).

Dr. Sax espouses that both boys and girls in America are short changed and need help in different ways. He described boys as “goof balls and disengaged.” He described girls as “anxious and depressed.” Which is worse: “being a disengaged boy who sits in his bedroom happily playing video games 20 hours a week, or being an anxious over-achieving girl who secretly cuts herself, with razor blades?” The question is meaningless. Both the boy and the girl in this example, need help. But they need different kinds of help (Sax, 2016, p. 1). In his books and articles, Dr. Sax, explains to teachers and parents how to give boys and girls the help they need so that they can be successful in life.

Margret Pala Olafsdottir, author, founder, and CEO of the Hjallastefnan School, describes the Hjalli Model of Education, which advocates single-sex classrooms from pre-school to lower secondary schools. Introducing boys and girls to single-sex education early with the purpose of dispelling children from being exposed to stereotypical behaviors and traditional gender roles. These schools were founded and are operated in Iceland (The Hjalli Model, n.d.).

Another expert in gender-based learning is Dr. Abigail James who has written: *Teaching the Male Brain: How Boys Think, Feel, and Learn in School*; and *Teaching the Female Brain: How Girls Learn Math and Science (PhD, - Abigail James: Teach your children well 2016)*. Teachers should also be exposed to the most recent research through education journals. *Advances in Gender and Education* is a journal that publishes scholarly papers about gender in education. This magazine is edited by Magaret Ferrara out of the University of Nevada, Reno.

Dr. Jawanza Kunjufu is an education consultant based in Chicago, who has authored over 40 books. In his books he promotes single-gender classrooms or schools as a strategy to improve education for African American Boys. He has recently authored a book about the pressures African American girls face during their k-12 school years, *Educating Black Girls*. Some of his most popular works to address the plight of African American boys in education are: *Changing School Culture for Black Males, A Culture of Respect, Countering the Conspiracy to Destroy Black Boys, and Understanding Black Male Learning Styles*.

To create a more equitable learning environment for black boys, Kunjufu (2001, 2015) advises educators to accommodate specific learning differences tied to gender. "If

you know that girls mature faster than boys—almost a three-year difference —instead of placing boys in special education, we should allow for those differences or consider single-gender classrooms," Kunjufu suggests. Accommodations can include shortening lesson plans, allowing more movement in the classroom, and holding physical education classes daily. To allow for these differences, Belgium, Germany, and Switzerland either delay the entrance of their boys into school until age 6 or 7, or they separate boys and girls (ASCD, 2005, p. 3).

Kunjufu's considerations are important for gender-based education, and in particular focuses on the most underperforming group, African-American males, which single-sex education can profoundly help. All of these experts see a need to consider the educational needs of the individual sexes, and even more specifically the needs of African-American students within the scope of gender-based learning. There is a lot written about single-sex education in public schools available for the professional development of staff and ongoing professional development of staff. There is not any reason that anyone that teachers in a single-sex public educational setting should not be an expert.

Sensitivity Training

Another recommendation is sensitivity training for teachers working in single-sex classrooms to make them aware of their own biases and to assist them in breaking down gender stereotypes that they possess. So, they can freely teach without dogmatic point of views. Also, within the sexes some students do not adhere to traditional gender roles and teachers need to be sensitive to all their students and their diverse needs. Oxford Languages and Google defines sensitivity training as training intended to sensitize people

to their attitudes and behaviors that may unwittingly cause offense to others, especially members of various minorities (Oxford University Press, 2021). A sensitive teacher will build a culture of acceptance in which all students will feel safe socially and academically to take risk to learn. A sensitive teacher would break down old stereotypes that categorize boys' and girls' strengths and weaknesses, allowing their students to take chances, flourish, and grow; building their students' self-esteem.

Mentoring

Extensive mentoring is the last pedagogical training recommendation to the single-gender academy staff. There are many successful running single-gender academies that could mentor novice academies. Mentoring should take place at all levels: administration, teachers, and students. Visits and observations should take place throughout the year between the academies. If the single-gender academies are not in the same city, video conferencing and chatting could be a way to continue communication after visiting each other's campuses. The experienced academy could host professional development and give feedback to the beginning academy. Administrators would have a reliable source to talk through common issues that arise in this particular educational setting. Teachers should have their tough questions answered by experienced teachers. Teachers can observe strategies and best practices in action, and students could hear from other students about how the single-gender academy has improved their academic performance.

A question-and-answer time would be an excellent beginning of the year activity between the academies. A casual outing could be planned during this event to get to know mentors, and actually individually match mentors and mentees. Matching mentor

and mentee could be accomplished on the basis of academic expertise. Students could participate in the visits as well during the school year. Engaging students in the mentoring program would give students someone to discuss their thoughts about their single-sex educational experience. Students could correspond with students from the mentoring single-sex academy to understand students' perspectives and experiences. They could have a question-and-answer period as well at the beginning of the school year as a part of the acclimation process for students.

Buy in from Staff, Students, and Parents

Merriam-Webster Dictionary defines buy in as “an acceptance of and willingness to actively support and participate in something.” Buy in is important from all involved in the single-sex academy: staff, students, and parents (Merriam-Webster Dictionary.com, 2021). A clear mission, vision, and goal statements communicated and agreed upon by all entities will support buy in. Choice is also an important factor to support buy in. Within a school district staff should have a choice as to rather or not they want to teach in the single-sex classroom environment, students and parents should be able to make a choice together as to rather or not the single-sex classroom environment is best for their educational needs.

A school district could manage choice for its patrons by providing an application process for those who desire single-sex classes as an option to coeducational classes. Once the choice is made, knowing what patrons expect is important. A survey should be given to staff, students, and parents to consider why they chose the option of single-sex classes and what they expect. This information or data can be used for establishing standards and specific expectations for staff, students, and parents. A committee should

be established with teachers, students, and parents to participate in making important decisions, for example, what types of uniforms will students wear, or will students wear uniforms, and what types of co-ed and non-coed activities will be planned for the school year to build relationships.

Positive Relationship Building

Many coed activities and single-sex activities should be planned to engage male and female students in social time with the governing principles of respect and tolerance. Coed activities can include dances, and school events such as plays and musical performances. Boys and girls will learn proper social behavior and interactions as they participate in activities facilitated by teachers. Teachers can teach students social skills such as manners, appropriate language, and guide relationships to ease tension in boy and girl relationships. Also, a significant amount of time should be dedicated to team building at the beginning of the school year to improve same-sex relationships, as well as throughout the school year. Team building activities can consist of small classroom challenges to activities such as camping together to build collaboration skills. Team building can take place often on campus and off campus. As teams, students can go against other single-sex academies to build comradery. Healthy relationships should be a school-wide practice.

The reinstatement of single-sex classes within the Normandy Schools Collaborative is recommended, beginning at the early childhood center and some isolated classes in elementary during third grade and sixth grade as a choice for patrons. Middle school and ninth grade are the recommended grades for full single-gender academies. As the district grows in its knowledge and application of single-gender education, it could also grow in

its offering of single-sex classes with single-gender academies at all grade level, elementary, middle, and high school. Coeducational buildings would still exist, but patrons would have a choice. There is a place for single-gender classes in a public-school setting that focuses on the individual needs of students, not only focusing on gender, but individual learning styles, readiness, and interest to differentiate instruction.

Recommendations for Future Research

Further studies should focus on how single-gender education affects each grade level or age group of students. This study could be a longitudinal study and could study clusters of students from pre-school to their senior year. Questions could be answered such as, “Is it better to begin single-gender education at the primary level like the Hjalli model in Iceland or is it better to introduce single-gender education in middle school during adolescence when preteens are most distracted by the opposite sex?” Other questions that could give insight to the success of single-gender education are researching the following questions:

What is the best curricular structure for single-sex classes?

How do modern day views of women affect gender-based education?

How do modern day views of men affect gender-based education?

How do stereotypes of both boys and girls affect their education?

Also, the current study should continue in schools across the country taking data to see how single-sex classes affect student achievement levels, attendance, behavior, and self-esteem. This is the powerful story.

Conclusion

In conclusion, the recommendations that have been suggested would be best practices for any emerging program. Teachers need pedagogical training to apply and become experts. The role of an administrator is to serve as an instructional leader. An administrator should be willing to make a long-term commitment to see progress and positive change occur in the program. Commitment to the success of the program should be communicated through a vision, mission, and goal statements to inspire the school community, and the community at large. Relationship building between all entities of the program should be an ongoing process. All the above parameters would have to be in place with buy in from administrators, staff, students, and parents for a successful program.

References

- A&E Television Networks. (n.d.). *Topics & Stories*. HISTORY.
- Anfara, Jr., V. A., & Mertens, S. B. (2008). Do single-sex classes and schools make a difference?. *Middle School Journal*, 40(2), 52-59.
- Arnot, M., Gray, J., James, M., & Rudduck, J. (1998) *A review of recent research on gender and educational performance*. OFSTED Research Series. London, The Stationery Office.
- Aston, C., & Graves, S. (2018). A mixed-methods study of a social emotional curriculum for Black male success: A school-based pilot study of the Brothers of Ujima. *Psychology in the Schools*, 55(1), 76-84.
- Beatty, B. (1997). *Preschool education in America: The culture of young children from the colonial era to the present*. Yale University Press.
- Beck, J., Dreolin, B., Moulton, M., & Ransome, W. (2005). The National Coalition of Girls' Schools Alumnae Survey (NCGS 2005).
<https://www.grginc.com/documents/NCGSExecutiveSummary.pdf>
- Bednell, J. (1993) Let's test the assumptions and examine some realities, in: D. Hollinger (Ed.), *Single-gender schooling: perspectives from practice and research* (vol. 1). Washington, DC, Office of Educational Research.
- Blair, H., & Sanford, K. (1999). Single-sex classrooms: A place for transformation of policy and practice. <https://files.eric.ed.gov/fulltext/ED433285.pdf>
- Bonomo, V. (2010). Gender matters in elementary education: Research-based strategies to meet the distinctive learning needs of boys and girls. *Educational Horizons*, 88, 257-264.

- Brake, D. L. (1999). A legal framework for single-sex education. *Women's Educational Equity Act Publishing Center Digest*, 3.
- Burke, L., & Murphy, E. (2006). Female students' experiences of computer technology in single versus mixed gender school settings. *e-Journal of Instructional Science and Technology (e-JIST)*, 9(1), pp. 1-11.
- Cable, K., & Spradlin, T. (2008). Single-sex education in the 21st Century. [Review]. *Education Policy Brief*, 6(9), 1–12.
- Clark, I. (2004). Co-Education and gender: The end of the experiment? *Education Policy Analysis Archives*, 12, 41. <https://doi.org/10.14507/epaa.v12n41.2004>
- Collins, C., Kenway J., & McLeod, J. (2000). Factors influencing the educational performance of males and females in school and their initial destinations after leaving school. Canberra, Department of Employment, Education, Training and Youth Affairs.
- Couture, K., Heins, E., & Tichenor, M. (2011). The boy factor: Can single-gender classes reduce the over-representation of boys in special education? *Journal of Instructional Psychology*, 38(4), 255-263.
- Datnow, A., Hubbard, L., & Conchas, G. (2001). How context mediates policy: The implementation of single-gender public schooling in California. *Teachers College Record*, 103(2):184-206,
DOI: 10.1111/0161-4681.00113
- Dodd, A. (2015). Single-gender impact 2015. Georgia Charter Schools Association. https://studylib.net/doc/7214120/pdf_singlegenderimpact2015---georgia-charter-schools-association.

DuFour, R. (2004, May 1). What is a “Professional Learning Community”? ASCD.

<https://www.ascd.org/el/articles/what-is-a-professional-learning-community>

Ekpo, E. (2011). Is Different but Equal the new Separate but Equal? NCLB's single-sex schooling option signals new horizons for some, while challenging equal education convictions for others. *Journal of National Association of Administrative Law Judiciary*, 31, 315.

Faddis, B., Beam, M., Riordan, C., Seager, A., Tanney, A., D’Biase, R., & Valentine, J. (2008). Early implementation of public single-sex schools: Perceptions and characteristics [Review]. Education Publications Center.

Fiske, E. (1982, October 5). Education; Sputnik recalled: Science and math in trouble again. *New York Times*. (section C, p. 1).

Francis, B. (2000). *Boys, girls, and achievement: Addressing the classroom issues*. Routledge.

Frederick Douglass Academy for Young Men / Homepage. (n.d.).

<https://www.detroitk12.org/douglass>

Friend, J. (2006). Research on same-gender grouping in eighth grade science classrooms. *RMLE Online*. 30. 10.1080/19404476.2006.11462037.

Friend, J. (2007). Single-gender public education and federal policy: Implications of gender-based school reforms in Philadelphia. *American Educational History Journal*, 34(1/2), 55.

Gardner, D. P. (1983). *A nation at risk: The imperative for educational reform*. An open letter to the American people. A report to the Nation and the Secretary of Education. Congressional Research Service.

- Gardner, R., Talbert-Johnson, C., Hamilton, S., & Seibert, M. (2000). Using guided notes to improve the academic achievement of incarcerated adolescents with learning and behavior problems. *Remedial and Special Education, 21*. 133-170.
10.1177/074193250002100302.
- Gill, J. (2004). *Beyond the Great Divide: Single Sex or Coeducation?* Sydney, UNSW.
- Gillibrand, E., & Robinson, W. P. (2004). Single-sex teaching and achievement in science. *International Journal of Science Education, 26*, 659 - 675.
- Granleese, J., & Joseph, S. (1993). Self-perception profile of adolescent girls in a single-sex and mixed-sex school. [Electronic Version]. *The Journal of Genetic Psychology, 60*, 210.
- Hamilton, M. (1985). Performance levels in science and other subjects for Jamaican adolescents attending single-sex and coeducational high schools. *International Science Education, 69*, 535-547.
- Green, R., & Carl, B. (2000). A reform for troubled times: Takeovers of urban schools. *Annals of The American Academy of Political and Social Science, 569*. 56-70.
- Grossman, J. (2002). The Bush Administration's push for single-sex education: An attempt to erode federal gender equality guarantees? [Review]. Find Law.
<https://supreme.findlaw.com/legal-commentary/the-bush-administrations-push-for-single-sex-education.html>
- Halpern, D. (1986) *Gender differences in cognitive abilities*. Hillside, NJ: Earlbaum.
- Hansen, P., Kaminski, E., & Mulholland, J. (2004). Do single-gender classrooms in coeducational settings address boys' underachievement? An Australian study, *Educational Studies, 30*:1, 19-32.

- Hansot, E., & Tyack, D. (1992). *Learning together a history of coeducation in American public schools*. Russell Sage Foundation.
- Harker, R. (2000). Achievement, gender and the single-sex/ coed debate. *British Journal of Sociology of Education*, 21: 203-218.
- Hawley, R. (1993). A case for boys' schools, in: D. Hollinger (Ed.), *Single-gender schooling: Perspectives from practice and research* (vol. 1). Washington, DC, Office of Educational Research.
- Haycock, K. (1998, January 8). Achievement in urban schools: What makes the difference? A conversation with Kati Haycock of the Education Trust (A. Freel, Interviewer) [Review]. *Education Watch*, 1996, In CITYSCHOOLS, *Highlights From the 2000 Program for International Student Assessment (PISA)*, (n.d.).
<https://nces.ed.gov/pubs2002/2002116.pdf>
- The Hjalli Model. (n.d.).
<https://www.hjallimodel.com/>
- The history of special education in the United States*. (2014). Specialednews.com.
<http://www.specialednews.com/the-history-of-special-education-in-the-united-states.htm>
- Hoffman, B., Badgett, B., & Parker, R. (2008). The effect of single-sex instruction in a large, urban, at-risk high school. *Journal of Educational Research*, 102. 15-36.
- How do single-sex schools boost self-esteem? (2021). Seattlepi.com.
<https://education.seattlepi.com/single-sex-schools-boost-selfesteem-3150.html>
- Hunter, J. S., & West, A. (1993). Parents' Views on Mixed and Single-Sex Secondary Schools. *British Educational Research Journal*, 19, 369-380.

<https://doi.org/10.1080/0141192930190406>

Hunter, M. (2016). All girls, all boys, all good—The benefits of single-sex education, *The Foreign Service Journal*

<https://afsa.org/all-girls-all-boys-all-good-benefits-single-sex-education#:~:text=I%20could%20shed%20all%20of>

Jabari, K., Moradi Sheykhjan, T., & Rajeswari, K. (2014, September). Self-esteem and academic achievement of high school students. *Cognitive Discourses: International Multidisciplinary Journal* 2(2), 38-41.

Jackson, C., & Smith, D. (2000). Poles apart? An exploration of single-sex and mixed-sex educational environments in Australia and England. *Educational Studies*, 26(4), 409–422.

Kessels, U., & Hannover, B. (2008). When being a girl matters less: Accessibility of gender-related self-knowledge in single-sex and coeducational classes and its impact on students' physics-related self-concept of ability. *British journal of Educational Psychology*, 78(2), 273-289.

Klein, A. (2015, April 11). No Child Left Behind: An overview. *Education Week*.

<https://www.edweek.org/policy-politics/no-child-left-behind-an-overview/2015/04>

Kombe, D., Che, M., Carter, T., & Bridges, W. (2016). Student academic self-concept and perception of classroom environment in single-sex and coeducational middle grades mathematics classes: Academic self-concept in mathematics. *School Science and Mathematics*. 116. 265-275.

- Kunjufu, J. (2001). *State of emergency: We must save African American males*. African American Images.
- Landmark Supreme Court Cases. (2019). *Brown v. Board of Education*, 555, 123-4567, landmarkcases.dcwdbeta.com.
<https://www.landmarkcases.org/cases/brown-v-board-of-education>
- Lindsey, L. L. (2018). *Gender roles: A sociological perspective*. Routledge.
- Livingston, J. N., & Nahimana, C. (2006). Problem child or problem context: An ecological approach to young Black males. *Reclaiming Children and Youth*, 14(4), 209–214.
- Mael, F. A. (1998). Single-sex and coeducational schooling: Relationships to socioemotional and academic development. *Review of educational research*, 68(2), 101-129.
- Malacova, E. (2007). Effect of single-sex education on progress in GCSE. *Oxford Review of Education*. 33, 233-259. 10.1080/03054980701324610.
- Martino, W., & Meyenn, B. (2002). 'War, guns and cool, tough things': Interrogating single-sex classes as a strategy for engaging boys in English. *Cambridge Journal of Education*. 32. 303-324.
- Martino, W., Mills, M., & Lingard, B. (2005). Interrogating single-sex classes as a strategy for addressing boys' educational and social needs. *Oxford Review of Education*, 31(2), 237–254. <http://www.jstor.org/stable/4618616>.
- Massachusetts Passes First Education Law. (2006, April 14). Massmoments.org.
<https://www.massmoments.org/moment-details/massachusetts-passes-first-education-law.html>

NASSPE. (2009). *Single sex vs. coed: The evidence*. [National Association for Single Sex Public Education].

<http://www.mcrcad.org/evidence.html#:~:text=Their%20analysis%2C%20based%20on%20six,and%20girls%20in%20coeducational%20settings>.

National Center for Education Statistics [NCES]. (2017). National Center for Education Statistics (NCES) Home Page [part of the U.S. Department of Education].

National Center for Education Statistics. <https://nces.ed.gov/>

National Center for Education Statistics [NCES]. (2021). National Center for Education Statistics (NCES) Home Page, [part of the U.S. Department of Education].

National Center for Education Statistics. <https://nces.ed.gov/>

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 101, Stat. 1425 (2002).

<https://files.eric.ed.gov/fulltext/ED556108.pdf>OECD. (2018). *Programme for International Student Assessment. – PISA*. Oecd.org. <https://www.oecd.org/pisa/>

Osgood, R. L. (2005). *The history of inclusion in the United States*. Gallaudet University Press.

Parker, L., & Rennie, L. (2002). Teachers' implementation of gender-inclusive instructional strategies in single-sex and mixed-sex science classrooms.

International Journal of Science Education. 24, 881-897.

Principal Leadership. (2012, April 15). National Association of Secondary School Principals.

<https://www.nassp.org/publication/principal-leadership/>

Prison Policy Initiative. (2021). Prison Policy Initiative.

<https://www.prisonpolicy.org/>

Protheroe, N. (2009). Single-sex classrooms. *Principals*, 88(5), 32-35.

Purkey, W. (1988). *An overview of Self-Concept Theory for counselors*.

ERIC Digest: ED304630)

Reeves, D. B. (2005). High performance in high poverty schools; 90/90/90 and beyond.

[Public Full Test].

https://www.researchgate.net/publication/228772648_High_performance_in_high_poverty_schools_909090_and_beyond

Reeves, D. (2018). The latest on 90/90/90 schools: How high poverty, high minority, and high achieving schools succeed. (n.d.). [YouTube Video]. In *YouTube*.

<https://www.youtube.com/watch?v=vIDmCrhEpek>

Ribeiro, C. (2019, October 25). Co-ed versus single-sex schools: “It’s about more than academic outcomes.” *The Guardian*.

<https://www.theguardian.com/australia-news/2019/oct/26/co-ed-versus-single-sex-schools-its-about-more-than-academic-outcomes>.

Riordan, C. (1990). Single-gender schools: Outcomes for African and Hispanic Americans. In *Research in the Sociology of Education and Socialization* 18, 177-205. Greenwich, CT: JAI Press.

Riordan, C. (1994, February 23). Reconsidering single-gender schools. *Education Week*.

<https://www.edweek.org/education/opinion-reconsidering-single-gender-schools/1994/02>.

Sax, L. (2005) *Why gender matters*. Sydney, Doubleday.

- Sax, L. (2006). Six degrees of separation: What teachers need to know about the emerging science of sex differences.” *Educational Horizons* 84(Spring): 190–212.
- Scott, J. (1994, January 15). Boys only: Separate but Equal?: Does placing black youths in their own classes help them do better?. [Review, *Los Angeles Times*].
- Self-Esteem. (n.d.). [Definition]. Lexico. <https://www.lexico.com/en/definition/self-esteem>
- Sharpe, W. (2008). Single-gender classes: Are they better? *Education World*.
Educationworld.com. https://www.educationworld.com/a_curr/curr215.shtml
- Silber, E., & Tippett, J. S. (1965). Self-esteem: Clinical assessment and measurement validation. *Psychological Reports*, 16(3, Pt. 2), 1017–1071.
- Simson, G. J. (2005). Separate but equal and single-sex schools. *Cornell Law Review*, 90, 443.
- Single-gender academies. (n.d.). Atlanta Public Schools
www.atlantapublicschools.us.
<https://www.atlantapublicschools.us/page/29308>
- Single-sex schools boost self-esteem. (2021).
<https://education.seattlepi.com/single-sex-schools-boost-selfesteem-3150.html>
- Smith, I. (1996, August). The impact of schooling on student self-concepts and achievement. [paper presented]. Biennial meeting of the International Society of the Study of Behavioral Development.
<https://files.eric.ed.gov/fulltext/ED400090.pdf>
- Smith, N. (1999). Student and teacher perceptions of a single-sex middle school learning environment, pp. 1-9.

ERIC: <https://eric.ed.gov/?id=ED434055>

Smyth, E. (2010). Single-sex education: What does research tell us? *Revue Française de Pédagogie*, 171, 47–58.

Tichenor, M., Tichenor, J., Piechura, K., Heins, E. & MacIssac, D. (2015). Elementary student perspectives on single-gender classes. *Journal of Curriculum and Teaching*, 4(2), 80-85.

Title IX enforcement highlights (2012).

<https://www2.ed.gov/documents/press-releases/title-ix-enforcement.pdf>

Torggrimson, B. N., & Minson, C. T. (2005). Sex and gender, :what is the difference? *Journal of Applied Physiology*, 99(3), 785–787.

<https://doi.org/10.1152/jappphysiol.00376.2005>

Tsolidis, G. & Dobson, I., R. (2006) Single-sex schooling: Is it simply a ‘class act’?, *Gender and Education*, 18:2, 213-228.

Understanding education as a right. (2001). Right to Education Initiative.

<https://www.right-to-education.org/page/understanding-education-right>

U.S. Department of Education. (2020). Title IX and Sex Discrimination. Ed.gov.

https://doi.org/http://www.ed.gov/about/offices/list/ocr/docs/tix_dis.html

Vaught, C., Singh, K., & Mitchell, E. W. (1998). Single-sex classes and academic achievement in two inner-city schools. *The Journal of Negro Education*, 67(2), 157–167. <https://doi.org/10.2307/2668225>

Warrington, M., & Younger, M. (2003). ‘We decided to give it a twirl’: Single-sex teaching in English comprehensive schools. *Gender and Education*, 15, 339 - 350.

- Weil, E. (2008, March 2). Teaching boys and girls separately. *The New York Times*.
<https://www.nytimes.com/2008/03/02/magazine/02sex3-t.html>
- Williams, M. (2007, Fall). Struggling girls single-gender education may be the answer.
Paradigm
<https://www.ncgs.org/wp-content/uploads/2017/11/Struggling-Girls-Single-Gender-Education-May-Be-the-Answer.pdf>
- Willis, R., Kilpatrick, S., & Hutton, B. (2006). Single-sex classes in co-educational schools. *British Journal of Sociology of Education*, 27(3), 277-291
- Wong, H. K., & Wong, R. T. (2018). *The first days of school: How to be an effective teacher*. Harry K. Wong Publications.
- Yates, L. (1993) The education of girls: Policy, research and the question of gender. Hawthorn, ACER. *Australian Review*, 35.
<https://eric.ed.gov/?id=ED369719>
- Van de Gaer, E., Pustjens, H., Van Damme, J., & Munter, A. (2009). School engagement and language achievement: A longitudinal study of gender differences across secondary school. *Merrill-Palmer Quarterly*. 55, 373-405. 10.1353/mpq.0.0034.
- Varlas, L. (2005). Bridging the widest gap: Raising the achievement of black boys. *Education Update*, 47(8). [www.ASCD.org](http://www.ascd.org).
<http://www1.ascd.org/publications/newsletters/education-update/aug05/vol47/num08/toc.aspx>
- Younger, M., Warrington, M., Gray, J., Rudduck, J., Mclellan, R., Bearne, E., Kershner, R., & Bricheno, P. (2005). *Raising boys' achievement*. Cambridge University.
<https://dera.ioe.ac.uk/5400/1/RR636.pdf>

Zanders, A. (1993) A presentation of the arguments for and against single-gender schooling, in: D. Hollinger (Ed.) *Single-gender schooling: perspectives from practice and research* (vol 1). Washington, DC, Office of Educational Research.